CHAPTER - I
INTRODUCTION

1.1 General Background of the Study

Nepal is an economically weak country situated between two huge developed countries. As being developing country, Nepal is striving to develop and modernize her economy rapidly on rational and socially desired footings. But the structure of the economy has still remained primarily agricultural with very small manufacturing base. So, it is essential to divert and modify agro based economy. Nepal has adopted mixed and liberal economic policy with the implicit objective to help the state and the private sector, on the ground of open and liberal eco system.

Especially after restoration of the democracy, the concept of the liberalization policies has been incorporated as directive principle and state policies. The continuing thrust to the development of Nation has helped in establishing many company banks, financial institution and manufacturing industries. Thus this establishment helps the country for its development in some level but for actual economic development, capital formation and utilization are the two major things that should be essential for the investment in a country. The formation and utilization of capital are shaped by many factors like prosperity of country, lending-deposit pattern, and interest rate and so on. In modern economy Banks and financial institutions plays the major role for capital generation and utilization. In other words they take part actively in funds mobilization. Keeping other factors constant, interest rate also plays the dominant role in borrowing and lending.

The interest rate is the price charged to borrower for the loan of money. In very general term, interest rate is the price paid for credit. So, it is computed dividing the cost of borrowed fund in rupees by the amount of money actually used by the borrower. An interest rate is the cost of borrowing money. Without it, people would not be willing to lend or even save their cash, both of which require a deferment of the opportunity to give up spending in the present. But prevailing interest rates are always changing and different types of loans will offer various interest rates. The interest rate is expressed in an annual percentage basis. As the interest rate provides the price signal in the financial system, thus it is important to all the participants: the

borrowers, the lenders, savers, and investors for example, higher interest rate encourages savings in greater volume and increases the lending activities of funds. Lower interest rate, in other hand, discourages the savings and reduces the lending activities as well. Interest is the price that one pays for utilising a certain amount of money for a specific period of time. Interest can thus be considered a cost for one entity and income for another. Interest is the opportunity cost of keeping your money as cash under your mattress as opposed to lending. If you borrow money, then the interest you have to pay is less than the cost of forgoing the opportunity to have the money in the present.

Weston & Brigham (2004), in their book "Fundamentals of Financial Management" have identified four fundamental factors affecting the cost of money which are (a) Production opportunities (b) Time preference for consumption (c) risk & (d) inflation. They have added risk and inflation to as fundamental factors of determining interest rate. Risk is the borrower's ability to repay the loan. In financial market context, risk is the chance that financial assets will not earn the return promised. On the other hand, inflation is the tendency of prices to increase over time.

Thus we see that interest rate paid to savers depends in the following ways.

- On the rate of return, producer expects to earn on invested capital
- On Saver's time preference for current versus future consumption
- On the risk of the loan and
- On the expected rate of inflation

Deposit collection and mobilization is one of the major sources of capital formation. Deposit mobilization is primary and crucial function of any commercial bank. Bank provides facility of saving to general public and provides funds to investors, which help in mobilization of public fund in fruitful purposes, which helps in country's economic development. The collection of deposit and its mobilisation are the two sides of the same coin, in the absence of one, another cannot work i.e. without the collection of deposit, mobilisation of deposits would be quite impossible and vice versa. They both get along with another under favourable condition, interest rate being the most. Interest is the main factor in fund activities of commercial banks. Interest rate affects on the collection of deposits mobilisation of saving position.

1.1.1 Brief Profile of the Sample Banks

In this section, general introduction of sample banks under study is given. This is supposed to the useful in the proper understanding of research work. Although 32 commercial banks are actively working in the nation, out of them only 4 banks are taken as samples. Here is the brief introduction of all sample banks.

Rastriya Banijya Bank

Rastriya Banijya Bank (RBB) is fully government owned and the largest commercial bank in Nepal. RBB was established on January 24, 1966 (2022 Magh 10) under the RBB Act. RBB provides various banking services to a wide range of customer including banks, insurance companies, industrial trading houses, airlines, hotels, and many other sectors. RBB has Nepal's most extensive banking network with over 142 branches. Through its branch network, RBB has been contributing to Nepal's economic development by providing banking services throughout the country. RBB has many correspondent arrangements with major international banks all over the world that facilitate trade finance, bank-originated personal funds transfers and interbank fund transfer via SWIFT. In a bid to promote remittance business, RBB works with Western Union and International Money Express, two leading person-to-person funds transfer networks. In addition, RBB runs various programs i.e. banking with the poor, micro credit projector women etc. to enhance the living standard of people as per the govt. directives. As well, RBB actively delivers various government programs to people living in remote areas of the country, these programs are intended to raise living standards.

Nabil Bank limited

Nabil Bank limited, previously known as Nepal Arab Bank Limited, the first joint venture bank of Nepal, started its operation from July 1984. Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. The head office of Nabil is located at Kamaladi, Kathmandu. Pursuing its objective, Nabil provides a full range of commercial banking services through its 49 points of representation across the nation. 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 on era of modern banking with customer satisfaction measured as a focal objective while

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

Bank of Kathmandu

Bank of Kathmandu (BOK) started its operations from March 1995 with the objective to stimulate the Nepalese economy and takes it to newer heights. The head office of BOK is located at Kamaladi, Kathmandu. BOK also aims to facilitate the nation's economy and to become a landmark in the Nepalese banking sector by being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public. It has the largest net-work and at present it is serving in different locations throughout the country through the 50 branches, 8 extension centres and 56 ATM centres.

Standard Chartered Bank Limited Nepal

Standard Chartered Bank Nepal Limited (SCBL), previously known as Nepal Grindlays Bank Limited has been in operation in Nepal since 30th January 1987 when it was initially registered as a joint-venture operation. Today the bank is an integral part of Standard Chartered Group having an ownership of 75% in the company with 25% shares owned by the Nepalese public. The bank enjoys the status of the largest international bank currently operating in Nepal, with 16 points of representation, 23 ATMs across the country. Standard Chartered Bank Nepal Ltd. is in a position to serve its customers through an extensive domestic network. In addition, the global network of Standard Chartered Group gives the bank a unique opportunity to provide truly international banking services in Nepal.

1.2 Statement of the Problem

Banking sector has always been the promising sector giving high return and value to its promoters and shareholders; their down looking financial scenarios has created very less investment alternatives and comparatively lower return. Our country showed several banks within short period of time fighting for small amount of market share, which requires excessive force making high operational cost. Interest rates as a major

tool to change the fortune of the bank it has always been modified as per situation and economy. After commercial banks received autonomy to determine their own interest rate they have greater burden to carry if it is to shoulder responsibility to drag country towards prosperity. An appropriate interest rate is always sought to keep both parties i.e. depositors and borrowers at profitable minimum. Due to stiff competition between the banks to increase the volume of deposit and loans and investments it has been working under very less interest spread which is able to hardly cover total cost. This has been 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 has been high tendency to transfer fund from less interest bearing bank to higher interest bearing ones while lower rated lending banks are seeing huge loan applications.

The change in interest rates certainly has deep impact on the activities of the commercial banks. This study basically deals with such impacts of interest rate on the deposit mobilization. The main attempt of this study will be to answer the following questions.

- What is the impact of fluctuations in the interest rates on deposit, loan and investment?
- Do interest rate structures affect the investments of commercial banks?
- Do charges in interest rates affect total deposits and loans of commercial banks?
- Is interest rate the main factor in attracting customers to deposit and lend in banks?

1.3 Objectives of the Study

The main objective of this study is to know the overall influence of interest rate on deposit of commercial banks as well as to identify whether the interest rate spread is satisfactory or not. Besides this the other specific objectives related to this study are as given below.

- To examine the impact of the interest rate on the mobilization of deposits.
- To analyze the trend of deposit, loan and advances.
- To analyse the relationship of deposit with interest rate and loan & advances.

1.4 Significance of the Study

As the interest rate provides the price signal in the financial system, thus it is important to all the participants: the borrowers, the lenders, savers, and investors for example, higher interest rate encourages savings in greater volume and increases the lending activities of funds. Lower interest rate, in other hand, discourages the savings and reduces the lending activities as well. Hence economic growth depends upon circulation of money and financial system facilitates it. Researcher believes that following institution and individual will be benefited from the study.

- Individuals who have keen interest in Nepalese economy and banking sector.
- Investors, depositors, borrowers and others who are directly and indirectly involved on financial market.
- By the help of this study, general public can know the interest rates offered by banks for deposits of the Nepalese commercial banks.
- The study of interest rate and its impact on deposits would provide information to the management of concern banks that would be helpful to take corrective actions in the banking activities.
- Individuals who have keen interest in Nepalese economy and banking sector.

1.5 Limitations of the Study

Though this study has been attempted to an accurate and deficiency free, the use of different econometric models for the analysis of impact of interest rate on deposit mobilisation may have rendered it quite reliable. The empirical analysis has been done only for a period of five years and this may serve as a constraint for future studies made on the subject. Every research has more or less limitation. Lack of experiences, time financial resources and up to date information are the main limitation of the study. For the completion of this study, some facts are to be considered as the limitation. These are presented as below.

- The study covers only a period of 5 years.
- This study is based on secondary data. Accuracy depends upon the data collection and provided by the banks.
- The study is based on the annual data only.
- Sample size is small, due to the time constraint.

1.6 Organisation of the Study

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

The first chapter, Introduction, It includes various aspects of present study like Background of the Study, Focus of the Study, statement of the problem, objective of the study, significance of the study and limitation of the study.

The second chapter, Literature Review, presents concepts of interest rate theories, factors affecting interest rates, concepts of deposit with the study of related books, journal and thesis.

The third chapter, Research Methodology, includes research design, nature and source of data, population and sampling of the study, methods and tools of analysis of data and at last definition of key terms.

The forth chapter, Data Analysis and Presentation, is the main aspect of the study. It deals with data collection procedure and presentation of data with different statistical and financial tools, and findings of the study.

The fifth chapter, Summary, Conclusion and Recommendation, presents the summary of whole study, conclusion and recommendation.

CHAPTER - II
REVIEW OF LITERATURE

A review of literature is important in order to have a better insight into this subject matter. The review of literature provides basic foundations to this study. The various concepts employed in the study are, in fact, derived from the different literature surveyed in this part. The review of these literatures has been described in three parts. This first part presents discussion on conceptual frameworks while the other two parts deal with review of literature in the international context, and review of Nepalese studies.

2.1 Conceptual Framework

Interest rate is one of the important variables in economics and financial system of the country. In common terms interest is a payment made by a borrower to the lender for the money borrowed and is expressed as a rate percentage per year. But in economics widely different views have been put forth from the time of Aristotle to the present day. Aristotle recognized only animal husbandry and stock rising as two legitimate industries whose products could be lent and interest earned on them. In economics interest has been defined in a variety of ways. Commonly interest is regarded as the payment for the use or service of capital. If retained by owner, it can be used by him for further production and the additional product he gets through the employment of this capital includes interest. If he had lent his capital to someone else, he would have received interest in returns. As Carver said," Interest is the income which goes to the owner of capital." According to classical economists "it is only by postponing consumption that capital can be created." (Cooper & Fraser 1983:152). Since to abstain from consumption is disagreeable and painful, the lender is paid a reward in the form of interest. When people abstain from consumption they save and thus interest becomes the reward for saving. Saving however, does not involve any sacrifice of abstinence on the part of rich. To avoid this fallacy, Marshall substituted the word "waiting" for abstinence and interest is then the reward for waiting. People prefer present to the future and hence they attach more importance to present goods. In order to induce them to postpone enjoyment of goods in the present to the future, they must be compensated in the form of interest. Interest is thus the difference between the present enjoyment and future enjoyment of some goods. The neo-

classical economists however defined it as the price for the use of loanable funds. But the modern economists in their effort to avoid these divergent and controversial views about the nature of interest, have explained it in terms of productivity, saving, liquidity preference and money. In other words, interest is simultaneously the reward for the pure yield of capital, of saving for the forgoing of liquidity and the supply of money.

Interest rate is also an important factor in the financial system. The interest rate is the price of money, the price of renting the use of the resources that money commands for a specified period of time. The acts of saving and lending, borrowing and investing are linked through the financial system. And one of the factors that significantly influences and ties all of them together is the rate of interest. The rate of interest is the price a borrower must pay to secure scarce lonable funds from a lender for an agreed upon time period. It is the price of credit, but unlike other prices in the economy the rate of interest is really a ratio of two quantities: the money cost of borrowing divided by the amount of money actually borrowed, usually expressed on an annual percentage basis. Interest rates send price signals to borrowers, lenders, savers and investors. For example higher interest rate generally brings forth a greater volume of savings and stimulated the lending of funds. Lower rates of interest on the other hands, tend to dampen the flow of savings and reduce lending activity. Higher interest rates tend to reduce the volume of borrowing and capital investment and lower interest rates stimulate borrowing and investment spending. The rate of interest, according to Keynes, is a purely monetary phenomenon, a rewarded for parting with liquidity, which is determined in the money market by the demand and supply of money. In Keynes' monetary theory he has presented a proposition that the rate of interest influences the level of economic activity by first influencing the rate of real investment in the economy. According to him the real investment is in fixed capital or durable machines. Shculz has also expressed his view that, "An important aspect of interest rate policy is the setting of an appropriate margin between the lending and deposit rate, If the margin is too high, banks will make excessive profits and this lead to waste of saved resources. If is too low it will discourage intermediation and devitalize financial institutions. At the same time the demand for credit goes on increasing being affected by the cheap loan rates. Hence it can be concluded that changes in interest rate structure produces either positive or negative impact upon the

growth of developing economy such as ours. When such amendments are introduced without thinking seriously, there spread more negative effects than positive. There are different interest rates in the financial system. Even securities issued by the borrower often carry a variety of interest rates. Some common types of interest rate are as follows.

Risk free rate of interest: It is a component of all interest rates. Pure interest rate is what remains with the lender after deducting the reward for risk taking from gross interest. The pure or risk free rate of interest exists only in theory, the closest real world approximation to this pure rate of return is the market interest rate on government bonds less inflation. It is a rate of return presenting little or no risk of financial loss to the investor. And it represents the opportunity cost of investing in government bonds with no risk and earns this minimum rate of return.

Gross interest: The payment, which the borrower makes to the lender excluding the principal, is gross interest.

Reward for risk taking: Interest also includes reward for risk taking. The lender exposes him to risk when he lends money. The greater the risk element the higher the rate of gross interest. Unsecured loans are more risky than secured loans and they carry a high premium rate.

Interest rates have diverse roles and functions in the economy. Its roles can be notices as a reward to capital which is a factor of production, a return to saving a cost of investment as an instrument of monetary policy for credit control. Its functions are: It helps guarantee that current savings will flow into investment to promote economic growth. It rations the available supply of credit generally providing lonable funds to those investment projects with the highest expected returns. It brings the supply of money into balance with the public's demand for money.

2.1.1 Theories of Interest Rate

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

A) The Classical Theory of Interest Rates

One of the oldest theories concerning the determinants of the pure or risk-free interest rate is the classical theory of interest rates, developed during 18th and 19th centuries by a number of British economists and elaborated by Irving Fisher (1930) earlier in this century. The classical theory argues that the interest is determined by two forces: first is supply of savings, derived mainly from households, and second the demand for investment capital, coming mainly from the business sector (Rose, 2003:114).

B) The liquidity Preference Theory of Interest

The classical theory of interest has been called a long-term explanation of interest rates because it focuses on public's thrift habits and productivity of capital-factors that tend to change slowly. During the 1930s, British economist John Maynard Keynes (1936) developed a short-term theory of the rate of interest that, he argued, was more relevant for policy makers and for explaining near-term changes in interest rates. This theory is known as liquidity preference theory of interest. In this theory interest is the interplay of demand for liquidity and supply of money.

The Demand for Liquidity

Keynes argued that the rate of interest is really a payment for the use of scarce resources, money. Businesses and individuals prefer to hold money for carrying out daily transactions and also as a precaution against future cash needs even though its yield is low or nonexistent. Investors in fixed-income securities, such as corporate and government bonds, frequently desire to hold money as a haven against declining security prices. Interest rates therefore are the price that must be paid to induce money holders to surrender prices.

The supply of money

The major element determining interest rates in liquidity preference theory is the supply of money. In modern economies, the supply is controlled, or at least closely regulated, by government decisions concerning the size of money supply presumably are guided by the public welfare, not by the level of interest rates; we assume that the supply of money is inelastic with respect to the rate of interest.

C) The Loanable Fund Theory of Interest Rate

The loanable fund theory of interest rate assumes that the risk free rate of interest is determined by the demand for and supply of credit. This theory is based on the assumption in considering the elements of both classical and liquidity preference theories.

d) The Rational Expectation Theory

The rational expectation theory of interest focuses upon the total expected supply of credit relative to the expected demand for credit determines the rate of interest. This view of interest rates and asset prices assumes that the money and capital markets are highly efficient in the use of information in determining the public's expectations regarding future changes in interest rates and asset prices. This expectation theory assumes that business and individuals are rational agents who form expectations about the distribution of future asset prices and interest rates that do not differ significantly from optimal forecasts made from using all the available information that the marketplace provides. The rational agents attempt to make optimal use of the resources at their disposal to maximize their returns.

2.1.2 Functions of Interest Rate in the Economy

The interest rate performs several important roles in order to function properly the money and capital market in the economy. The major functions cal lists:

- To generate adequate volume of savings to fund investment and thus to grow the economy.
- To direct the flow of credit in the economy toward those investment projects having greater expected rate of return.
- Brings into balance the supply of money with the public's demand for money.
- Acts as important tools to adopt government policy.

2.1.3 Determinants of the Interest Rates

Supply and demand

Interest rate levels are a factor of the supply and demand of credit: an increase in the demand for credit will raise interest rates, while a decrease in the demand for credit

will decrease them. Conversely, an increase in the supply of credit will reduce interest rates while a decrease in the supply of credit will increase them.

The supply of credit is increased by an increase in the amount of money made available to borrowers. For example, when you open a bank account, you are actually lending money to the bank. Depending on the kind of account you open (a certificate of deposit will render a higher interest rate than a checking account, with which you have the ability to access the funds at anytime), the banks can use the money for its business and investment activities. In other words the bank can lend out that money to other customers. The more banks can lend, the more credit there is available to the economy. And as the supply of credit increases, the price of borrowing interest decreases.

Interest rate levels are a factor of the supply and demand of credit: an increase in the demand for credit available to the economy is decreased as lenders decide to defer the re-payment of their loans. For instance, when you decide to postpone paying this month's credit card bill until next month or even later, you are not only increasing the amount of interest you will have to pay, but also decreasing the amount of credit available in the market. This in turn will increase the interest rates in the economy.

Inflation

Inflation will also affect interest rate levels. The higher the rate of inflation, the more interest rates are likely to rise. This occurs because lenders will demand higher interest rates as compensation for the increase in the decrease in the purchasing power of the money they will be repaid in the future.

Government

The government has a say in how interest rates are affected. The U.S. Federal Reserve often comes without announcements about how monetary policy will affect interest rates. The federal funds rate, or the rate that institutions charge each other for extremely short-term loans, affects the interest rate that banks set on the money they lend; the rate then eventually trickles down into other short-term lending rates. The Fed influences these rates by the use of "open market transactions", which is basically the buying or selling of previously issued U.S. securities. When the government buys more securities, banks are injected with more money than they can use for lending, and the interest rates then decrease.

Default Risk Premium

Default risk is the risk that security issuer will default on making its promised interest rate and principal payment to the buyer of security. The higher the default risk, the higher the interest rate that will be demanded by the buyer of security to compensate him/her for this default (or credit) risk exposure. Not all securities are default risk, for example Government securities are regarded as having no default risk. Since they issued by the government, and the probability of government defaulting on its debt payment is practically zero.

In same way in banks the saver of deposit wants more interest if there is high default risk rather than low default risk. The different on interest rate when there is default risk and not is default risk premium.

Liquidity Premium

Investor offered a premium to compensate for future uncertainty in the securities value which increases with an assets maturity. Specifically, in a world of uncertainty, investor prefers to hold short term securities because they can be converted into cash with little risk of capital loss. Therefore, investor must be offered a liquidity premium to buy longer term securities that have high risk of capital looses. The liquidity premium theories states that long term rates are equal to geometric average of current and expected short term rates plus liquidity risk premiums that increase with the maturity of the security.

Maturity Risk Premium

Maturity period is an important factor in investment if maturity period of securities is more then investor wants a high interest rate on investment. Because he/she sacrifice the present benefit of this amount and there is more risk, future is uncertain so investor want high interest rate. Just like in the bank fixed deposit have more interest rate then saving deposit.

2.1.4 The Current Interest Rate Policy of Nepal Rastra Bank

Interest rate spread is to be maintained at 5% with a view to maintain the weighted average interest rate spread between interest rate offered on the deposit and the interest rate charged on the loans by the commercial banks within the 5% levels. Nepal Rastra Bank has made the following provisions in calculating such spread.

The following procedures are to be followed for the calculation of the interest rate spread.

- The calculation of the interest rate spread is based on the interest expenditures payable on the total domestic and foreign deposits held by the commercial banks as well as the interest income of the commercial banks received in domestic and foreign currency from loans and advances, money at call and balances held abroad.
- For any specific period, the weighted average deposit rate is to be calculated by dividing the sum of the interest expenses on the total deposits by monthly average deposits and multiplying it by 100. Deposits here include the current deposits, saving deposits, fixed deposits; money at call and other deposits both in domestic and foreign currencies. Likewise weighted average lending rate is to be calculated by dividing the sum of the interest income by monthly average amount of loans and advances, investment, money at call and balances held abroad and then multiplying it by 100. The inter-banking lending is not including in calculation.
- Difference between weighted average lending rate and the weighted average deposit rate is considered to be the weighted interest spattered.

Interest spread is to be calculated and monitored based on the half yearly data (From August to January and from February to July). These data is to be filled up in a prescribed format and dispatched after internal auditing, to the banking operations department and to the inspection and supervision department of the Nepal Rastra Bank within a period of 2 months. Commercial banks are also required to send the prescribed data on the monthly basis to the above departments.

If the interest spread of any commercial banks exceed stipulated spread limit of 5%, exceeding amount of interest income of that period should be deposited in a separate special reserve fund created for it. Distribution out of this fund is restricted. However, such special fund can be treated as supplementary capital for the purpose of calculating capital adequacy.

2.2 Commercial Banks

A Commercial Bank is a business organization, which deals in money; it borrows and lends money. In the borrowing and lending of commercial bank may be noted. Whereas money lender only lends money to others and that too from his owned sources, a commercial bank raises its resources through borrowing from the public in the form of deposits and lends them to the businessmen. Its Lending rate of interest is greater than that it pays to its depositors. It is because of this difference in lending and borrowing rates of interest that it is able to make profit (Ahuja, 2002 p 45)

Major function is accepting demand deposit and providing short-term loans to business sector, but it doesn't mean that commercial banks are limited only in checking account business, It accepts all kinds of deposits and provides other kinds of loans, too. Besides them commercial banks provides various service to its valued customers by other various kinds of financial assistant.

Bank of Venice set up in 1157 is the first Commercial Bank. In the beginning Commercial Banks' function were now increased manifold, Commercial Banks are found cooperating throughout the world. Nepal Bank limited is the first commercial Bank established in Nepal it was established in the years 1994.B.S.

Hence we can conclude from the above that the commercial banks are established under the rules and legislation of the central bank of the country. it has to move as per the directives given by the central banks though banks are established for the mobilization of the saved funds central bank makes certain rules so that the publish or the customer of the bank may not under gone on is of their hard earned money by the disinvestments procedures of the bank.

The definition of commercial banks, of some noted scholars are described below;

“The American institutions of Banking has laid down the fern major function of commercial banks such as receiving and handling deposits, handling payment for its clients, making loan and investment and creating money by extension of credit ."

" A commercial bank is one which exchanges money , accepts deposits, grants loans and perform com banking function and which is not a bank meant of co-operative , agriculture , industries or for such specific purpose "

Commercial banks is a heart of financial system thy hold the deposits of many person , Government establishment , business unit , They make fund available through their lending and investing activates to borrower , individuals, business firms and services from the producers to customers and the financial activities of the government.

In this way commercial banks are those banks, which are engaged in commercial banking transaction and exclude from ' description. From the above definition of commercial bank, it can be defined as a bank is a financial institution of any business, which performs widest range of economic and financial function of any business firm in the economy. The commercial people and provide loan against proper security for their productive purpose. Moreover they also provide technical helps and suggestions administrative suggestion, safe keeping of valuable collectives of bills, cheque and overdraft facilities and provide modern banking facilities to industries and commerce.

2.2.1 List of Commercial Banks in Nepal

Table 2.1

S. N.	Commercial Banks	Operation Date	Head Office
1	Nepal Bank Limited	1937/11/15	Dharmapath, Kathmandu
2	Rastriya Banijya Bank	1966/01/23	Singhdarbarplaza, Kathmandu
3	Nabil Bank Limited	1984/07/16	Kantipath, Kathmandu
4	Nepal Investment Bank Limited	1986/02/27	Durbar Marg, Kathmandu
5	Standard Chartered Bank Nepal Limited.	1987/01/30	Naya Baneshwar, Kathmandu
6	Himalayan Bank Limited	1993/01/18	Thamel, Kathmandu
7	Nepal SBI Bank Limited	1993/07/07	Hattisar, Kathmandu
8	Nepal Bangladesh Bank Limited	1993/06/05	Naya Baneshwar, Kathmandu
9	Everest Bank Limited	1994/10/18	Lazimpat, Kathmandu
10	Bank of Kathmandu Limited	1995/03/12	Kamaladi, Kathmandu
11	Nepal Credit & Commerce Bank Ltd.	1996/10/14	Siddharthanagar, Rupandehi
12	Nepal Industrial & Commercial Bank Ltd	1998/07/21	Biaratnagar, Morang
13	Lumbini Bank Limited	1998/07/17	Narayangadh, Chitawan
14	Machhapuchhre Bank Limited	2000/10/03	Prithvichowk, Pokhara
15	Kumari Bank Limited	2001/04/03	Durbarmarg, Kathmandu
16	Laxmi Bank Limited	2002/04/03	Adarshanagar, Birgunj
17	Siddhartha Bank Limited	2002/12/24	Kamaladi, Kathmandu
18	Agriculture Development Bank Ltd.	2006/03/16	Ramshahapath, Kathmandu
19	Global Bank Ltd.	2007/01/02	Birgunj, Parsa
20	Citizens Bank International Ltd.	2007/06/21	Kamaladi, Kathmandu

21	Prime Commercial Bank Ltd.	2007/09/24	New Road, Kathmandu
22	Bank of Asia Nepal Ltd.	2007/10/12	Tripureswor, Kathmandu
23	Sunrise Bank Ltd.	2007/10/12	Gairidhara, Kathmandu
24	Development Credit Bank Ltd.	2008/05/25	Kamaladi, Kathmandu
25	NMB Bank Ltd.	2008/06/05	Babarmahal, Kathmandu
26	Kist Bank Ltd.	2009/05/07	Anam Nagar, Kathmandu
27	Janata Bank Nepal Ltd.	2010/04/05	Naya Baneshwar, Kathmandu
28	Mega Bank Nepal Ltd.	2010/07/23	Kantipath, Kathmandu
29	Commerz & Trust Bank Nepal Ltd.	2010/09/20	Kamaladi, Kathmandu
30	Civil Bank Ltd.	2010/11/26	Kamaladi, Kathmandu
31	Century Commercial Bank Ltd.	2011/03/10	Putalisadak , Kathmandu
32	Sanima Bank Ltd.	2/15/2012	Nagpokhari, Kathmandu

Source: (NRB, Samachar 2070)

2.2.2 Function of Commercial Banks

Banks collect unused money from public by providing attractive sound interest and can earn profit by lending it on mainly in business organization, industrial and agriculture sectors and investing in government bonds. So, the main function of commercial banks is to mobilize idle resources in productive areas by collecting it from scattered sources and generating profit. There are many functions performed by commercial banks which may be summarized follows.

Accepting Deposits

The main objective of the commercial banks is to collect the deposit. Commercial banks accept the deposit from the public who has surplus funds under three main headings namely current, saving and fixed deposits.

Current Deposits

Current deposits are also known as demand deposits. The demand deposit in which an amount is paid immediately at the time of any account holder's demand is called demand deposit. Though the bank can't gain profit by investing it in new sector after taking from the customer, this facility is given to the customer. Therefore, the bank does not give interest on this account.

Saving Deposits

In saving deposits, there is restriction on the maximum amount that can be deposited and also withdrawals from the account. This deposit is suitable and appropriate for the people of middle class who have low income and small saving. The bank usually pays small interest to the depositors against their deposits.

Fixed Deposits

Fixed deposit is the one, which a customer is required to keep a fixed amount with the bank of specific periods, generally by those who do not need money for the stipulated period. She/he is not allowed to withdraw the amount before expiry of the period. The rate of interest is higher than other deposit. The bank pays a higher interest as such on deposit.

Advancing Loan

Commercial bank collects funds by taking all kinds of deposits and then it mobilizes by providing loans and advances. Direct loans and advances are given to all types of persons against the personal security of the borrowers or against the security of movable and immovable properties. There is various method of advancing loans e.g.

- Overdraft
- Cash credit
- Direct loans
- Discounting bill of exchange etc.

Agency Services

A commercial bank provides a range of investment services. It undertakes to buy and sell securities on behalf of its clients. The banks undertake the payment of subscriptions premiums rents etc. It collects checks, bills, promissory notes, dividends, interest etc on behalf of the customers. The bank charges a small amount of commission for those services. It also acts as correspondent or representative of its customers, others, banks and financial institutions.

Credit Creations

Commercial banks create credit on the basis of deposits. They hold a certain amount of cash reserve to meet obligations. The rest of the deposit amount is invested in loan finance that yields higher rates of interest rates of interest as compared to those payable on deposits. When the bank advances loans, it opens an account to draw the money by cheque according to borrower's needs.

Other Functions

Other functions of the commercial banks include the following.

- Assist foreign trade
- Offers security brokerage services
- Security brokerage service

2.3 Concept of Deposit

The excess of income over consumption required is saved. Such savings are deposited in commercial banks. Even amounts to be spent for consumption purposes are deposited in commercial banks. Payments for goods and services are made in cheques drawn on banks. Banking habit is growing fast. People deposit their earnings in commercial banks because bank vaults are safer than home coffers and interest paid by them on deposits add to earnings. It is the function of commercial banks to accept such deposits and pay interest according to the kind of deposits.

It is important that the commercial bank's deposit policy is the most essential policy for its existence. The growth of bank depends primarily upon the growth of its deposits. The volume of funds that management will use for creating income, through loans and investment is determined largely by the bank's policy governing deposits. In other words, when the policy is restrictive, the growth of bank is restated or accelerated with the liberalization in the deposit policy

A) Interest Bearing Deposit

Deposit in which banks are required to pay interest is known as interests bearing deposit saving, term (fixed), call and recurring deposit are interest bearing deposit.

Saving Deposit

A saving deposit is one in which middle class people and general server open a limited amount of money that can be withdrawn and low level of interest will be provided by bank. This is very common and general deposit account, which is suitable for those classes of people who want to save some portion of their earnings or the money left after the consumption. There are some restrictions in withdrawing money at the same time the limitation depends as per nature of the economy and from one country to the other ever bank to the other.

Fixed Deposit or Time Deposit

This is a kind of deposit in which amount will be deposited for a fixed period of time that money cannot be withdrawn before the expiry of time. So the money deposited in this account can be utilized by banks for medium or long term credit freely being confident that the depositor will not come to claim until the time lapses. The time deposit is the main source of commercial banks for their credit operation. Investment in medium term and long purposes is possible only through this type of deposit. However, the depositor can take loan under security. In the context of Nepal, fixed deposit has been classified according to the following durations:

- Quarterly
- Semi-annually
- Annually
- Annually and above

The rate of interest rate on fixed deposit depends upon the duration of time deposit.

Call Deposit

Call deposit incorporates the characteristics of current and saving deposit. Current deposit in the sense deposit is withdrawn able at "call" and savings in as dense the deposit earns "interest". The companies not entitled to open savings account can open the call accounts. Interest rate on call deposit is negotiable between the bank and the depositor and hence, is normally not published or announced in public.

Interest rate is applied on daily average balance. Withdrawal restriction is not imposed on call deposit but the balance should not go below an agreed level (Dahal Sarita and Dahal Bhusan 1999:30).

Recurring Deposit

Concept of recurring deposit was developed to encourage the thrift among people of fixed regular earning. In recurring deposit scheme, the depositor is required deposit the fixed amount in each installment and is repaid fixed amount at maturity.

B) Non-Interest Bearing Deposit

It is the deposit in which the banks need not to pay interest for the customer of their savings. It is because in this type of deposit customer can withdraw the money at any time or can withdraw daily and the bank could not employ the amount in profitable projects that is why it does not pay any interest in this type of account. Current and margin deposit are non-interest bearing deposit.

Current Deposit

The current deposit account generally is opened by the business persons. They are allowed to withdraw and deposit their money according to their needs. There is no limitation of withdrawing the money. Therefore, these types of deposits are those people who may need money at uncertain times.

Margin Deposit

Bank issue letter of credit, Guarantee and Indemnity on behalf of customer for certain money. These are amount to be paid to the beneficiaries. This action is conditionally liability for bank. Bank demand certain money as deposit to reduce liability. This deposit is called margin deposit. It may vary under mutual understanding. Interest is not paid under such deposit and these deposits are returned to customer, unless any claims by beneficiaries.

Banks open the fictitious margin account in the name of the borrower to put such amount and interest is not paid in such deposit. Margin deposit is required to the customer if the claim is not lodged by the beneficiary.

Therefore, the main objective of deposit mobilization is to convert idle saving into active saving. When discussing about resource mobilization we are mainly concerned with increasing the income of low-income and to make them able to save more and to invest against the collected amount in the development activities.

2.3.1 Deposit Mobilization

Collecting scattered small amount of capital through different Medias and investing the deposited fund in productive sectors with a view to increase the income of the depositors is meant deposit mobilization. In other words, investing the collecting fund in the productive sectors and increasing the income of the depositors, it also supports to increase the saving through the investment of increased extra amount (NRB, Bankers Prakashan)

When we discuss about deposit mobilization, we are concerned with increasing the income of the low income group of people and to make them able to save more and more to invest again the collected amount in the development activities (NRB, bankers Prakasan)

Saving refers to that part of the total income which is more than the expenditure of the individual. In other words, saving equals to total income minus total expenditure. Basically saving can be divided into two parts: voluntary saving and compulsory savings. Amount deposited in different accounts of commercial bank, investment in government securities are some examples of voluntary saving. A commercial bank collects deposit through different accounts like fixed, saving and current.

In developing countries there is always shortage of the capital for the development activities. There is need of development in all sectors. It is not possible to handle and develop all the sectors by the government alone at a time, private people also cannot under take large business because the per capita income of the people is very low while their propensity to consume is very high. Due to the low income, their saving is very low and capital formation is also very low. So their saving is not sufficient for carrying on development works.

To achieve the higher rate of growth and per capita income, economic development should be accelerated. “Economic development may be defined in a very broad sense as a process of raising income per head through the accumulation of capital (Johnson, 1965:11)”. But, how capital can be accumulated in the developing countries? There are two ways of capital accumulation in the developing country one from the external sources and other from the internal sources. In the first group foreign aid, loans and grants are the main. While in the later financial institutions operating within the country play a dominant role. In the context of Nepal, commercial banks are the main

financial institutions which can play very important role in the resource mobilization for the economic development in the country. Trade industry, agriculture and commerce should be developed for the economic development.

Commercial banks are set up with a view to mobilize national resources. The first conditional of National Economic development is to be able to collect more and more deposit. In these context, the yearly increasing rate of commercial banks deposit clearly shows the satisfactory progress of deposit mobilization (RBB, Upahar, 2054).

2.3.2 Requirements for Deposit Mobilization

The following are some reasons why deposit mobilization is needed in a developing country like Nepal.

a) Capital is needed for the development of any sector of the country. The objective of deposit mobilization is to collect the scattered capital in different forms within the country.

b) The need of deposit mobilization is felt to control unnecessary expenditure, if there is no saving, the extra money that the people have, can flow forwards buying unnecessary and luxury goods. So, the government also should help to collect more deposit, steeping legal procedures to control unnecessary expenditures.

c) Commercial banks are playing a vital role for National Development. Deposit mobilization is necessary to increase their activities. Commercial banks are granting loan not only in productive sectors but also in other sectors like food, grains, gold and silver etc.

d) It is much more important to analyze the collected deposit in one priority sectors of a country. In our developing country's we have to promote our business and other sectors by investing the accumulated capital towards productive sectors.

Deposit mobilization plays a vital role for the economic development of an underdeveloped and developing country rather than developed one. It is because a developed country does not feel the need of deposit mobilization for capital formation due to developed capital markets in every sector. But in an under developed country and developing country, deposit mobilization plays a great role in such countries. Low National income, low per capita income, lack of technical knowledge, vicious cycle of poverty, lack of irrigation and fertilizer, pressure of over population, geographical conditions etc. are the main problems of economic development of an under

developed country like Nepal. So far the developments of these sectors concerned, there is needs of more capital. Again, instead of the developments of a particular sector, the development of every sector should go side by side. So, the development process of these sectors on one side and to accumulate the scattered and unproductive sectors deposit on the other is the felt need of an under developed country. We can take this in our country's present context (NRB, Banker's Prakashan, 1984).

2.3.3 Advantages of Deposit Mobilization

The advantages of deposit mobilization are as follows:

Circulation of Idle Money

Deposit mobilization helps to circulate idle money. The meaning of deposit mobilization is to convert idle saving into active saving. Deposit mobilization helps the depositor's habit of saving one side and it also helps to circulate the idle saving in productive sector on the other. This helps to create incentives to the depositors.

To Support Fiscal and Monetary Policy

Fiscal policy of the government and monetary policy of the central bank for economic development of a country can be supported by deposit mobilization. Deposit mobilization helps to canalize the idle money in productive sector. Again, it helps in money supply, which saves the country from deflation and helps central banks objective of monetary policy.

Capital Formation

Capital plays a vital role for the development of industries. But in an underdeveloped country, there is always lack of capital to support such industries. Capital formation and industrialization is possible through deposit mobilization.

Development of Banking Habit

One important side of economic development of a country is to increase banking habit in the people. Deposit mobilization helps in these aspects. If there is proper deposit mobilization, people believe on the bank and banking habit develops on the people.

To Support Government Development Projects

Every underdeveloped country's government needs a huge amount of money for development projects. The deposit collected by the commercial banks can fulfill to some extent the need of money to the government.

To Promote Cottage Industries

Deposit Mobilization is needed to facilitate cottage industries located in rural and urban areas. If the bank utilizes the collected deposit in the same rural or urban sector for the development of cottage industries, it is helpful not only to promote cottage industries in the area, but also support in the development of the locality as a whole increasing employment and income of the local people.

To Check up Miss-utilization of Money

Mostly our customs and habits are supported by social and religious beliefs. There is also tendency of copying others and to show their superiority buying unnecessary and luxury items in our society. In such society, deposit mobilization proves a tool check up miss utilization of money.

Others

Deposit mobilization supports small savers by earning interest, helps to the development of rural economy, protests villagers from being exploitation of indigenous bankers, increases investment incentives, provides facilities to the small farmers to purchase tools and fertilizers etc. So commercial banks play an important role for the economic development not only in a development country but also in a developing country.

2.3.4 Factors Affecting Deposit Mobilization

There are various factors like money supply, inflation, other financial instruments and interest rate and branch expansion which affect deposit collection. These factors should be considered while making the policies regarding deposit mobilization, among all these factors, only interest rate and branch expansion has taken for the study.

a) Interest Rate

For the commercial banks, interest rate refers the amount paid on deposit. The main objective of the interest rate on deposit is to attract the scattered savings. Therefore, the proper interest rate plays vital role for collecting deposits. According to the neo classical monetary theory interest rate is a factor, which brings demand for investment and willingness to save into equilibrium with each other. Investment represents the demand for resources and saving represents the supply. While interest is the price of resources, at which two are equated. Interest is an important factor to mobilize savings. In this sense, interest is regarded as the reward for saving. Regarding the definition of interest rate, it is interesting to not some conflicting agreements of two groups. The classical idea was that interest rate was the reward for not spending i.e. it is the inducement to refrain for not spending. In opponent contrast, the Keynesian doctrine is that interest is the reward for not boarding i.e. it is the inducement to part with liquidity.

b) Branch Expansion

To build up a financial infrastructure geographically and functionally diverse to help in the resource mobilization to meet the expanding and emerging needs of developing economy. It has been also felt that timely and adequate credit support should be made available for the sector, which hither to be neglected, so that the system reached out to the small town and the rural and semi urban area. For this purpose, the extension of geographical spread of banking was given prime importance. It acted as an instrument of deposit mobilization on was given prime importance. It acted as an instrument of deposit mobilization on the one hand and provision of credit to the rural hinterland of the economy on the other. The larger number of people of that country saves more money.

2.4. Advancing loans

The major function of commercial bank is to invest and lend the collected funds by means of different accounts into productive sectors. Enough consideration should be given in choosing the project that ensures the receiving the interest regularly and recoverable of loans after the matured period. Mainly loans are granted in four forms overdraft, cash credit, and direct loan and discounting of bills of exchange.

Overdraft

This is a special facility provided by commercial bank, for only the trustee client to overdraw his account against some collateral security. The customer is charged the interest only on this amount by which his account is overdrawn. Generally, bank charges high rate of interest of providing such facility.

Cash credit

The bank grants loan to the client against the security of the commercial goods or personal security, which is called cash credit. The bank will not make direct payment in cash but the amount of the loan is credited to the current account of the borrowers. The borrower can withdraw amount by issuing cheque as per his/her requirement but he is responsible to pay interest on the whole amount of agreement.

Direct loans

The commercial bank may disburse loan to its clients against the security of movable and immovable assets. Under this the borrower are required to pay interest on the entire amount of loan sanctioned from the data of taking loan to the data of repayment. The borrower should pay the amount of loan in a lump sum of the due date.

Discounting bill of exchange

Due to expansion of business, now day major parts of transaction are carried on credit by means of issuing bills of exchange. If a creditor holding a bill of exchange needs money immediately, the bank may provide him/her money by discounting bill of exchange. The balance amount of bill after deducting banking charge is deposited in the current account of bill holder. Generally, the mature date of bill of exchange is 90 days.

Short term loan

Short terms loans are provided for the less then one year. These loans are provided for the less than one year .These loans is provided to finance the purchase of inventory i.e. raw material or finished goods to sell. Short terms loans are divided into different type which are as follow.

- Working capital loan
- Trust receipt loan
- Pledge loan

- Demand loan
- Loan against fixed deposit receipt
- Loan against government bond

2.4.1 Factors affecting the volume of Lending

The volume of credit within a country depends upon different factors. For this study only the effect of interest rate is taken into consideration and other factors are not considered. Some of the factors affecting the volume of credit are as follows:

Credit (Lending) Rate

If the bank credit rate is very high then, the volume of credit expansion is less and vice versa. It means that volume of credit and interest rate of credit has inverse relation. People invest very little in productive sectors when the interest rate is high in the market economy.

Rate of Return

If the rate of return is high people inclined to invest more. People earn more profit and they become able to afford higher rate of interest along with timely repayment of loan.

Investment Opportunity

If the investment opportunity within the country is high, the volume of credit becomes high. The basic thing for investment stimulation is easy and cheap credit etc.

Pace of Financial Development

If there are enough banking facilities to provide loans in easy terms, the volume of credit may be high. It is due to the lack of cheap money lenders that rural people are deprived of loan. If the banking facilities within the nations are expanded, the volume of credit rises.

Basic Infrastructure

Like transportation, marketability, availability of raw materials also pays an important role in raising the volume of credit in the country.

Political Condition

Political condition, especially political instability, is also one of the major causes of low volume of credit. In such a case none would like to risk his capital in new ventures. The present condition of the country is the glaring example of this.

In addition to aforementioned point, other factors like trade condition, currency conditioned are also the factors affecting the volume of credit.

2.5 Interest Rate Spread

The interest rate spread measures the effectiveness of the bank in the intermediation function, where the bank borrows the fund at one lower level of interest rate and lend at another higher level of interest rate. The spread also use to identify the intensity of competition among banks in the market. Higher positive interest spread shows the successfulness of the bank in collecting the funds at cheaper rate and granting them at higher rate. The higher interest rate spread is not possible for most banks in the time of strong competition. In this case, bank management seeks to look for other new revenue generating services to its clients to make up the decreased spread. The interest rate spread is the difference in the interest rate between the lending rate and the deposit rate.

The interest rate can be calculated as follow:

Interest rate spread = Interest rate on lending – Interest Rate on deposit

2.5.1 Major Causes of High Interest Spread

In past, to reduce the high interest rate spread Nepal Rastra Bank has taken measures such as cut in Credit Reserve Ratio (CRR), freedom to determine interest rate, moral suasion and mandatory directive etc. Still several factors contributed to make higher spread rate in banking system of Nepal. They're mainly related to high cost of funds or high margin resulting from requirements of maintaining high CRR, priority sector lending requirements, structural and operational characteristics of banking system.

3 major causes of Surya Chandra Shrestha's (2002) article are as follows

- Requirement of marinating Credit Reserve ratio (CRR)
- Priority Sector Lending Programs
- Structural and operational characteristics of banking system.

2.6 Review of Some Books & Article

According to Sharma and Ghosal (1965), in their book “Economic Growth and Commercial Banking in the Development of Economy” states that insurance of bank deposits, creation of proper atmosphere can increase deposits and the development of capital markets with the help of banks will prove effective in mobilizing the available floating resources in the country.

Keynes (1936), in his book, “The General Theory of Employment, Interest and Money”, has mentioned the following the viewpoints about the rate of interest. According to him, community’s liquidity preferences and quantity of money determine the level and 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 preference 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, saving, liquidity preferences and supply of money. This view is a combination of previous theories. It has expressed both monetary and non-monetary factors. In this opinion, the marginal efficiency of capital to the rate of interest and investment is equal to the desired volume of saving. Thus the Total Investment = Total Saving or I = S.

Where,

I = Investment and S = Savings.

Shresth (1990 p, 89) mentioned that "the main point to be considered in interest rates reform is that such changes in interest rates provides a fair distribution of fixed deposit according to their length and amount. Thus kind of information, if extended to other items, would be a good bare for analysis of bank's liquidity .Although the belief that high interest rates tends to avoid capital flights to India, yet the actual fact is that increase in interest rate of government securities has compelled banks to raise interest rate on deposit and thereby making lending to productive securities enjoying tax advantage so that there will be better effect on deposit and lending rates."

In pant's (2054 p,62) articles called management of internal loan and economic stability viewed that management of internal loan affected my interest rate directly. Interest rate structure helps Government to take decision regarding loans .It also decides about the level of investment, which can invest by the investors. In the supply of money, which can be invested and its demand from private sector to government sector. But in developing countries interest rate must be higher because of government high demand for capital.

Bodhi B. Bajracharya in his article "Monetary policy and deposit mobilization in Nepal" has mentioned the mobilization of domestic savings is one of the prime objectives of the monetary policy in Nepal. For this purpose CBs stood as the active and vital financial intermediary for generating resource in form of deposit of the private sector. So far providing credit to the investors is a different aspect of the money (Bajracharya, 1999: 93-97).

Shrestha (2004), in his article, " A study on deposits and credits of commercial banks in Nepal" concluded that the credit deposits ratio would be 51.3%, other things remaining same in the year 2004 A.D., which was the lowest under the period of review. So he has strongly recommended that the commercial banks should try to give more credit entering new field as far as possible otherwise they might not be able to absorb even its total expenses. (Source: R. L. Shrestha, (2004) A studies on deposits and credit of commercial banks in Nepal, NRB Samachar}.

Pradhan (2053) in his article entitled "Deposit Mobilization, its problem and prospects." He has presented a short glimpse on investment in different sectors, its problem and prospects through his article. On his article he said that "Deposit is the life blood of any financial institution be it Commercial Bank, Finance Companies, Cooperative or Non government organization". He has added, in consider ten Commercial Banks, nearly three dozen of Financial Companies, the latest figure does produce a strong feeling that a serious review must be of problem and prospects of deposit sector. Besides few Joint Venture Banks, other Organizations rely heavily on the business deposit receiving and credit disbursement.

In the light of this Mr. Pradhan has pointed out the following problem of deposits in Nepalese prospects:

- Due to lack of education, most of Nepalese people don't go for saving in institutional manner. However they are very much used of saving, be it in the form of cash, ornaments or kind. Their reluctance to deal with institutions system are governed by their lower level of understanding about financial organization, process required, office hour withdrawals system availability of depositing facilities and so on.
- Due to lesser office hour of banking system people prefers for holding the cash in the personal possession.

- Unavailability of the institutional services in the rural areas.
- No more mobilization and improvement of the employment of deposits in the loan sectors.

Mr. Pradhan hasn't only pointed out the problem but also suggested for the prosperity of Deposit Mobilization. They are given as:

- By cultivating the habit of using formal sector for transaction must be a priority and continuous educational program.
- By adding service hour system will definitely be an appropriate step.
- Nepal Rastra Bank could also organize training program to develop skilled manpower.
- By spreading co-operative to the rural areas mini banking services are to be launched.
- The scheme of mobilizing the deposit in the firm of free personal accident insurance, deposit insurance may be fruitful. Not only waiting for potential customer it is better to reach to the potential depositors.

At last Mr. Prahan mentioned Deposit Mobilization carried out effectively is in the interest of depositors, society, financial sectors and the nation. Lower level of deposit rising allows squeezed level of loan deliver leaving more room to informal sectors. That is why higher priority to Deposit Mobilization has all the relevance.

Sharma (2000), in his article entitled, "Banking the future on competition" found that all the commercial banks are establishing and operating in urban area, his achievements are:

- Commercial banks are charging the higher rate of interest on lending.

- Commercial banks are establishing and providing their services in urban areas only. They have not interested to establish in rural areas. Only Rastriya Banijya Bank and Nepal Bank Ltd. have branches in rural areas.
- They do not properly analyse the credit system. The researcher further states that private commercial banks have mushroomed only in urban areas where large volume of banking transaction and activities are possible.

2.7 Review of Thesis

Before this study, various studies regarding the various aspects of commercial banks such as deposit mobilizing policy, financial performance, and investment policy, lending policy, interest rate structure, resource mobilization and capital structure have conducted several thesis works. Some of them, which are relevant for this study, are presented below:

Dangol (2003), a study made on the topics "Impact of Interest Rate on Financial Performance of Commercial Bank" concludes:

- Most of the commercial banks contradict the general financial theories.
- The relation between amount of deposit and interest rate on deposit, in general concept, must be positive. But deposits are increasing despite the clearest 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 correlation between total amount of loan and the lending rate is negative and significant. However the change in the amount of loan flow is not proportionate with the change in the lending rate.
- Correlation between interest rate and inflation is not significant.

Tandukar (2003), in her thesis titled "The Role of NRB in Deposit Mobilization of Commercial Bank" has tried to find out the relation between Nepal Rastra Bank and commercial banks of Nepal. The directives issued by NRB have both positive and negative impact on these commercial banks. A sound investment policy containing a portfolio will guarantee long term survival of a commercial bank. More she focuses on importance of bank in country's economy. It is source of capital formation she has

drawn the conclusion that all new directives of NRB on commercial banks are effective and it is good for both nation and the future of the banks but the loan classification and provisioning seems to be little bit uncomfortable to the commercial banks. She had recommended the banks to minimise the bad loans ratio, creating the conductive environment for the revival of sick investment, formulate future strategies to solve problems.

Mr. Majendra Nath Karmacharya in his thesis paper "A study on deposit mobilization by the NBL" has concluded that commercial banks play a crucial role in accelerating the growth in the country. The bank mobilizes the savings of the people and diverts them into productive channels. The expansion of branches as more as possible to encourage the savings i.e. to increase the savings habits of people and thereby to mobilize the available financial resources efficiently and effectively in a productive way and concluded that the branch expansion helps to collect more deposits and utilize the available resources. The conclusion is diverted from the analysis of seven years data from 1970 to 1977 A.D. using Karls Pearson's formula, percentage and ratio to meet the objective how far the bank is able to utilize the collected deposits. (Karmacharya: 1978).

Shrestha (2006), in the research called "A Study on deposit mobilisation and utilization of commercial banks with special reference to Nepal Bank Limited" has specified, Nepal Bank Limited has been much efficient in the collection of resources from the people in both urban and rural area of the country. But in the progress of its utilization, they are still behind. There is a decrease in the ratio loans and investment deposits and a wide gap has existed between them.

The interest rate has played an important role in mobilizing and utilizing the resources of the bank. So, the structure of interest rate should be changed according to the need of the nation. Even though the function of commercial banks is to off short –term loans for working capital but they collect fixed deposits. Thus they have capacity to offer medium and long-term credit and are found keeping deposits idle. Thus it can be said that the Nepal bank Limited is not playing active role to utilize the collected savings according to the borrowers and national requirement of long term and medium term investments.

Mr. Damber Bahadur Paudyal on research "Funds utilization of commercial banks in Nepal" he has tried to examine the funds mobilization of the commercial banks and he had concluded that the efficient mobilization of fund is more important than collection of one deposit. Also he said lower is the investment lower will be the capital formation. If there is high ratio of investment of the available fund there will create huge capital formation for which is important to the economic growth of the nation and development of the nation there to. At last, he recommended that the commercial banks should concern their behaviors in the efficient mobilization of the resources to get the profit, (Paudyal: 2004).

Panthee (April 2010) In his theses titled "Interest Rate and its Impact on deposit Mobilization of commercial Bank'' has conclude that fluctuations in the interest rate of the commercial banks slightly affect the deposit mobilization. When there is a slight increase or decrease in interest rates of deposits, deposits are affected slightly. This study concludes that most of sample banks have negative correlation between interest rate and deposit. But on the contrary to this deposit amount is increasing every year. The study also concludes that commercial banks should pay very high attention on how they fix the interest rates on the deposits or the money that flows into the banks as funds. Based on analysis of sample banks it can be concluded that interest rate on deposit is not attractive for the depositors. The sample banks are SCBL, SCBL, HBL, RBB, NABIL, BOK, KBL, NCC, EBL, NIC and NIBL.

Karki (2007), on his thesis entitled "Deposit mobilization of commercial banks in Nepal" with the main objectives of:

- To examine how far the rate of interest influence the credit and deposit of RBB Janakpur branch.
- To examine how far the bank branch is successful to accumulate the deposits with special reference to RBA Janakpur Branch.
- To examine how far the deposit of RBB Janakpur Branch is efficiently utilised.

This study is based on secondary data. In his thesis Karl Pearson's formula of coefficient of correlation has been used to compare various variables. In this thesis the

writer found that the deposit collection of Janakpur Branch is not satisfactory. He also found that the activities of RBB Janakpur Branch for mobilizing deposits seem to be idle. The bank has not tried to find out the new sectors of investment. The central office has not given authority to the branch to the branch manager to advance or to invest govt-securities. The writer further fond that the bank provides short term credit and the lending process is also lengthy.

The researcher suggested that the bank should reach different sectors for loan and advances and also suggested that RBB Janakpur Branch should extend loan term as well as medium term credit in addition to short term credit.

2.8 Research Gap

Previous researchers covered all the commercial banks and some were either on case study between two commercial banks or some were on the particular bank branch. But this study focused on some particular sample banks. This study covers the recent and an updated data of all the sample banks. Moreover this study has not been done by previous researcher as separately. Thus, to fill the gap, this study had been conducted.

CHAPTER - III
RESEARCH METHODOLOGY

Research methodology is a systematic way to solve the research problem. In other words, research methodology describes the methods and process applied in the entire aspect of the study. Research methodology refers to the various sequential steps (along with a rational of each steps) to be adopted by researcher in studying a problem with certain objectives in view (Kothari, 1994: 9). Thus the overall approach to the research is presented in this chapter. This chapter consists of research design, sample size and selection process, data collection procedure and data processing techniques and tools. So, suitable research methodology according to the demand of the study is presented below.

3.1 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research question and control variance. To achieve the objectives of the study, descriptive as well as analytical research design have been used. This study is based on secondary data. Generally, to show the relationship of interest rate with deposit amount past historical data are used. The relevant and needed data has been collected from various publications of different commercial banks and Nepal Rastra bank.

3.2 Population and Samples

The term population or universe for research means the universal of research study in which the research is based (Wolf & Pant, 2000:75). Since the research topic is about interest rate, all the lending and depository institution of Nepal are the member of population study. The population for the study comprises 32 commercial banks, 88 Development banks, 69 finance companies, 24 Micro-credit Devlopment banks, 16 NRB licensed cooperatives and 36 NRB licensed NGO's one employee provident fund. Among the total population only some selected institutions are taken as sample on random basis similarly due to unavailability of data from all the sectors, only commercial banks are chosen for this study. So precisely saying, all 32 commercial banks are the population of this study and among them, only 4 commercial banks are

chosen as samples from total population. For selecting the samples, simple random sampling method is used here among different methods. Sample banks are

- Rastriya Banijya Bank.
- Nabil Bank Limited
- Bank of Kathmandu Limited
- Standard Chartered Bank Nepal Limited

3.3 Data Collection Procedure

Basically secondary data are used for the requirement of this study. These data are collected from the published source like annual reports, internet and other sources. Some of the data published on annual report like, interest rate, amount as well as their organization profiles are collected from their web sites. Some secondary data are collected from Nepal Rasta Bank.

3.4 Data Processing and Presentation

The information or data obtained from the different sources are in raw form. From that information, direct presentation is not possible. So it is necessary to process data and converts it into required form. After then only the data are presented for this study. This process is called data processing. For this study only required data are taken from secondary source (bank's publication) and presented in this study. For presentation, different tables are used. Similarly, in some case graphical presentation is also made. So far as the computation is concerned, it has been done with the help of scientific calculator and computer software program.

3.5 Tools for Data Analysis

The analysis of data is done according to pattern of data available and felt necessity. This study requires more statistical tools rather than financial tools for analysis and presentation. So emphasis is given on statistical tools to meet the objectives of the study.

3.5.1 Statistical Tools

Arithmetic Mean$(\overline{X})$

Arithmetic mean is a given set of observation is their sum divided by the number of observation. In such case all items are equally important. It depicts the characteristic of whole group. It is an envoy of the entire mass of homogeneous data. Generally the average value lies somewhere in between the extremes i.e. the largest and the smallest items. Generally mean indicates the measure of the middle of the set and. In other words, it is just the sum of all the observations divided by the number of observations. During analysis, mean have been used as synonyms to equal weighted mean. It is calculated as follows:

$$\overline{(X)} = \frac{\sum X}{N}$$

Where,

$\sum$X = Sum of the sizes of items

N = Number of items

Standard deviation (σ)

Karl Pearson first introduced the concept of standard deviation in 1983.Standrd deviation is the positive square root of the arithmetic average of the squares of all deviation measured from the arithmetic average of the series. The standard deviation measures the absolute dispersion of a distribution. Standard deviation is an important and widely used measure of dispersion. The greater the amount of dispersion is the greater the standard deviation. The greater the standard deviation greater will be the magnitude of the value from their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series. Standard deviation is denoted by a Greek Letter 'σ' (sigma) and is calculated as follows.

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

Where,

$\sum$X = Sum of the sizes of items

N = Number of items

Correlation Coefficient (r)

The correlation analysis is the technique used to measure the closeness of the relationship between the variables. It helps in determining the degree of relationship between two or more variables. It describes not only the magnitude of correlation but also its direction. The coefficient of correlation is a number which indicates to what extent two variables are related with each other and to what extent variables is one leads to the variation in the other.

Correlation may be positive or negative which lies between ±1. Simple correlation between interest rate on deposit and deposit amount is computed in this thesis. The correlation between interest rate on deposit and deposit amount is positive. For our study following reference is used.

Correlation may be positive or negative and ranges from +1 to – 1. When r = +1 there is perfect positive correlation, when r = -1 there is perfect negative correlation, when r = 0 there is no correlation and when r < 0.5 then there is low degree of correlation.

When 'r' lies between 0.7 to 0.999 (or -0.7 to -0.999) there is high degree of positive or negative correlation.

When 'r' lies between 0.5 to 0.6999 there is a moderate degree of correlation.

The correlation coefficient can be calculated as:

$$r_{12} = \frac{n\sum X1X2 - \sum X1 \sum X2}{\sqrt{n\sum X1^2 - (\sum X1)^2}\sqrt{n\sum X2^2 - (\sum X2)^2}}$$

Where,

n = no. of observation

X1 = Dependent Variable

X2 = Independent Variable

Coefficient of Determination (r2)

The coefficient of determination is the primary way to measure the extent or strength of the association that exists between two variables X1 and X2. It refers to measure at the total variance in a dependant variable that is explained by its linear relationship to and independent variance. The coefficient of determination is denoted by r2 and the value lies between zero and infinity. The close to infinity means greater the explanatory power. A value or one can occur only is the in explained diagram falls exactly on the regression line. The r2 is always a positive number. It can't tell

whatever the square of the simple correlation coefficient is called coefficient of determination and it is very useful in interpreting the value of simple correlation coefficient. The main significance of the coefficient of determination is to represent the portion of total variations due to independent variable.

Coefficient of determination (r212) = (r12)2.

CHAPTER- IV

Data Analysis and Presentation

4.1 Introduction

This is an important section where calculated data are presented and analyzed. In this section, all the collected data are presented in the filtered form and are analyzed thoroughly. This is the one of the major chapter of this study because 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. This chapter consists of various calculations made for the analysis of interest rate and its effects on deposit of sample bank. This chapter consists of detail analysis and interpretation of data relating to interest rate on deposit, deposit collection amount of each selected organization from Nepalese financial system. This chapter is categorized in three parts presentation, analysis and interpretation. The analysis is based on secondary data. In presentation section data are presented in terms of table, graph chart of figures, according to need. The presented data are then analyzed using different statistical tools which are mentioned in chapter three. At last the results of analysis are interpreted. For our simplicity, in this thesis, presentation, analysis and interpretation of data are made according to the nature. After then, the relationship between interest rate and deposit amount is made.

In the previous chapters, we discussed about the impact of interest rates on funds mobilization of commercial banks, historical background of interest rate and NRB's policies regarding it. Likewise in second chapter we discussed about the previous studies through literature review and in the subsequent chapter, we presented the methods that have been used to analyses the information. This chapter is the heart of the study. This chapter consists of relevant data and information necessary for the study. In this chapter the analysis part is presented in detail. This chapter is mainly concerned with the presentation of collected data in suitable tables and diagrams as well as the analysis and presentation of these collected data in a suitable manner using various statistical tools.

4.2 Overview of Nepalese Financial Sector

The Nepalese financial sector is composed of Nepal Rastra Bank, commercial banks, development banks, finance companies, micro-credit development banks, cooperative financial institutions, non-governmental organizations performing limited banking activities and other financial institutions such as insurance companies, employee's provident fund, citizen investment trust, postal saving offices and Nepal stock exchange. During the last two and half decades the number of financial institutions has grown significantly. At the beginning of the 1985s there were only three commercial banks and two development banks in the country. After the induction of the economic liberation policy, particularly the financial sector liberalization, it provided the impetus in the establishment of new bank and non-bank financial institutions. Consequently, by the end of mid-July 2012 altogether 265 banks and non bank financial institutions licensed by NRB are in operation. Out of them, 32 are "A" class commercial banks, 88 "B" class development banks, 69 "C" class finance companies and 24 "D" class micro-credit development banks 16 saving and credit cooperatives and 36 NGOs.

Table 4.1

Growth of Financial Institutions in Nepal from 1985 to 2012

Type of Financial Institutions/Year	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2012**
Commercial Banks	3	5	10	13	17	27	32
Development Banks	2	2	3	7	26	79	88
Finance Companies	-	-	21	45	60	79	69
Micro-credit Development Banks	-	-	4	7	11	18	24
Saving and Credit Cooperatives	-	-	6	19	20	15	16
NGOs (limited banking activities)	-	-	-	7	47	45	36
Total	**5**	**7**	**44**	**98**	**181**	**263**	**265**

Source: Banking and Financial Statistics, NRB 58

Analysis of Lending, Deposit and Interest Rate

In this section, detail study is made about deposit amount, lending amount and interest rate of various banks. For this study only saving and fixed deposits are considered because current deposit doesn't earn any interest. Lending is second arc of the analysis where mainly the relationship between lending interest rate and its effect upon lending amount is measured. Generally, when there is higher interest rate (esp. lending or credit rate) in the economy, people normally borrow lesser amount than the period when lending interest rate is low. According to theory, when there is low lending rate, then there should be higher amount of borrowing. Higher amount of borrowing indicates higher investment in the country or higher transaction in trade. This is necessary for the growth of the economy. So this study tries to explore the relationship between lending rate amounts in Nepalese context.

4.3 Rastriya Banijya Bank

4.3.1 Interest Rate and Its Effect on Deposit of RBB

Prior to entering into the main topics, it is preferable to take a glance on the interest rate structure on different types of deposits. This is essential because the interest rates are generally different in magnitude for every sample banks. These differences are due to the numerous factors like maturity period, policy of bank, goodwill of organization and so on. In real world government owned bank and banks with high reputation and goodwill have lower deposit rates. Similarly, finance companies, co-operative & development bank quotes higher interest rate on deposits than commercial banks do.

Table 4.2

Interest Rate Structure on Deposit of RBB as on Mid-July

Deposit	**2008**	**2009**	**2010**	**2011**	**2012**
Savings	2%	2%	2%	2%	2%
Fixed					
7 Days	-	-	-	-	-
14 Days	-	-	-	-	-
1 Month	-	-	-	-	-
3 Months	2.25	2.25	5.5	5.5	5.5
6 Months	2.50	2.50	6	6	6
1 Year	3.5	5	7	10.5	10.5
Above 2 Year	5	6	8	11	11
Whole Mean	**3.05**	**3.55**	**5.7**	**7**	**7**
Fixed Deposit Mean	**3.31**	**3.94**	**6.63**	**8.25**	**8.25**
Std. Deviation	**2.28**				

Source: Banking and Financial Statistics NRB

Table 4.2 shows the deposit interest rate of RBB in 5 different FY. For this study 2008 is taken as initial year & 2012 as final years. The table portraits the interest rate that were prevailed in the Nepalese financial markets during last 5 years. The data shows the increasing tendency of interest rate on fixed deposit. The interest on saving deposit in the beginning year was 2% and constant to 2 % in 2012. In same manner, the bank used to quote the interest rate of fixed deposit in different short term period like 7 days, 14 days, 1 month, 2 months, 3 months and so on. For the graph purpose, in this study the average of 7 days to 3 months is taken to make the figure clearer. For other periods also the fixed deposit rate was in increasing trend. The increasing tendency is high for longer period interest rate. If the mean is taken of all (both fixed and saving) then average interest rate on deposit was 3.05% for 2008, 3.55% for 2009, 5.7% for 2010, 7% for 2011 and 7% for 2012. Similarly, if average of fixed deposits of different period is taken, then the result is almost similar with “whole average”. It means the average interest rate for fixed deposit only was 3.31%, 3.94%, 6.63%, 8.25%, 8.25% respectively for the year2008, 2009, 2010, 2011, 2012 .The average

figures also show the increasing tendency in interest rate in the interest rate. All the above described matters can be shown on Figure 4.2 as follows.

Correlation Coefficient and Coefficient of Determination of RBB

Table 4.3

Relationship between Interest Rate and Deposit Amount (in millions) of RBB

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)
2008	3.05	40213	3.31	4479.8
2009	3.55	46102.8	3.94	3207.8
2010	5.7	42826.9	6.63	6539.2
2011	7	38590	8.25	14266.9
2012	7	43823.4	8.25	18010
Correlation	**-0.245**		**0.896**	
Coefficient of Determination	**0.06**		**0.802**	

Source: Banking and Financial Statistics NRB

The Table 4.3 shows the total amount of fixed deposit and saving deposits and the interest rates offered on such deposits by RBB on five fiscal years starting from FY 2008 to FY 2012. The table portrays that the interest rate has been increased per year and constant on year 2011 & 2012but deposit amount has been fluctuated in different year some time it increase and some time it decreased. This show there is not a positive relation among interest rate and deposit amount during the study period. It can be quantified by calculating correlation coefficient between them. This relationship can also be shown in Figure 4.1 and 4.2.

Figure 4.1

Deposit Amount of RBB During Different Years (in millions)

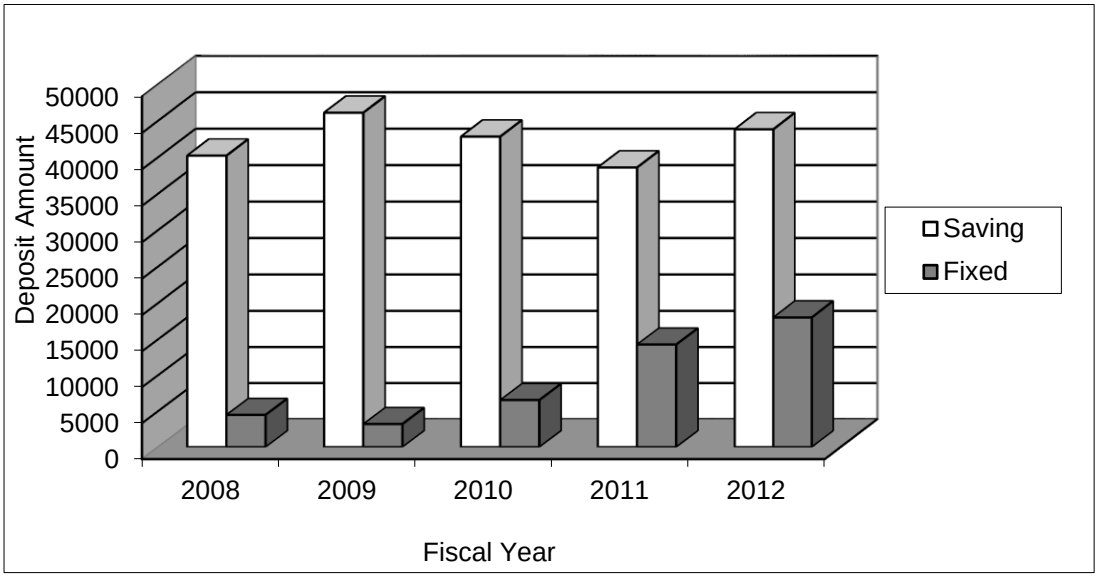
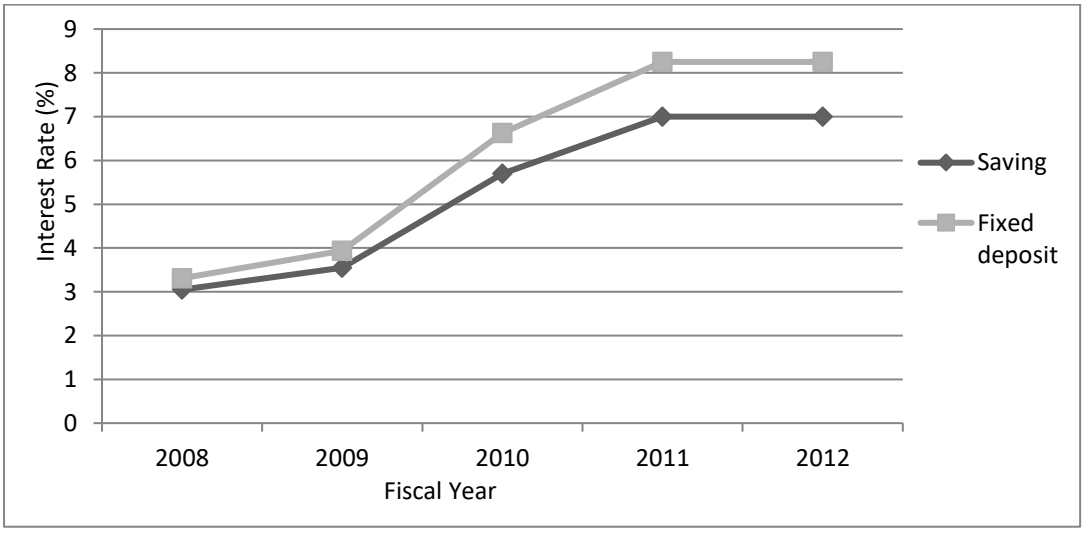


Figure 4.2

Interest Rates of RBB on Saving and Fixed Deposit



According to Table 4.2, the interest rate on saving deposit has been constant to 2% during 5 years. In same period the deposit amount was Rs. 40213 millions but this amount increases to Rs.43823.4 millions. It means interest rates increase by 129.5%, where as deposit amount rises by 8.97% within the period of five years. It indicates the deposit collection is not perfectly correlated with interest rate.

Similarly, for fixed deposit the Table 4.3 shows that total amount of fixed deposit and interest rate on fixed deposit offered by RBB on five consequent FY started from 2008 to FY 2012. The table reveals that average fixed interest rate has been increased during the 5 years. At the FY 2008 the average interest rate was 3.31% on fixed deposit but later on every year this interest rate started to increase per annum and at 2011 it remained at 8.25% per annum on average. On effect of this increase, the amount of fixed deposit increase, the amount of fixed deposit also started to increase in some respect. Increase in interest rate also increases the fixed deposit amount. In this regards, the substitution effect holds true in the case of fixed deposit.

To verify the above trend, it is necessary to calculate the correlation coefficient and. If correlation coefficient is calculated for saving deposit rate and deposit amount, then it is (r23) = -0.245. This low negative correlation coefficient indicates that they have inverse relationship among each other. Decrease in interest rate is followed by an increase in saving deposit amount and vice-versa. This shows that the substitution effect in case of RBB for saving account is not applicable. The coefficient of determination between these two variables is ($r^2$23) = 0.06, which means that total variation in dependent variable (saving deposit amount) has been explained by independent variable (interest rate) to the extent of 6% and remaining is the effect of other factors.

In the same manner, the correlation coefficient between interest rate and fixed deposit amount (r45) is 0.896. This means that these two variables are highly correlated when interest rate on fixed deposit decreases (increases) the deposit amount also decreases (increases). This is exactly the matter what the theory (substitution effects) says.

The coefficient of determination between these two variables is ($r^2$45) = 0.802, which means 80.2% of total variables in dependent variables (deposit unit) is explained by the independent variable (deposit rate) & remaining is due to the effect of other factors.

4.3.2 Interest Rate and Its Effect on Lending of RBB

The sector where RBB grant its credit during last five years and their corresponding interest rate, average interest rate and lending amount are presented in the Table 4.4 below.

Table 4.4

Lending Rate of RBB on Different Sectors during five Years

Sector	**2008**	**2009**	**2010**	**2011**	**2012**
Overdraft	11%	11%	12.25%	13%	12%
Export Credit	8	8	9	11	11
Import LC	8	-	9	11	12
HMG Bond	7	7	11	11.5	11
BG/CG	7	7	11	11.5	11
Other Guarantee	6	-	-	-	-
Industrial Loan	-	-	-	-	-
Commercial Loan	-	-	-	-	-
Priority Sector Loan	11.5	11.5	11.5	11.5	10
Working Capital	-	-	13.5	13.5	12.5
Hire Purchase	9	10	13	13.5	12.5
Others	11.5	11	13	13.5	13
Average Int. Rate (1)	**8.78**	**9.36**	**11.47**	**12.22**	**10.53**
Lending Amount (2)	**27353.6**	**31464.1**	**35616.6**	**36792.2**	**40346.2**
Correlation (r12)	**0.729**				
Coefficient of determination ($r^2$12)	**0.576**				
Std. Deviation	**1.277%**				

Source: Banking and Financial Statistics NRB

[Note: For all case, the higher ceiling of interest rate is taken from the table, as per suggestion of NRB research department.]

Lending activity of commercial banks can be diversified into different sectors. But according to the publication of Nepal Rastra Bank- Banking & Financial statistics- the loan of commercial banks are classified in different sub-sectors like overdraft, export credit, Import LC, commercial loan and so on. Besides this there are other section (area) when bank provides loan and these areas are placed in the topic of “others”. For this study, lending area are categorized as classified by NRB.

According to Table 4.4 it shows that interest rate on lending on different area are in declining stage from 2011. The table shows that the maximum interest rate is 13.50% in FY 2010, 2011 and in 2012 and minimum rate is 6% on FY 2008. This shows that the interest rate was decline and increase during the five years periods. Interest rate on overdraft increase up to year 2011 and then it decrease to 12%. In same way interest rate on export credit increase during the three year period and constant in year 2011 and 2012. In aggregate all interest rate are increase in year 2009, 10, 11, and then it became constant or decrease. According to theory, in order to induce the investment in the country or expansion of trade, the productive sector loan should be available at cheaper rate. But the figure shows that these sectors loan were somewhat costlier than other non-productive loan. If the average of each fiscal year is taken, then it shows average lending interest rate was 8.78%(2008), 9.36%(2009), 11.47%(2010), 12.22%(2011), 10.53%(2012). The standard deviation for average interest rate was 1.277%, which shows the deviation from mean return. The average rate is also in increasing trend till year 2011 but decreases in the year 2012. The increasing tendency was not smooth. It means the rate increased each year with different rate. In preceding year the increasing rate was quite slow where as the declining tendency was fast in later year. This concludes that interest rate on lending is also in increasing tendency for past few years. With harmony to interest rate, the lending amount of RBB is also seen to be in increasing tendency but with some fluctuation. These can also be present in Figure 4.3 and 4.4

Figure 4.3

Lending Amount of RBB during different Years (in millions)

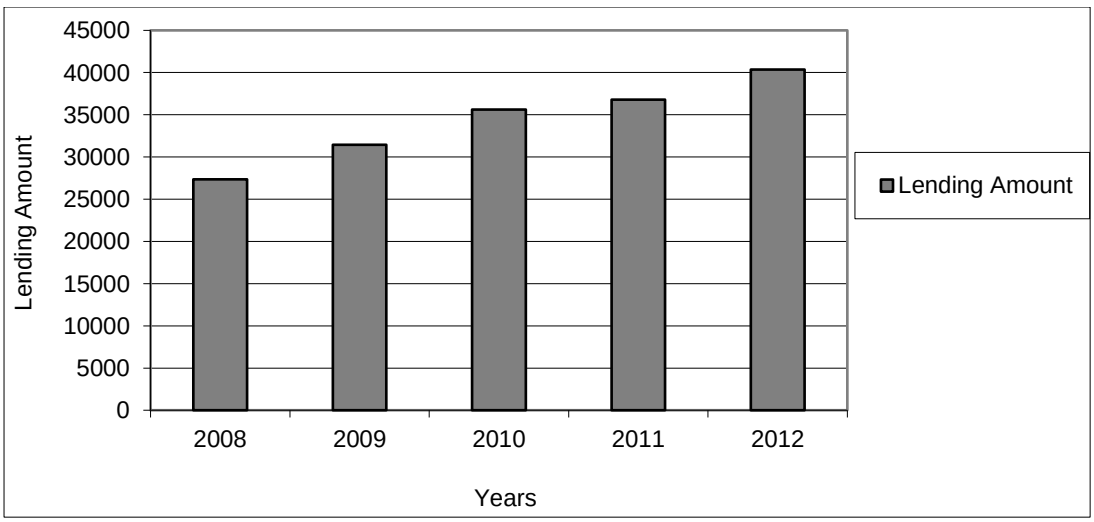
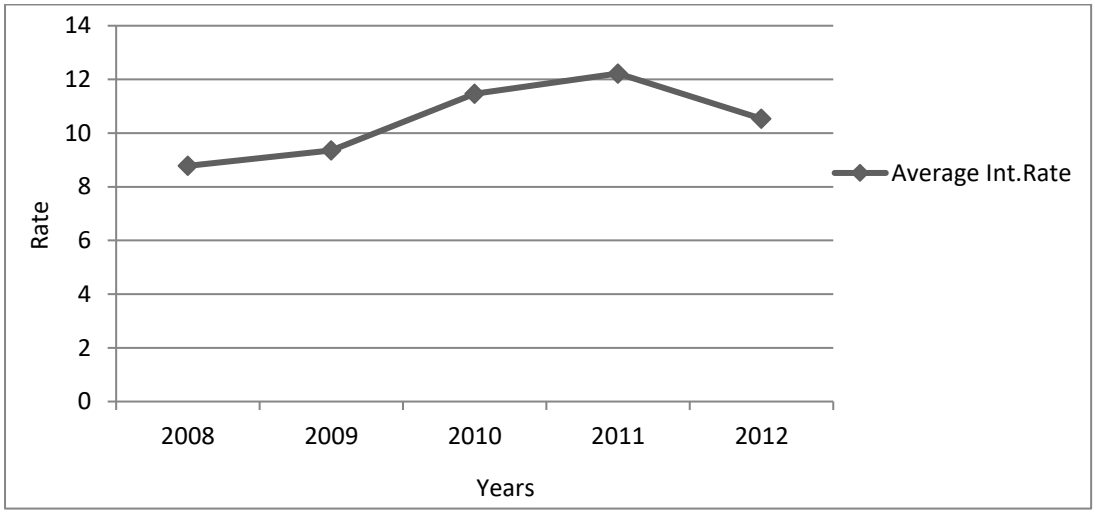


Figure 4.4

Average Lending Rate of RBB during different Years



Correlation Coefficient, Coefficient of Determination of RBB

From Table 4.4 the correlation coefficient (simple correlation) between lending rate and lending amount (r23) is 0.729. According to our classification, this correlation is "moderate degree" correlation. In this case it is clear that interest rate on lending & lending amount has positive relationship. It means they move in positive direction i.e. increase in lending rate result increase in total lending amount. This situation not matches with the actual theory. According to the theoretical concept of lending rate and lending amount, people prefer or use more money when the market interest rate is low in the market. So the case is true for RBB only in 2012. In fiscal year 2009, 2010, 2011 lending amount increase with increase in interest rate. The simple determination of correlation coefficient ($r^2$23) is 0.576. When total lending amount is taken as dependent variable and lending rate as independent variables, then 57.6% of total variation in dependent variable is explained by lending rate and remaining percentage is due to the effect of other variables in the economy. In conclusion, the inverse relationship between lending rate and lending amount is not exactly applicable for RBB.

4.4 Nabil Bank Limited

4.4.1 Interest Rate and Its Effect on Deposit of Nabil

The general structure of deposit interest rate of Nabil Bank Limited is shown below on Table 4.5. The Table shows the interest rate of Nabil during the last five Years.

The trend of interest rate shows that it is in decreasing trend. The interest rate on saving deposit shows that it was 2% during the period of 2008, 2009 and increases by 1% on average every year up to 2012. Similarly the interest rates on fixed deposit also fall during the five fiscal years. The interest rate increased up to 12% in year 2011 but it decreased by nearly 42% in year 2012. Here we see the fluctuation in interest rate some time it increase and some time it decreased there no uniformity in increase and decrease in interest rate.

Table 4.5

Interest Rate Structure on Deposit of Nabil on Mid-July

Deposit	**2008**	**2009**	**2010**	**2011**	**2012**
Savings	2%	2%	3%	3%	3%
Fixed					
7 Days	-	-	-	-	-
14 Days	3	-	-	-	-
1 Month	3.5	4	7	7	-
2 Month	-	-	-	-	-
3 Months	6.75	5	8	8	-
6 Months	6.75	6	9	9	-
1 Year	5	8	9.5	10.5	6
Above 2 Years	6.75	8.5	10	12	7
Whole Mean	**4.82**	**5.58**	**7.75**	**8.25**	**5.33**
Fixed Deposit Mean	**5.29**	**6.3**	**8.7**	**9.3**	**6.5**
Std. Deviation	**1.91%**				

Source: Banking and Financial Statistics, NRB

Correlation Coefficient and Coefficient of Determination of Nabil

Table 4.6

Relationship between Interest Rate and Deposit amount (in millions) of Nabil

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)
2008	4.82	12160	5.29	8464.1
2009	5.58	14620.4	6.30	8310.7
2010	7.75	13783.6	8.7	14711.1
2011	8.25	14288.6	9.3	16840.8
2012	5.33	17994.8	6.65	14044.9
Correlation	**-0.1122**		**0.805**	
Coefficient of Determination	**0.0126**		**0.648**	

Source: Banking and Financial Statistics NRB

In Table 4.6 saving amount and deposit rates are arranged in systematic order. The outlook of the table shows that the interest has been increasing since 2011 on both saving and fixed deposits. The amount of saving deposit has increasing trend. It is increasing every year only it decreases in year 2010. This indicates that the condition for Nabil is positive to the substitution theory. The case is same for fixed deposit too. But after 2011 this deposit amount has been in decreasing trend. It indicates that with decrease in interest rate, fixed deposit amount also decreases. But the declining speed of interest rate is quite higher than that of declining speed of deposit amount. It is clear if we show these relations on Figure 4.5 & 4.6.

Figure 4.5

Deposit Amount of Nabil During Different Years(in millions)

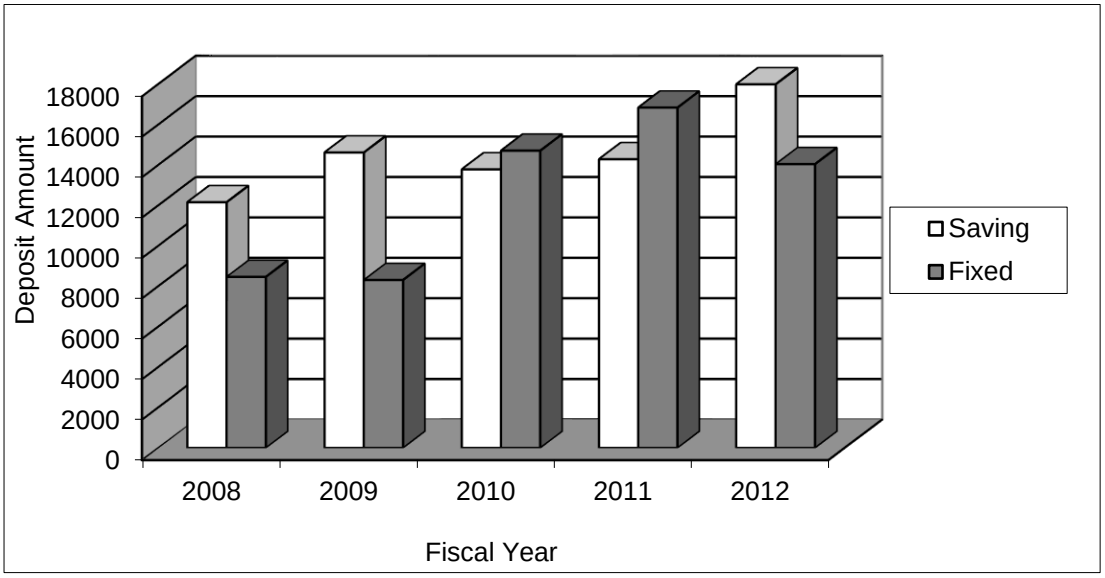
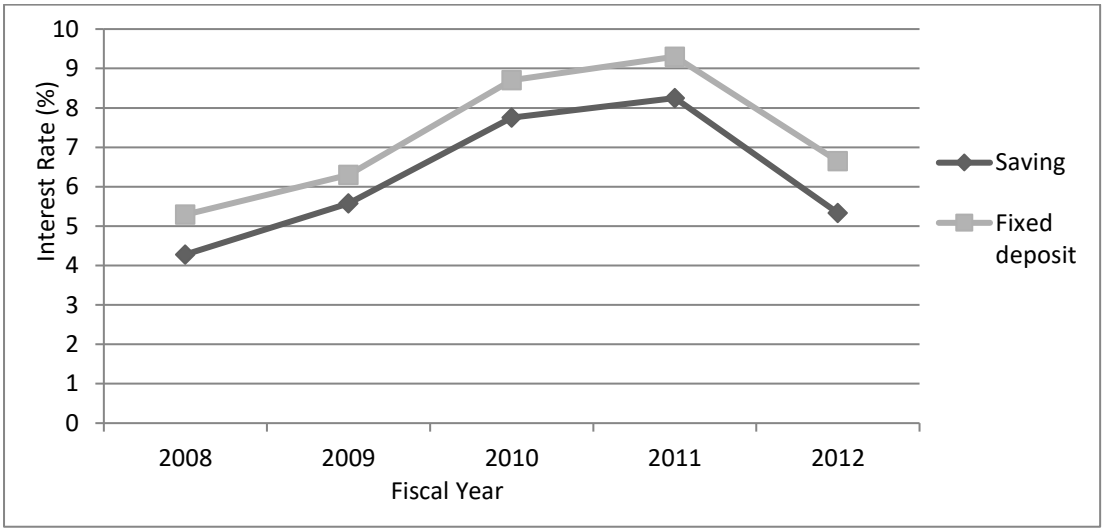


Figure 4.6

Interest Rates of Nabil on Saving and Fixed Deposit



The correlation coefficient for saving interest rate and deposit amount r23, is found to be negative of = -0.1122. This value indicates that they two have very low negative or inverse relationship. Increase in one variables lead to decrease in other variables. This is extremely against the theory suggested by the "substitution effect". Similarly, the coefficient of determination between two variables, $r^2$23, is 0.0216 which means that total variation in interest rate on deposit has been explained by supply of deposits to the extent of 2.156% percent and remaining is the effect of other factors. This means

that the interest rate on saving deposit and deposit amount of Nabil are significantly correlated and increase in the supply of fund (deposit) brings the decrease in interest rate on deposit. That is the substitution theory is not applicable for the saving deposit of Nabil.

Similarly, correlation coefficient for fixed deposit interest rate and fixed deposit amount, r45, is found to be 0.805. This shows that they have highly positive correlation. It means that the increase in deposit interest rate increase the saving of fixed deposit. This relation can be clearly explained by the coefficient of determination, which is 0.648, means that total variation in interest rate on fixed deposit has been explained by supply of deposits to the extent of 64.8 percent and remaining 35.2 percent is the effect of other variables.

4.4.2 Interest Rate and Its Effect on Lending of Nabil

The sector where Nabil grant its credit during last five years and their corresponding interest rate, average interest rate and lending amount are presented in the Table 4.7 below. Table 4.7 shows the lending interest rate structure of Nabil on different sectors. This interest rate is somewhat higher in value as compare to interest rate of RBB. It means that there was some difference in interest rate between the two banks.

Table 4.7

Lending Rate of Nabil on Different Sectors During Five Years

Sector	**2008**	**2009**	**2010**	**2011**	**2012**
Overdraft	-	-	-	-	-
Export Credit	10.5%	12%	14%	13%	14%
Import LC	10.5	12	13	14	13
HMG Bond	7.5	-	-	-	-
BG/CG	7.5	11	16	16	16
Against other guarantee	8.5	-	-	-	-
Industrial Loan	-	-	-	-	-
Commercial Loan	-	-	-	-	-
Priority Sector Loan	11.5	-	-	-	-

Working Capital	11.5	12	13	15	15
Hire Purchase	12	-	-	-	-
Others	12	12.5	16	17	16
Average Int. Rate (1)	**10.17**	**11.9**	**15**	**15**	**14.8**
Lending Amount (2)	**21514.6**	**27816.6**	**32902.8**	**38765.6**	**42731.7**
Correlation (r12)	**0.8977**				
Coefficient of Determination(r^2_{12})	**0.806**				
Std. Deviation	**1.98%**				

Source: Banking and Financial Statistics NRB

The Table 4.7 shows the lending interest rate structure of Nabil five fiscal years on different sectors. From table it is clear that the interest rates of Nabil are in falling stage. During the first phase of FY the interest increases up to 2010. But in year 2011 we see the increase and decrease of interest rate of different sector. In 2012 the interest rate is constant or decrease somewhat. The average interest rate for FY, 2008, 2009, 2010, 2011, and 2012 are 10.17%, 11.9%, 15%, 15%, and 14.8% respectively. In same manner, the lending amount of Nabil increase each year. This shows that the lending amount and interest have positive relationship. But to get the exact numerical result of relationship correlation ship should be necessary to calculate. The figure for changing trend of interest rate and lending amount is given on Figure 4.7 & 4.8.

Figure 4.7

Lending Amount of Nabil During Different Years (in millions)

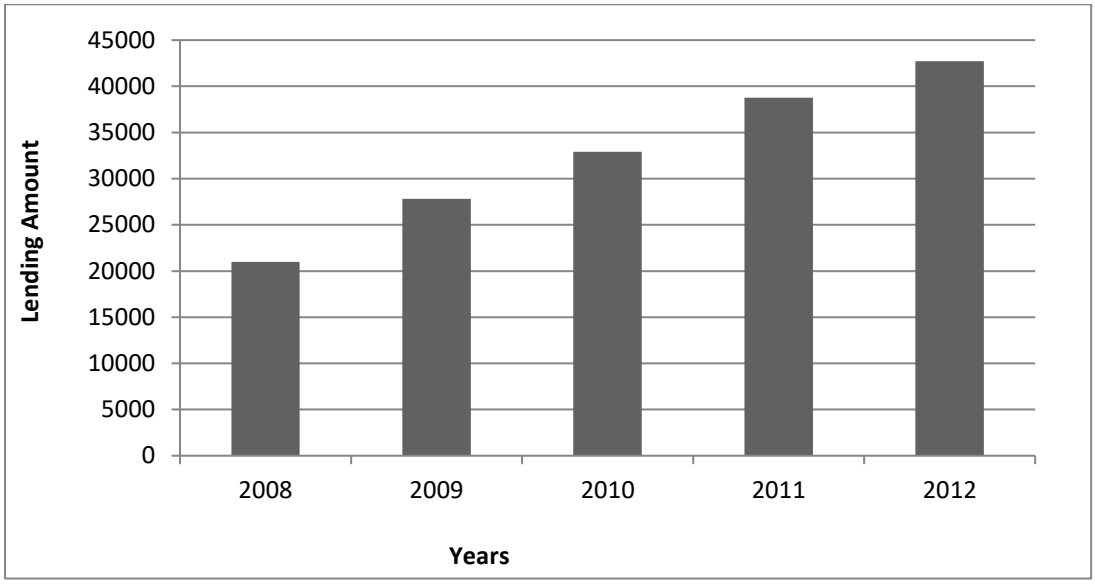
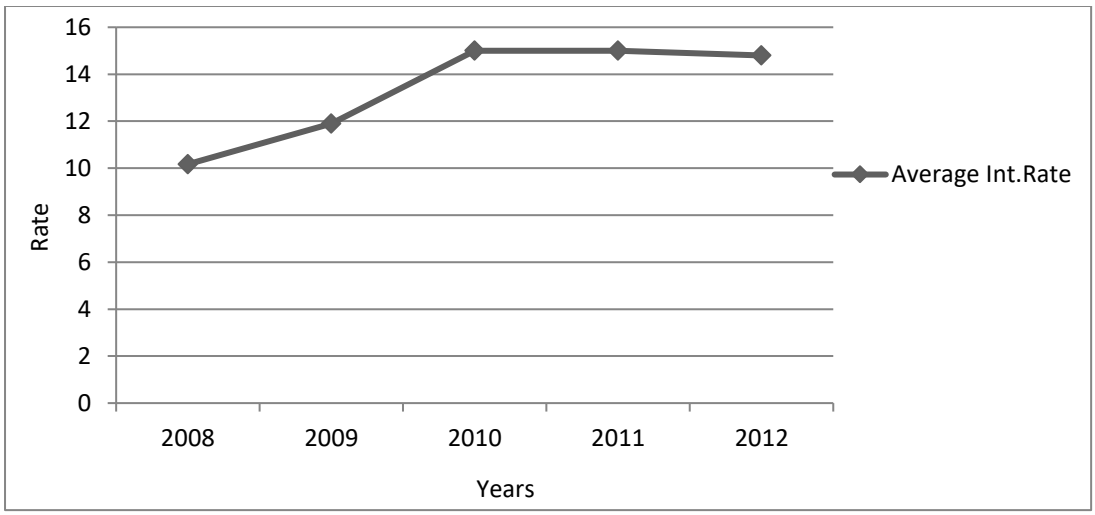


Figure 4.8

Average Lending Rate of Nabil During Different Years



Correlation Coefficient and Coefficient of Determination of Nabil

To find the exact relationship between the lending interest rate and lending amount, it is necessary to use some of the statistical tools like correlation coefficient, coefficient of determination. For this case, the correlation coefficient between Nabil's average interest rate and lending amount is 0.8977. It means that, according to our classification, this is high degree of positive correlation. Increase in one variable result the increase in other variables but in high magnitude. In other words, if one

variable increases by one percentage, then other variable increases by 89.77%. The result of correlation is against the theory. Because according to theory there should be negative correlation. In other word, decrease in interest rate should be followed by increase in lending amount. But this case doesn't happen for Nabil. The coefficient of determination ($r^2$23) = 0.806, which means that the relationship between two variable (lending amount and rate) is defined up to 80.6% only.

4.5 Bank of Kathmandu Limited

4.5.1 Interest Rate and Its Effect on Deposit of BOK

The general interest rate structure of BOK for last five fiscal years is given on the Table 4.8. Though the BOK has transaction on both agriculture sector and non-agriculture (commercial) sectors, here for this study only the interest rate of commercial sector is taken in consideration.

Table 4.8

Interest rate Structure on Deposit of BOK as on Mid-July

Deposit	**2008**	**2009**	**2010**	**2011**	**2012**
Savings	2.25%	2.25%	3%	2.25%	2.25%
Fixed					
7 Days	2	2	3	3	3
14 Days	2.5	2.5	3.5	3.5	3.5
1 Month	3	3	4	4	4
2 Month	-	-	-	-	-
3 Months	3.2	3.5	4.5	4	4
6 Months	4	4	6	6	6
1 Year	5	5	8.5	8.5	8.5
Above 2 Years	5.5	5.75	8.65	9	9
Whole Mean	**3.43**	**3.5**	**5.14**	**5.03**	**5.03**
Fixed Deposit Mean	**3.6**	**4**	**5.45**	**5.43**	**5.43**
Std. Deviation	**0.786%**				

Source: Banking and Financial Statistics NRB

The Table 4.8 shows the interest rate structure of BOK on saving deposits and fixed deposits. The deposit rates are in increasing trends. For saving deposit, it is found that the interest rate has been declined by 0.50% during year 2011 and 2012 in comparison to year 2010. For fixed deposit interest rate is in increasing trend. In some time it may constant. This can be illustrated on graph as Figure 4.10.

Correlation Coefficient and Coefficient of Determination of BOK

Table 4.9

Relationship between Interest Rate and Deposit amount (in millions) of BOK

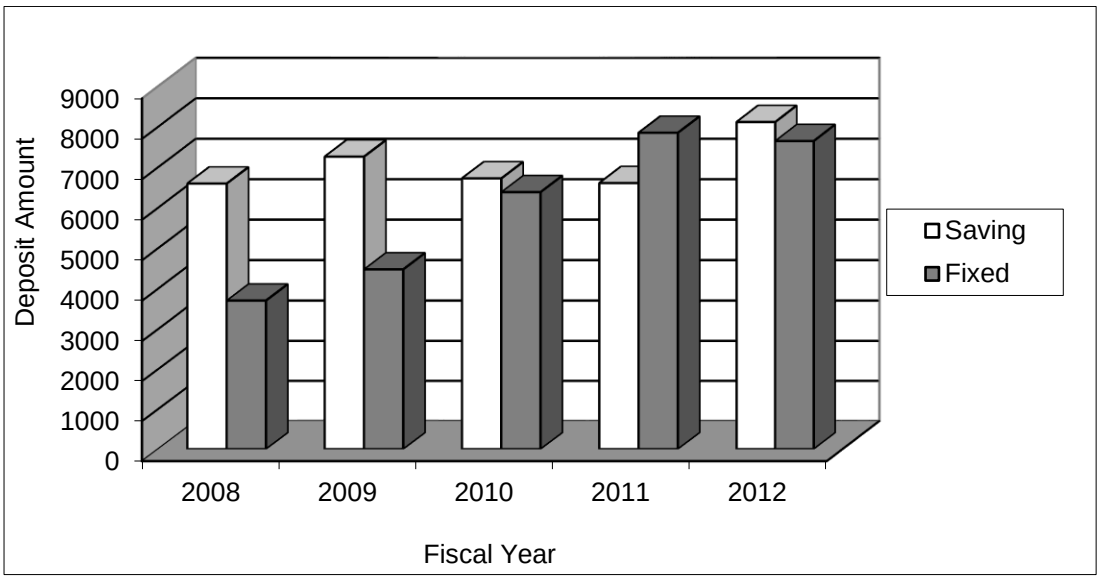
Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)
2008	3.34	6595.2	3.6	3703.1
2009	3.5	7260.3	4	4474.6
2010	5.14	6723.2	5.45	6383.6
2011	5.03	6607.6	5.43	7850.3
2012	5.03	8116.5	5.43	7646.3
Correlation	**0.1885**		**0.9511**	
Coefficient of Determination	**0.0355**		**0.9046**	

Source: Banking and Financial Statistics NRB

Table 4.9 shows that interest rate and deposit amount are moving in positive direction. To get the exact relation it is necessary to calculate the correlation coefficient. Here the data shows that both saving and fixed deposits are in substitution effect. To verify it, the value or correlation and. But prior to this it is effective if tabular value can be shown on graph as Figure 4.9

Figure 4.9

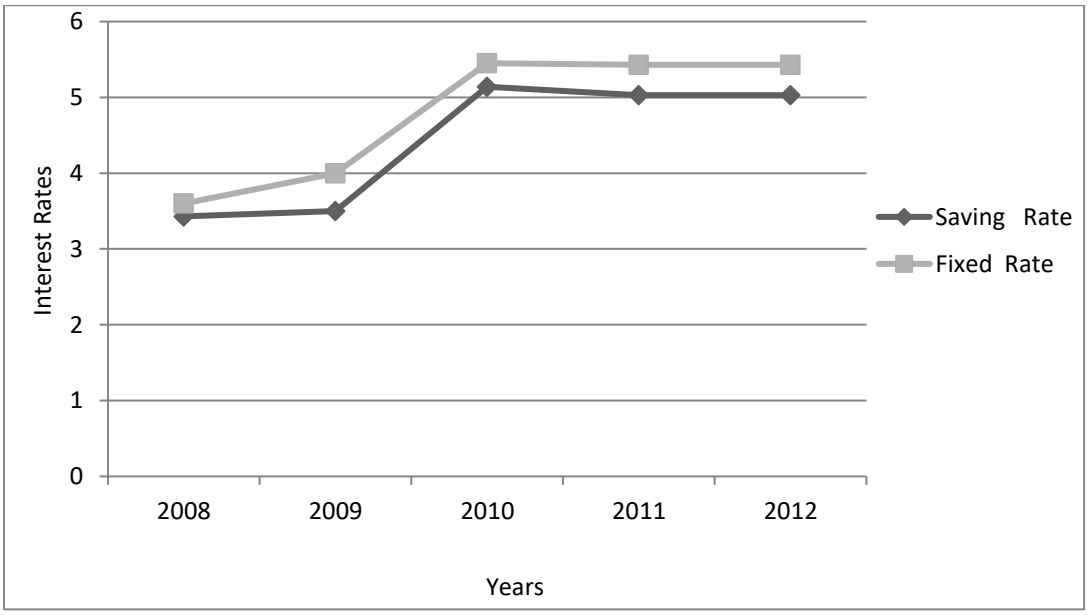
Deposit Amount of BOK During Different Years (in millions)



Similarly, the relationship between interest rate of saving and fixed deposit can be shown in figure 4.10 as:

Figure 4.10

Interest Rates of BOK on Saving and Fixed Deposit



The Figure 4.9 shows that the deposit amount of BOK is in increasing trend. The increasing tendency is high for fixed deposit but for saving deposit, the trend is increasing slowly. Similarly Figure 4.10 shows that both the interest rate of fixed and saving deposits is in increasing in first three years and then it continuous to decrease or constant. Their fluctuating pattern is almost similar which can be seen clearly on the Figure 4.10.

The correlation coefficient for saving deposit and its interest rate is found to be r23 = 0.1885 which means that deposit amount and its interest rate have low degree of positive correlation. It means increase in one variable result the increase in other variables. Similarly the coefficient of determination, $r^2$23 = 0.0335 which means that the value of dependent variables is dependent on independent variables to the extent of 3.35 percent. Similarly for fixed deposit, the coefficient of correlation (r45) is 0.9046, which is positive with high degree of relationship. This is the extremely opposite case as compare to the correlation coefficient of RBB and NABIL. The analysis of BOK shows that positive relation between interest rate and deposit amount. Which show that increase in interest rate, increase in the deposit amount of banks.

4.5.2 Interest Rate and Its Effect on Lending of BOK

As previously mentioned, BOK also grants credit on different area like commercial loan, industrial loan, overdraft, working capital and so on. The general lending interest rate, lending area, average lending rate and lending amount during the five fiscal years are presented in the Table 4.10.

Table 4.10

Lending Rate BOK on Different Sectors during Five Years

Sector	**2008**	**2009**	**2010**	**2011**	**2012**
Overdraft	13.5%	13.5%	16%	16%	16%
Export Credit	10.5	12.5	14	14	13
Import LC	12.5	12.5	13	13	14
HMG Bond	8	10	13	13	12
BG/CG	10.5	10.5	12	13	13

Other Guarantee	8.5	-	-	-	-
Industrial Loan	13	-	-	-	-
Commercial Loan	13.5	-	-	-	-
Priority Sector Loan	-	-	-	-	-
Working Capital	13.5	13.5	15	14	14.5
Hire Purchase	11	12	15	14	15
Others	13.5	13.5	16	15.5	16
Average Int. Rate (1)	**11.64**	**12.25**	**14.25**	**14.063**	**14.187**
Lending Amount (2)	**12692.9**	**14894.7**	**16847.1**	**17247.8**	**18064.1**
Correlation (r12)	**0.9568**				
Coefficient of determination(r212)	**0.9155**				
Std. Deviation	**1.118%**				

Source: Banking and Financial Statistics NRB

The Table 4.10 shows the interest rate of BOK on lending on five fiscal years granted in different sectors. With comparison to above aforementioned bank, BOK lending rate was somewhat higher than quoted by those above bank. The interest rate of BOK during FY 2008 was very low is 8%and very high is 13.5%, this percentage increase 12%as lower percent and the high percent is16% during four year period. This indicates the how the interest rate is increasing compare to other three banks. It means that at 2008 the average interest rate of BOK was 11.64% where as other banks had average lending rate is 9.17%. During five years period the interest rate is 713.278% on average. Conversely, the lending amount of BOK is seen to be in increasing trend. With compare to 2008 lending, lending of 2012 is 42% more. So it can be said that lending of BOK was expanded rapidly within that five fiscal periods. These phenomenon shows that lending interest rate and lending amount have positive relationship.

To quantify this relationship, it is necessary to calculate correlation coefficient. But prior to this it is fruitful if the trend of lending interest rate and lending amount is shown in the figure as in Figure 4.11.

Figure 4.11

Lending Amount of BOK During Different Years (in millions)

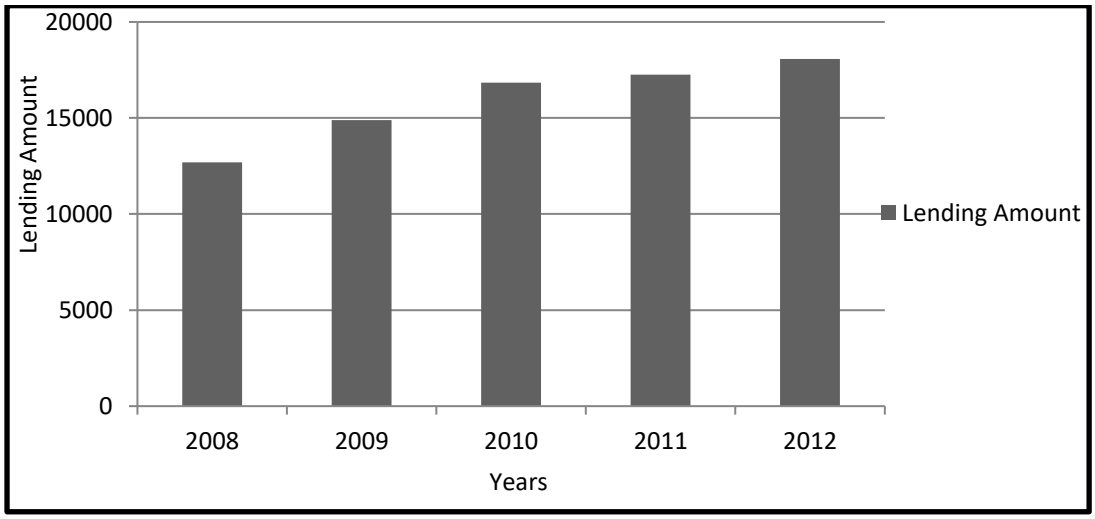
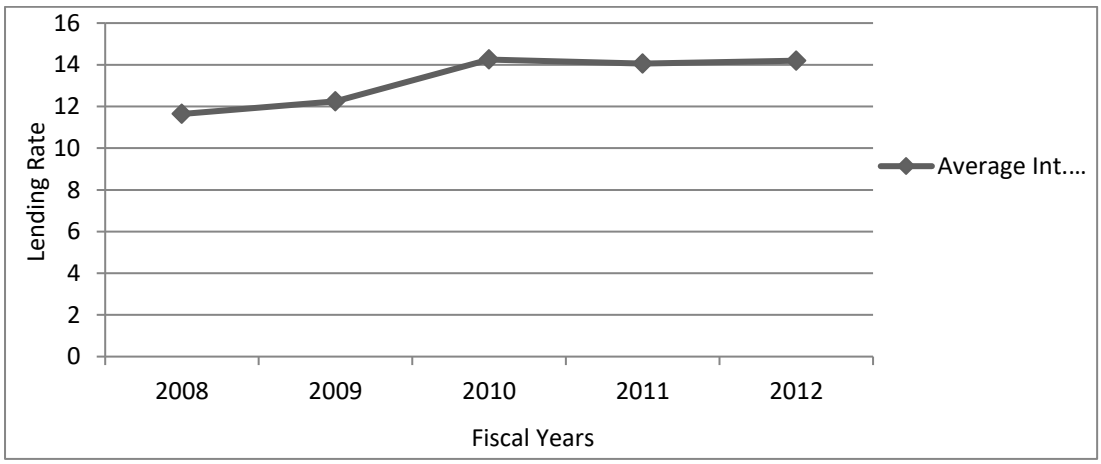


Figure 4.12

Average Lending Rate of BOK During Different FY



Correlation Coefficient and Coefficient of Determination of BOK

By using excel spreadsheet, correlation coefficient, average, standard deviation and other necessary statistics can be calculated. The correlation coefficient between lending rate and lending amount for BOK is 0.9568. This is very high degree of correlation. The positive sign indicates that, the two variables have positive relationship, meaning decrease in one variables leads to decrease in other variables. For this case, decrease interest rate decreases the lending amount or vice versa. The coefficient of determination for correlation coefficient is 0.9155. In other words, the relationship between one variable is defined by another is up to the level of

91.55%.From the analysis; it is verify that theory does not matches with the lending case of BOK.

4.6 Standard chartered Bank Limited (SCBL)

4.6.1 Interest Rate and Its Effect on Deposit of SCBL

The general interest rate structure for SCBL for saving deposit and fixed deposits during past five fiscal years is as follows:

Table 4.11

Interest Rate Structure on Deposit of SCBL as on Mid-July

Deposit	**2008**	**2009**	**2010**	**2011**	**2012**
Savings	2%	2%	3%	2%	2%
Fixed					
7 Days	-	-	-	-	-
14 Days	1	1	1.5	1.5	1.5
1 Month	1.5	1.5	1.75	1.75	1.75
2 Month	1.5	1.5	1.75	1.75	1.75
3 Months	1.5	1.5	1.75	1.75	1.75
6 Months	1.75	1.75	-	-	-
1 Year	2.5	2.5	10.25	10.25	10.25
Above 2 Years	3	3	11	11	11
Whole Mean	**1.84**	**1.84**	**4.43**	**4.28**	**4.28**
Fixed Deposit Mean	**1.82**	**1.82**	**4.67**	**4.67**	**4.67**
Std. Deviation	**0.786%**				

Source: Banking and Financial Statistics NRB

From Table 4.11, it is clear that the interest rate on deposit of SCBL is also in increasing trend in first two year and then almost constant in during study period. But during last fiscal year the constant rate shows the unique features. The whole average interest rate is 1.84% in 2008 but it was 1.84%, 4.43% and 4.28% in FY 2009, 2010, and 2011&2012 a respectively. Similarly the average fixed deposit rate is 1.82%, 1.82%, 4.67%, 4.67 and 4.67% in FY 2008, 2009, 20010, 2011 and 2012 respectively. It means that increasing speed of deposit interest rate of SCBL is in slow position till

year 2009 because it constant. This phenomenon can be portrayed in the graph as Figure 4.14.

Correlation Coefficient and Coefficient of Determination of SCBL

Table 4.12

Relationship between Interest Rate and Deposit Amount (in millions) of SCBL

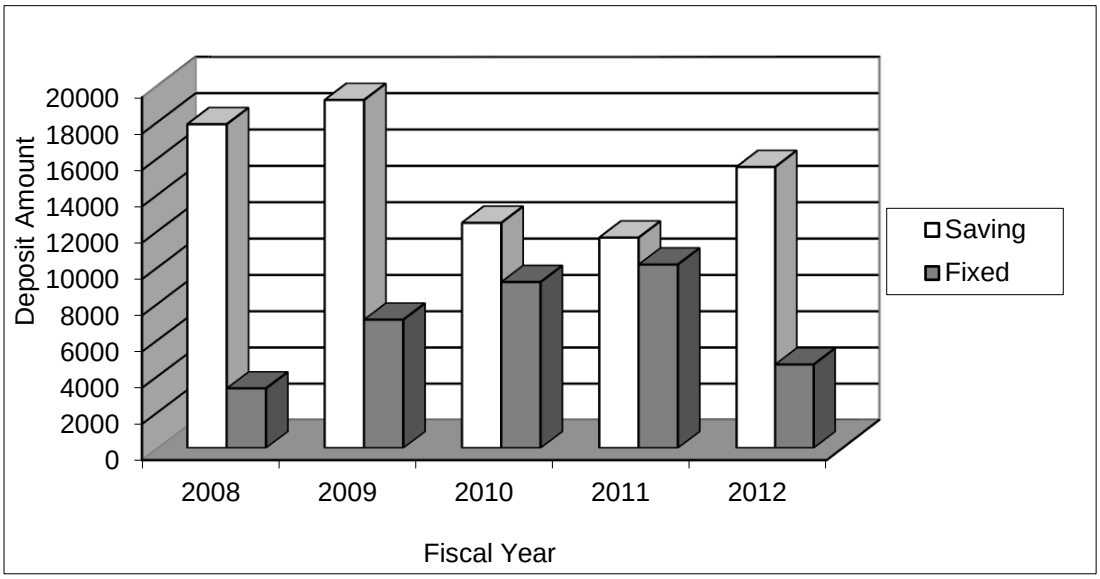
Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)
2008	1.84	17856	1.82	3301.1
2009	1.84	19187.7	1.82	7101.7
2010	4.43	12430	4.67	9175.1
2011	4.28	11619.8	4.67	10136.2
2012	4.28	15502.3	4.67	4623.3
Correlation	**-0.893**		**0.7977**	
Coefficient of Determination	**0.523**		**0.2735**	

Source: Banking and Financial Statistics NRB

The Table 4.12 shows the amount of saving deposit and its interest rate as well as amount of fixed deposit and its interest rate for five fiscal year. The table indicates that, in one hand deposit rates are increasing & constant where as in other hand deposit amount is increasing and decreasing in each fiscal year. This suggests that interest rate and deposit amount may have positive relationship, i.e. when one variable is found to be increased; other variable is found to be increase. This situation can be revealed in graph as Figure 4.13 in following ways.

Figure 4.13

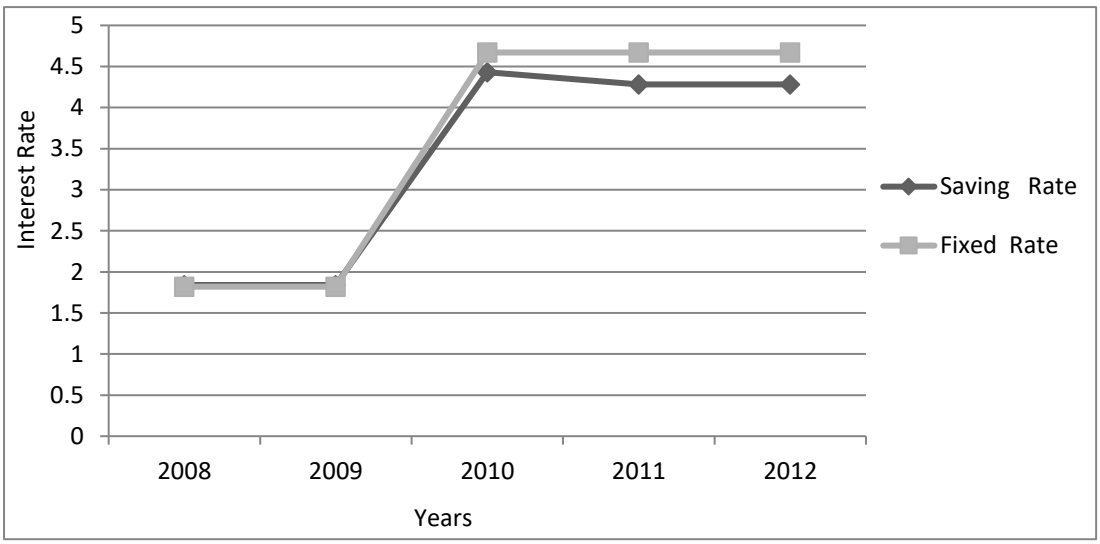
Deposit Amount of SCBL during different FY (in millions)



The Figure 4.13 shows the saving deposit amount is rise in first two year and than decrease in year 2010 & 2011, in 2012 increases some amount not more. It means that there is rise and fall for saving deposit amount. Fixed deposit amount rising continuously up to year 2011 and decrease 2012. Similarly the interest rate of fixed deposit and saving deposit can also be shown on Figure 4.14 as:

Figure 4.14

Interest Rates of SCBL on Saving and Fixed Deposit



To quantify the exact relationship between interest rate and deposit amount, it is necessary to calculate the correlation coefficient. The correlation coefficient of saving deposit amount and its interest rate is –0.893. It means that these two variables have very high negative relationship. Though the two variables don't have direct relationship but correlation coefficient tells that increase in one variable result the decrease in other variables. The case for fixed deposit is opposite to saving deposit. The correlation coefficient for fixed deposit rate and amount is 0.7977 which is very high positive correlation. Therefore for saving the case is against the substitution effect. The coefficient of determination of correlation coefficient of saving deposit is 0.7977, which indicates that the relation between deposit and interest rate is tied up to the level of 79.77 percent and remaining other percentage by other factors. In same manner for fixed deposit the value of coefficient of determination is 0.2735.

4.6.2 Interest Rate and Its Effect on Lending of SCBL

SCBL also grant credit on different area like commercial loan, industrial loan, overdraft, working capital and so on. These rates on the different fiscal years are as follows:

Table 4.13

Lending Rate SCBL on Different Sectors during Five Years

Sector	2008	2009	2010	2011	2012
Overdraft	6.5%	6.5%	-	-	-
Export Credit	11.5	10	13	13	13.5
Import LC	9	9	13	12	13
HMG Bond	8	8	13	13	12
BG/CG	9.5	9	13	13.5	13.5
Other Guarantee	11	11	13.5	13.5	13
Industrial Loan	11.5	11.5	-	-	-
Commercial Loan	11.5	-	-	-	-
Priority Sector Loan	-	-	-	-	-
Working Capital	10	10	13	13	13.5
Hire Purchase	9.5	-	-	-	-
Others	13	13	17.5	17.5	16

Average Int. Rate (1)	**10.091**	**9.778**	**13.71**	**13.64**	**13.5**
Lending Amount (2)	**13355**	**13118.6**	**15932.2**	**17698.2**	**18376**
Correlation (r12)	**0.916**				
Coefficient of determination(r212)	**0.8393**				
Std. Deviation	**1.807%**				

Source: Banking and Financial Statistics NRB

The Table 4.13 shows the interest rate of SCBL on lending on five fiscal years granted in different sectors. With comparison to above aforementioned bank, SCBL lending rate was somewhat lower than quoted by those above bank. The interest rate of SCBL during FY 2008 was very low is 6.5% and very high is 13%, this percentage increase 12% as lower percent and the high percent is 16% during four year period. This indicates the how the interest rate is increasing compare to other three banks. It means that at 2008 the average interest rate of SCBL was 10.091% where as other banks had average lending rate is 10.17%. During five years period the interest rate is 12.142% on average. Conversely, the lending amount of SCBL is seen to be in increasing trend. With compare to 2008 lending, lending of 2012 is 33.78% more. So it can be said that lending of SCBL was expanded rapidly within that five fiscal periods. These phenomenon shows that lending interest rate and lending amount have positive relationship.

To quantify this relationship, it is necessary to calculate correlation coefficient. But prior to this it is fruitful if the trend of lending interest rate and lending amount is shown in the Figure 4.15.

Figure 4.15

Lending Amount of SCBL During Different Years (in millions)

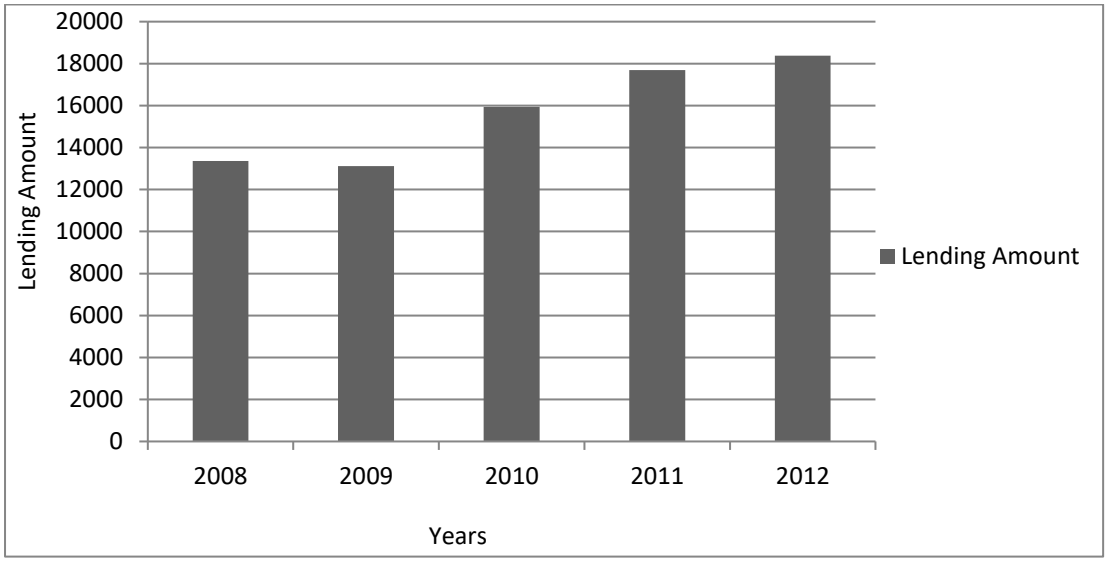
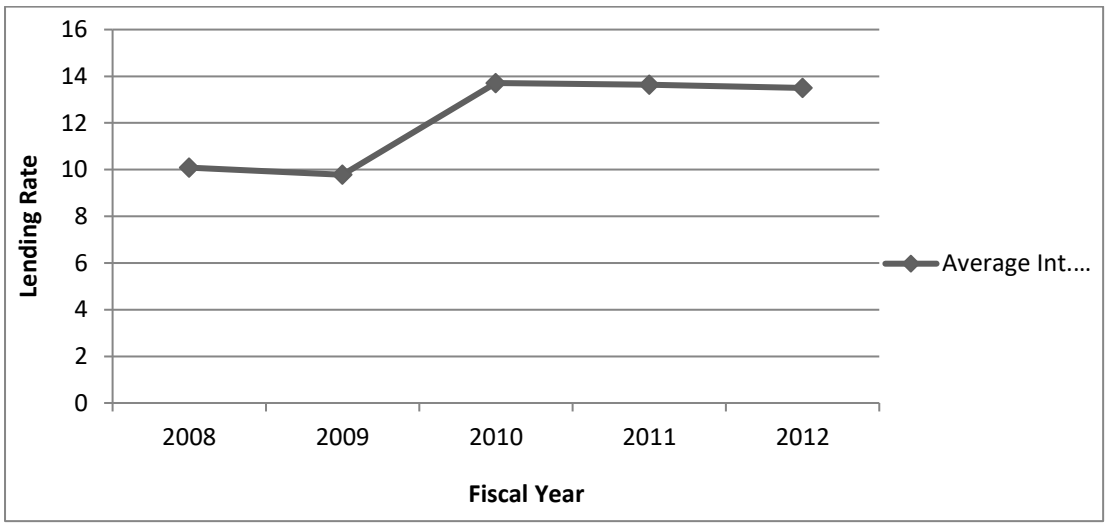


Figure 4.16

Average Lending Rate of SCBL During Different Years



The Figure 4.16 shows that interest rate of lending increase up to 2010 and then constant for the period 2011 and then decrease. It increases from average 10.091% to average 13.5.

Correlation Coefficient and Coefficient of determination of SCBL

The correlation coefficient of SCBL between lending amount and lending rate is 0.916. It is high degree positive correlation. It indicates that increment in one variable result the increment in other variables. In this case decrease in lending interest rate

decreases the lending amount. People preferred more credit from the SCBL when bank increase the lending interest rate. This is not similar with the saying of theory. Similarly the coefficient of determination between two variable (r2 12) = 0.8393. It means that the relationship between dependent variable and independent variable is defined up to the extent of 83.93%. In other words, the increase in lending amount by increase in interest rate is defined up to the extent of 83.93% where as remaining percentage is due to other factors.

4.7 Combined Calculation of Sample banks

4.7.1 Interest Rate and Its Effect on Deposit of Sample Banks

In the above calculation particular bank calculation was showed different result. So now combined impact of interest rate on deposit & lending. Here combined word refers the aggregate amount of selected sample banks (RBB, Nabil, BOK and SCBL).

Correlation Coefficient and Coefficient of Determination of Combined

Table 4.14

Relationship between Interest Rate and Deposit Amount (in millions) of Combined

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)
2008	3.26	76824.2	3.51	19948.1
2009	3.62	87171.2	4.012	23094.8
2010	5.76	75763.7	6.36	36809
2011	6.14	71106	6.91	49094.20
2012	5.41	85437	6.25	44324.5
Correlation	**-0.4519**		**0.9721**	
Coefficient of Determination	**0.2024**		**0.945**	

Source: Banking and Financial Statistics NRB

The Table 4.14 shows the total amount of fixed deposit and saving deposits and the interest rates offered on such deposits by all selected bank on five fiscal years starting from FY 2008 to FY 2012. The table portrays that the interest rate has been increased per year up to 2011 and then decrease on 2012 but deposit amount has been fluctuated in different year some time it increase and some time it decreased. This show there is not a positive relation among interest rate and deposit amount during the study period. It can be quantified by calculating correlation coefficient between them. This relationship can also be shown in Figure 4.17 and 4.18

Figure 4.17

Combined Deposit Amount During Different Years (in millions)

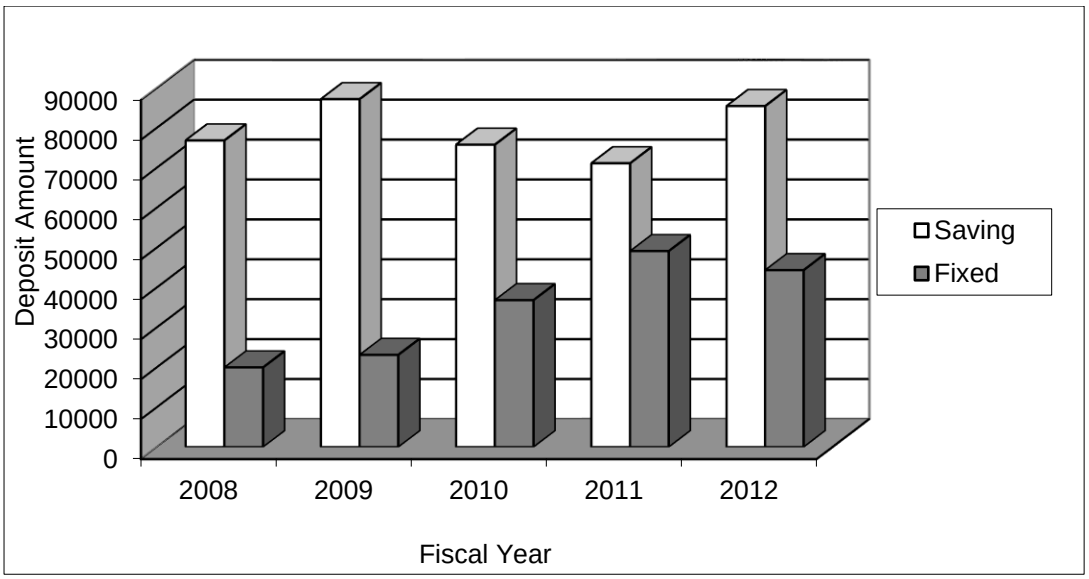
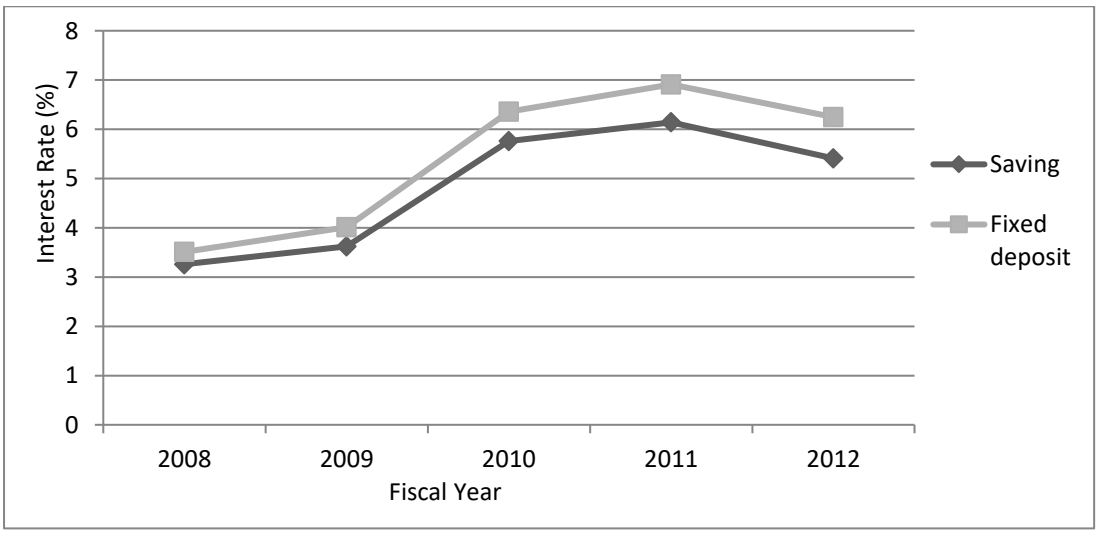


Figure 4.18

Combined Interest Rates on Saving and Fixed Deposit



According to Table 4.14, the interest rate on saving deposit has been increase up to 2011 & than decrease in year 2012. In same period the deposit amount was Rs. 76824.2 millions but this amount increases to Rs. `85437 millions. Here interest rates increase by 65.95%, where as deposit amount rises by 11.21% within the period of five years. It indicates the deposit collection is not perfectly correlated with interest rate.

Similarly, for fixed deposit the Table 4.14 shows that total amount of fixed deposit and interest rate on fixed deposit offered by all selected bank on five consequent FY started from 2008 to FY 2012. The table reveals that average fixed interest rate has been increased during the 5 years. At the FY 2008 the average interest rate was 3.51% on fixed deposit but later on every year this interest rate started to increase per annum and at 2012 some decrease in interest rate and it is 6.25% per annum on average. On effect of this increase, the amount of fixed deposit also started to increase in some respect. Increase in interest rate also increases the fixed deposit amount. In this regards, the substitution effect holds true in the case of fixed deposit.

To verify the above trend, it is necessary to calculate the correlation coefficient and coefficient of determination. If correlation coefficient is calculated for saving deposit rate and deposit amount, than the correlation coefficient between interest rate and saving deposit (r23) = -0.4519. This moderate negative correlation coefficient indicates that they have inverse relationship among each other. Decrease in interest rate is followed by an increase in saving deposit amount and vice-versa. This shows that the substitution effect in case of sample banks for saving account is not applicable. The coefficient of determination between these two variables is $r^2 23$ = 0.2024, which means that total variation in dependent variable (saving deposit amount) has been explained by independent variable (interest rate) to the extent of 20.24% and remaining is the effect of other factors.

In the same manner, the correlation coefficient between interest rate and fixed deposit amount (r45) is 0.9721. This means that these two variables are highly correlated when interest rate on fixed deposit decreases (increases) the deposit amount also decreases (increases). This is exactly the matter what the theory (substitution effects) says.

The coefficient of determination between these two variables is $r^2 45 = 0.945$, which means 94.5% of total variables in dependent variables (deposit unit) is explained by the independent variable (deposit rate) & remaining is due to the effect of other factors.

4.7.2 Interest Rate and Its Effect on Lending of selected sample banks

The average interest and total amount of lending of all selected sample banks is shown in the Table 4.15 below.

Table 4.15

Lending Rate on RBB on Different Sectors during five Years

Sector	**2008**	**2009**	**2010**	**2011**	**2012**
Average Int. Rate (1)	10.17	10.82	13.61	13.73	13.25
Lending Amount (2)	74916.1	87294	101298.7	110503.8	119518
Correlation (r12)	**0.6329**				
Coefficient of determination (r212)	**0.40**				

Source: Banking and Financial Statistics NRB

According to Table 4.15 it shows that interest rate on lending on different area are increasing. The table shows that the maximum interest rate is 13.73% in FY 2011, and minimum rate is 10.17% on FY 2008. This shows that the interest rate was increase during the last four years periods. The interest rates increasing tendency was stop in 2012 in this year interest rate decreased least percent. It means the rate increased each year with different rate. In preceding year the increasing rate was quite slow where as the increasing tendency was fast in later year. This concludes that interest rate on lending is also in increasing tendency for past few years. With harmony to interest rate, the lending amount of sample banks is also seen to be in increasing tendency but with some fluctuation. These can also be present in Figure 4.19 and 4.20.

Figure 4.19

Combined Lending Amount During different Years (in millions)

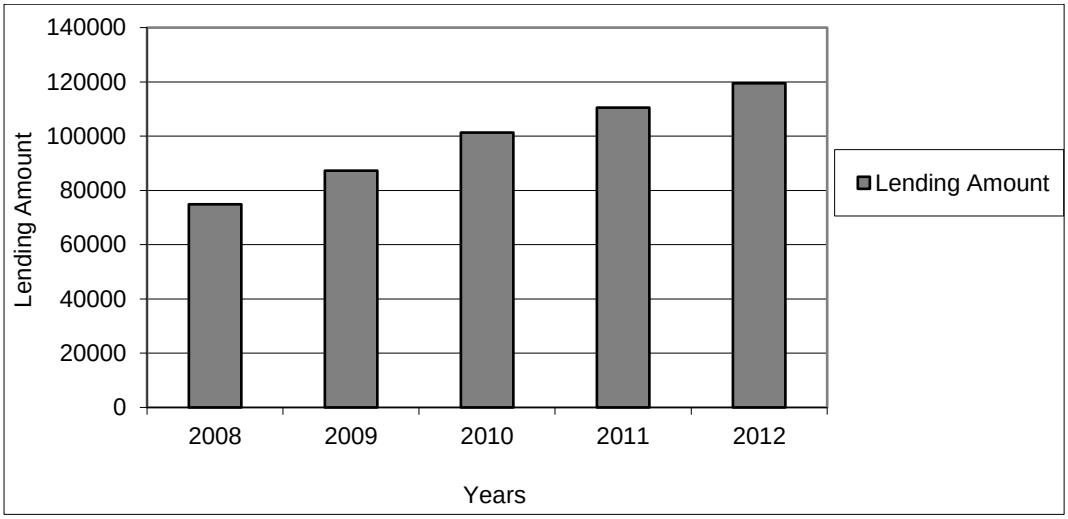
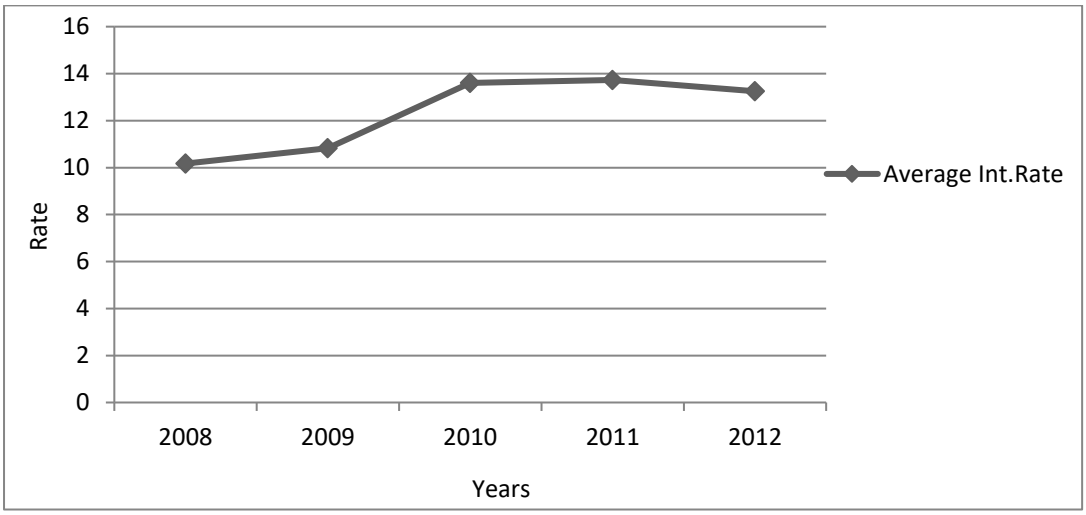


Figure 4.20

Combined Average Lending Rate during different Years



Correlation Coefficient, Coefficient of Determination of All sample bank combined

From Table 4.15 the correlation coefficient (simple correlation) between lending rate and lending amount (r23) is 0.6329. According to our classification, this correlation is "moderate degree" correlation. In this case it is clear that interest rate on lending & lending amount has positive relationship. It means they move in positive direction i.e. increase in lending rate result increase in total lending amount. This situation not matches with the actual theory. According to the theoretical concept of lending rate

and lending amount, people prefer or use more money when the market interest rate is low in the market. So the case is true only in 2012. In fiscal year 2009, 2010, 2011 lending amount increase with increase in interest rate. The simple determination of correlation coefficient (r23) is 0.40. When total lending amount is taken as dependent variable and lending rate as independent variables, then 40% of total variation in dependent variable is explained by lending rate and remaining percentage is due to the effect of other variables in the economy. In conclusion, the inverse relationship between lending rate and lending amount is not exactly applicable for sample banks in average.

4.8 Findings of the Study

This study is conducted to identify the practical applicability of some of the theories in the context of Nepal that are taught on the University and colleges. With this motive, this study is mainly focused on three objectives. First one is to determine the actual situation of substitution effect in the context of Nepalese financial markets. Similarly, next objective is to determine the relationship between lending rate and corresponding lending amount. And lastly, the next objective is to explore the actual relationship of deposit lending and interest rate.

From the study, the three major findings are obtained. They are:

1. The analysis of substitution effect for saving deposit shows that substitution effect does not work for all sample banks except BOK. This means that, people are oriented to deposit more amounts even if the interest rate are falling every year. The increasing deposit amount clarifies this fact.

2. From the calculation of coefficient of correlation between Fixed deposit amount and interest rate on deposit of all the sample banks were found to be positive. It shows positive relationship between the two variables. It reveals that the movement of fixed deposit and interest rate on similar direction. This shows that substitution effect is applicable; in the case of fixed deposit.

3. From the calculation of standard deviation of interest rate on saving deposit of the entire sample banks, it is found that standard deviation of RBB is higher

(2.28%) and low in SCBL (.786%).It shows fluctuation on interest of RBB is higher than other sample banks.

4. According to theory, lending interest rate and lending amount should have inverse relationship. From this study, it is found that all sample banks have positive relationship in lending amount and lending interest rate. Increase in lending amount is not due to the decrease in lending rate but due to other factors.

5. From the calculation of standard deviation of lending rate of the entire sample banks, it is found that standard deviation of Nabil is higher (1.98%) and low in SCBL (1.118%).It shows fluctuation on interest of Nabil is higher than other sample banks.

CHAPTER - V
SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter is a last part of the research study which includes all the briefing of the whole study and extracts of all the previously discussed chapters. This chapter mainly consists of three parts summary, conclusion and recommendation. In summary portion revision of all four chapters are made viz. introduction, literate review, research methodology and analysis of data. Then conclusion is drawn following analysis part and comparing the theoretical aspect and analysis. Conclusion part answers whether practically relates to theory. Based on conclusion necessary suggestions are presented in recommendation part i.e. various measures are recommended to concerned organization for the improvement of the current condition of interest rate structure of the commercial bank of Nepal so that the banks can mobilise their deposits more smoothly and properly in the near future.

5.1 Summary

Many commercial bank, development banks and financial institutions are operating in the economy to assist in the process of economic development of the country. Due to high competition between the financial institutions, the collected high amount of deposit from public is not properly invested. It is due to lack of demand for fund. So, it raised the problems of investment. Proper mobilization of deposit plays a vital role in the development of economy of the nation. Accepting deposit from savers and transferring the collecting deposit to the investment sector in one of the major functions of banking business. To collect deposit bank provide certain percentage of interest and when amount is loaned outside certain percentage of interest is charged to them. Even though these are various factors in the economy that affects deposit amount and lending amount of the banks with the curiosity to be clear about interest rate structure of commercial banks and to be clear about whether interest rate influence deposit amount this study is made.

The review of literature shows that there are so many economic and non economic factors on deposit. But it is real fact that there is relationship between interest rate and deposit. The volumes of deposit amount of banks are highly affected by their interest rate. According to the theoretical views there is positive relationship between interest

rate and deposit amount. That means, when interest rate on deposit increases that attract to the deposit and deposit amount of banks are increases and vice-versa.

For the purpose of the study, the necessary data on interest, deposit mobilisation and other related variables were collected for the period 2008-2012. The effect of interest rate on deposit amount is analysed from four commercial banks of Nepal for five years period by using statistical tools mentioned in chapter three. Secondary data are collected from NRB's economic reports, annual reports of related banks and websites. The analysis of all banks shows average interest rate on deposit is in decreasing and deposit amount is in increasing trend. This trend shows there is negative relationship between interest rate and deposit amount except BOK. The statistical analysis also shows that there is significant relationship between interest rate and deposit amount.
With the impact of theories and economic factors, interest rate fluctuates from time to time, such fluctuations have been analysed with the help of statistical tools in a systematic manner. Deposit rate of all sample banks under the study are in a decreasing trend. Trend of deposit and loan & advances are in increasing trend. But trend of interest rate is decreasing trend except Nabil. Similarly, statistical analysis shows that the correlation coefficient between deposit and deposit rate are negative for all sample banks except BOK. The correlation coefficient between interest rate and loan & advances are positive. This means that these factors are correlated. Thus, interest rate structure of commercial banks has greater influence over funds mobilisation in the productive sector. However, the commercial banks of Nepal have not been fully able to succeed in this regard.

5.2 Conclusion

From the analysis of relevant data of sample banks under the study; using various statistical tools mentioned in chapter three and from their findings conclusion have drawn. This study concludes that fluctuations in the interest rate of the commercial banks slightly affect the deposit mobilisation. When there is a slight increase or decrease in interest rates of deposits, deposits are affected slightly. This study concludes that most of sample banks have negative correlation between interest rate and deposit. The interest rate on deposit of all sample banks is found to be in decreasing trend. But on the contrary to this deposit amount is increasing every year. The study also concludes that commercial banks should pay very high attention on

how they fix the interest rates on the deposits or the money that flows into the banks as funds. Based on analysis of sample banks it can be concluded that interest rate on deposit is not attractive for the depositors; as every year deposit rate of sample banks are seem decreasing. Analysis of correlation between deposit amount and interest rate show the negative relationship of all sample banks except BOK. Trend of loan & advances are in increasing trend of all sample banks. But trend of interest rate is increasing. Most of the banks are mobilized their funds more in loan & advances than investment.

5.3 Recommendation

To full fill the objective of this study, related data and ideas are collected from different sources. These data are presented; analysed and interpreted then conclusions are made. Based on the analysis, interpretation and conclusion of this study certain recommendation can be made here. So that concerned authorities, further researcher, academicians and banker can get insights on the present conditions of above topics. It is considered that this research will fruitful for them to improve the present condition as well as for further research. The major recommendations after this study are as follows:

1. Interest rate on deposit is too less in Nepal. Commercial banks are suggested to increase the interest rate on deposit so that depositors are benefited by their saving. The banks namely the Rastriya Banijya Bank and the Standard Chartered Bank Limited offer comparatively lower interest rates on the deposits than other banks. The recommendation for these banks is that to increase the interest rate to attract more customers.
2. The banks should try to carry out different schemes which may help to increase the deposit collection.
3. The interest spread rate as per NRB directives requirement i.e. 5% so NRB is not successful to maintain spread rate to 5%. Therefore it is big problem to commercial banks because the main income of commercial bank is difference between interest paid and received. So commercial banks are suggested to maintain interest spread rate as per NRB directives.
4. The central banks of Nepal, NRB should pay special attention towards decreasing trend of interest rate on deposit. It may cause different bad effect in

the country such as disintermediation, lack of savings and further saving may go outside of the country.

5. Banks are not able to mobilize to its deposits in terms of loan due to lack of sufficient safe investment opportunities. Thus it is suggested to the government to improve the political situation of the country.
6. Banks should make plan to open their forthcoming branches in rural sector so that large number of people living in rural sector might be able to take advantages of banking facilities. As most of the banks are operated only in the urban sector.
7. Some of the banks are security oriented rather than project oriented. The commercial banks of Nepal should lend their deposits more in projected-oriented works. The commercial banks are strongly recommended to follow liberal lending policy.

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Website

www.bok.com.np

www.google.com

www.nabilbank.com

www.nrb.org.np

www.rbb.com.np

www.standardchartered.com

Appendix

Calculation of Mean and Standard Deviation of Deposits and Fixed Deposits of RBB

Deposit	2008	2009	2010	2011	2012
Savings	2%	2%	2%	2%	2%
Fixed					
7 Days	-	-	-	-	-
14 Days	-	-	-	-	-
1 Month	-	-	-	-	-
3 Months	2.25	2.25	5.5	5.5	5.5
6 Months	2.5	2.5	6	6	6
1 Year	3.5	5	7	10.5	10.5
Above 2 Year	5	6	8	11	11
Total	15.25	17.75	28.5	35	35
Total Fixed Deposit	13.25	15.75	26.5	33	33

Mean Of Deposit(X) = $\frac{\sum X}{n}$ Mean of Fixed Deposit

2008 : $\frac{15.25}{5}$ =3.05 $=\frac{13.25}{4}$ =

2009 : $\frac{17.75}{5}$ = 3.55 $= \frac{15.75}{4}$ = 3.94

2010 : $\frac{28.5}{5}$ = 5.7 $= \frac{26.5}{4}$ = 6.63

2011 : $\frac{35}{5}$ =7 $= \frac{33}{4}$ = 8.25

2012 : $\frac{35}{5}$ =7 $= \frac{33}{4}$ = 8.25

Saving S.D (σ) = $\sqrt{\frac{\sum(x-X)^2}{N}} = \sqrt{\frac{11.43}{5}}$ = 2.28 Fixed S.D (σ) = $\sqrt{\frac{\sum(x-X)^2}{N}}$ = 4.39

Calculation of Correlation Coefficient, Coefficient of Determination and of RBB Relationship between Interest Rate and Deposit amount of RBB

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)	R2×R3	R4×R5
2008	3.05	40213	3.31	4479.8	122649.65	14828.14
2009	3.55	46102.8	3.94	3207.8	163664.94	12638.73
2010	5.7	42826.9	6.63	6539.2	244113.33	43354.90
2011	7	38590	8.25	14266.9	270130	117701.93
2012	7	43823.4	8.25	18010	306763.8	148582.5
Total	26.3	211556.1	30.38	46503.7	1107321.72	337106.2

Correlation Coefficient $(r_{23}) = \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$$= \frac{5\times1107321.72 - 26.3\times211556.1}{8.38\times13262.48} = \frac{-27316.83}{111167.75} = -0.245$$

$(r^2_{23)} = (-0.245)^2 = 0.06$

Correlation Coefficient $(r_{45}) = \frac{5\times337106.2 - 30.38\times46503.7}{10.48\times29026.32} = \frac{272748.59}{304195.82} = 0.896$

$(r^2_{45)} = (0.896)^2 = 0.802$

Calculation of Correlation Coefficient, Coefficient of Determination and Standard Deviation of RBB Relationship between Interest Rate and Lending Amount

Sector	2008	2009	2010	2011	2012
Overdraft	11	11	12.25	13	12
Export Credit	**8**	**8**	**9**	**11**	**11**
Import LC	8	-	9	11	12
HMG Bond	7	7	11	11.5	11
BG/CG	7	7	11	11.5	11
Other Guarantee	6	-	-	-	-
Industrial Loan	-	-	-	-	-
Commercial Loan	-	-	-	-	-
Priority Sector Loan	11.5	11.5	11.5	11.5	10

Working Capital	-	-	13.5	13.5	12.5
Hire Purchase	9	10	13	13.5	12.5
Others	11.5	11	13	13.5	13
Average Int. Rate (1)	8.78	9.36	11.47	12.22	10.53
Lending Amount (2)	27353.6	31464.1	35616.6	36792.2	40346.2
R1×R2	240164.61	294503.98	408522.40	449600.68	424845.49

Correlation Coefficient $(r_{23}) = \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{\sum X_2^2 - (\sum X_2)^2}}$

$= \frac{5\times1817637.16 - 52.36\times171572.72}{6.39\times22449.36} = \frac{104639.23}{143451.41} = 0.729$

Coefficient of Determination $(r^2_{12}) = (0.729)^2 = 0.576$

Average Interest Rate S.D (σ) = $\sqrt{\frac{\sum(X-X)^2}{N}} = \sqrt{\frac{8.1536}{5}} = 1.277\%$

Calculation of Mean and Standard Deviation of Deposits and Fixed Deposits of Nabil

Deposit	2008	2009	2010	2011	2012
Savings	2%	2%	3%	3%	3%
Fixed					
7 Days	-	-	-	-	-
14 Days	3	-	-	-	-
1 Month	3.5	4	7	7	-
2 Month	-	-	-	-	-
3 Months	6.75	5	8	8	-
6 Months	6.75	6	9	9	-
1 Year	5	8	9.5	10.5	6
Above 2 Years	6.75	8.5	10	12	7
Total	33.75	33.5	46.5	49.5	16
Total Fixed Deposit	31.75	31.5	43.5	46.5	13

Calculation Mean of Deposit

2008: $\frac{33.75}{7} = 4.82$

Calculation of Fixed Deposit Mean

2008: $\frac{31.75}{6} = 5.29$

2009: $\frac{33.5}{6}$ =5.58

2010: $\frac{46.5}{6}$ =7.75

2011: $\frac{49.5}{6}$ =8.25

2012: $\frac{16}{3}$ =5.33

2009: $\frac{31.5}{5}$ = 6.3

2010: $\frac{43.5}{5}$ = 8.7

2011: $\frac{46.5}{5}$ = 9.3

2012: $\frac{13}{2}$ = 6.5

Mean deposit interest rate S.D (σ) = $\sqrt{\frac{\sum(X-X)^2}{N}} = \sqrt{\frac{9.544}{5}}$ = 1.91%

Correlation Coefficient and Coefficient of Determination of Nabil

Relationship between Interest Rate and Deposit amount of Nabil

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)	R2×R3	R4×R5
2008	4.82	12160	5.29	8464.1	58611.2	44775.1
2009	5.58	14620.4	6.30	8310.7	81581.83	52357.41
2010	7.75	13783.6	8.7	14711.1	106822.9	127986.57
2011	8.25	14288.6	9.3	16840.8	117880.95	156619.44
2012	5.33	17994.8	6.65	14044.9	95912.28	93398.59
Total	31.73	72847.40	460809.16	62371.60	460809.16	475137.10

Correlation Coefficient (r_{23}) $= \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$= \frac{2304045.8 - 2311448}{6.91 \times 9549.22} = \frac{-7402.2}{65958.34} = -0.1122$

$(r^2_{23}) = (-0.1122)^2 = 0.0126$

Correlation Coefficient ($\mathbf{r_{45}}$) $= \frac{5 \times 475137.1 - 36.24 \times 62371.60}{7.55 \times 17313.8} = \frac{105359.26}{130764.33} = 0.805$

$(\mathbf{r^2_{45}}) = (0.805)^2 = 0.648$

Calculation of Correlation Coefficient, Coefficient of Determination and Standard Deviation of NABIL Relationship between Interest Rate and Lending amount

Sector	2008	2009	2010	2011	2012
Overdraft	-	-	-	-	-
Export Credit	10.5%	12%	14%	13%	14%
Import LC	**10.5**	**12**	**13**	**14**	**13**
HMG Bond	7.5	-	-	-	-
BG/CG	7.5	11	16	16	16
Against other guarantee	8.5	-	-	-	-
Industrial Loan	-	-	-	-	-
Commercial Loan	-	-	-	-	-
Priority Sector Loan	11.5	-	-	-	-
Working Capital	11.5	12	13	15	15
Hire Purchase	12	-	-	-	-
Others	12	12.5	16	17	16
Average Int. Rate (1)	10.17	11.9	15	15	14.8
Lending Amount (2)	21514.6	27816.6	32902.8	38765.6	42731.7
R1×R2	218803.48	331017.54	493542	581484	632429.16

Correlation Coefficient $(r_{23}) = \dfrac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$$= \frac{5\times 2257276.18 - 66.87\times 163731.3}{9.94\times 37842.95}$$

$$= \frac{337668.86}{376139.95} = 0.8977$$

Coefficient of Determination $(r^2_{23}) = (0.8977)^2 = 0.806$

Interest rate S.D $(\sigma) = \sqrt{\dfrac{\sum(X-X)^2}{N}} = \sqrt{\dfrac{19.73}{5}} = 1.98\%$

Calculation of Mean and Standard Deviation of Deposit and Fixed Deposit of BOK

Deposit	2008	2009	2010	2011	2012
Savings	2.25%	2.25%	3%	2.25%	2.25%
Fixed					
7 Days	2	2	3	3	3
14 Days	2.5	2.5	3.5	3.5	3.5
1 Month	3	3	4	4	4
2 Month	-	-	-	-	-
3 Months	3.2	3.5	4.5	4	4
6 Months	4	4	6	6	6
1 Year	5	5	8.5	8.5	8.5
Above 2 Years	5.5	5.75	8.65	9	9
Total Deposit	27.45	28	41.15	40.25	40.25
Total Fixed Deposit	25.2	27.75	38.15	38	38

Calculation of Whole Mean

Mean

2008: $\frac{27.45}{8} = 3.43$

2009: $\frac{28}{8} = 3.5$

2010: $\frac{41.15}{8} = 5.14$

2011: $\frac{40.25}{8} = 5.03$

2012: $\frac{40.25}{8} = 5.03$

Calculation of Fixed Deposit

2008: $\frac{25.2}{7} = 3.6$

2009: $\frac{27.75}{7} = 4$

2010: $\frac{38.15}{7} = 5.45$

2011: $\frac{38}{7} = 5.43$

2012: $\frac{38}{7} = 5.43$

Total deposit mean S.D (σ) = $\sqrt{\frac{\sum(X-X)^2}{N}} = \sqrt{\frac{3.088}{5}} = 0.786\%$

Correlation Coefficient and Coefficient of Determination of BOK

Relationship between Interest Rate and Deposit amount

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)	R2×R3	R4×R5
2008	3.34	6595.2	3.6	3703.1	22027.968	13331.16
2009	3.5	7260.3	4	4474.6	25411.05	17898.4
2010	5.14	6723.2	5.45	6383.6	34557.248	34790.62
2011	5.03	6607.6	5.43	7850.3	33236.228	42627.129
2012	5.03	8116.5	5.43	7646.3	40825.995	41519.409
Total	22.04	35302.8	23.91	30057.9	156058.489	150166.718

Correlation Coefficient $(r_{23}) = \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$= \frac{5\times156058.489 - 22.04\times35302.8}{6.40\times2907.275} = \frac{2218.733}{11769.50} = 0.1885$

$(\mathbf{r}^2_{23}) = (0.1885)^2 = 0.0355$

Correlation Coefficient $(\mathbf{r}_{23}) = \frac{5\times150166.718 - 23.91\times30057.9}{4.057\times8331.56}$

$= \frac{32149.20}{33801.15} = 0.9511$

$(\mathbf{r}^2_{45}) = (0.9511)^2 = 0.9046$

Calculation of Correlation Coefficient, Coefficient of Determination and Standard Deviation of BOK Relationship between Interest Rate and Lending amount

Sector	**2008**	**2009**	**2010**	**2011**	**2012**
Overdraft	13.5%	13.5%	16%	16%	16%
Export Credit	**10.5**	**12.5**	**14**	**14**	**13**
Import LC	12.5	12.5	13	13	14
HMG Bond	8	10	13	13	12
BG/CG	10.5	10.5	12	13	13

Other Guarantee	8.5	-	-	-	-
Industrial Loan	13	-	-	-	-
Commercial Loan	13.5	-	-	-	-
Priority Sector Loan	-	-	-	-	-
Working Capital	13.5	13.5	15	14	14.5
Hire Purchase	11	12	15	14	15
Others	13.5	13.5	16	15.5	16
Average Int. Rate (1)	11.64	12.25	14.25	14.063	14.187
Lending Amount (2)	12692.9	14894.7	16847.1	17247.8	18064.1
R1×R2	147745.36	182460	240071.17	242555.81	256275.38

Correlation Coefficient $(r_{23}) = \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$$= \frac{5\times1069107.72 - 66.39\times79746.60}{5.533\times9664.5871}$$

$$= \frac{51161.826}{53474.16} = 0.9568$$

$(\mathbf{r^2_{23}}) = (0.9568)^2 = 0.9155$

Interest rate S.D (σ) = $\sqrt{\frac{\sum(X-X)^2}{N}} = \sqrt{\frac{6.259}{5}} = 1.118\%$

Calculation of Mean and Standard Deviation of Deposit and Fixed Deposit of SCBL

Deposit	**2008**	**2009**	**2010**	**2011**	**2012**
Savings	2%	2%	3%	2%	2%
Fixed					
7 Days	-	-	-	-	-
14 Days	1	1	1.5	1.5	1.5
1 Month	1.5	1.5	1.75	1.75	1.75
2 Month	1.5	1.5	1.75	1.75	1.75
3 Months	1.5	1.5	1.75	1.75	1.75
6 Months	1.75	1.75	-	-	-
1 Year	2.5	2.5	10.25	10.25	10.25
Above 2 Years	3	3	11	11	11
Total Deposit	14.75	14.75	31	30	30
Total Fixed Deposit	12.75	12.75	28	28	28

Calculation of Whole Mean

Mean

2008: $\frac{14.75}{8} = 1.84$

2009: $\frac{14.75}{8} = 1.84$

2010: $\frac{31}{7} = 4.43$

2011: $\frac{30}{7} = 4.28$

2012: $\frac{30}{7} = 4.28$

Calculation of Fixed Deposit

2008: $\frac{12.75}{7} = 1.82$

2009: $\frac{12.75}{7} = 1.82$

2010: $\frac{28}{6} = 4.67$

2011: $\frac{28}{6} = 4.67$

2012: $\frac{28}{6} = 4.67$

Whole mean S.D (σ) = $\sqrt{\frac{\sum(X-X)^2}{N}} = \sqrt{\frac{7.458}{5}} = 1.49\%$

Correlation Coefficient and Coefficient of Determination of SCBL

Relationship between Interest Rate and Deposit Amount

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)	R2×R3	R4×R5
2008	1.84	17856	1.82	3301.1	32855.04	6008
2009	1.84	19187.7	1.82	7101.7	35305.37	12925.09
2010	4.43	12430	4.67	9175.1	55064.90	42847.72
2011	4.28	11619.8	4.67	10136.2	49732.74	47336.05
2012	4.28	15502.3	4.67	4623.3	66349.84	21590.811
Total	16.67	76595.80	17.65	34337.4	239307.89	130707.67

Correlation Coefficient $(r_{23}) = \dfrac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$$= \frac{5\times 239307.89 — 16.67\times 76595.80}{6.10\times 14742.32}$$

$$= \frac{-80316.98}{89928.15}$$

$$= -0.893$$

$(\mathbf{r^2_{23}}) = (-0.893)^2 = 0.7977$

Correlation Coefficient $(\mathbf{r_{23}}) = \dfrac{5\times 130707.67 - 17.65\times 34337.4}{6.98\times 13003.83}$

$$= \frac{653538.35 - 606055.11}{90766.72}$$

$$= \frac{47483.24}{9100.73}$$

$$= 0.523$$

$(\mathbf{r^2_{45}}) = (0.523)^2 = 0.2735$

Calculation of Correlation Coefficient, Coefficient of Determination, Standard Deviation and t-statistics of SCBL Relationship between Interest Rate and Lending amount

Sector	2008	2009	2010	2011	2012
Overdraft	6.5%	6.5%	-	-	-
Export Credit	**11.5**	**10**	**13**	**13**	**13.5**
Import LC	9	9	13	12	13
HMG Bond	8	8	13	13	12
BG/CG	9.5	9	13	13.5	13.5
Other Guarantee	11	11	13.5	13.5	13
Industrial Loan	11.5	11.5	-	-	-
Commercial Loan	11.5	-	-	-	-
Priority Sector Loan	-	-	-	-	-
Working Capital	10	10	13	13	13.5
Hire Purchase	9.5	-	-	-	-
Others	13	13	17.5	17.5	16
Average Int. Rate (1)	10.091	9.778	13.71	13.64	13.5
Lending Amount (2)	13355	13118.6	15932.2	17698.2	18376
R1×R2	134765.31	128273.6	218430.46	241403.45	248076

Correlation Coefficient $(r_{23}) = \dfrac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$$= \frac{5\times 970948.82 - 60.719\times 78480}{9.039\times 10809.77}$$

$$= \frac{89516.98}{97709.59}$$

$$= 0.916$$

$(\mathbf{r}^2_{23)} = (-0.916)^2 = 0.8393$

S.D (σ) = $\sqrt{\frac{\sum(X-X)^2}{N}}$ = $\sqrt{\frac{\mathbf{16.34}}{\mathbf{5}}}$ = 1.807%

For combined calculation

Saving Deposit Interest Rate

Sector/Year	2008	2009	2010	2011	2012
RBB Average	3.05	3.55	5.7	7	7
Nabil Average	4.28	5.58	7.75	8.25	5.33
BOK Average	3.34	3.5	5.14	5.03	5.03
SCBL Average	1.84	1.84	4.43	4.28	4.28
Average	3.26	3.62	5.76	6.14	5.41

Fixed Deposit Interest Rates

Sector/Year	2008	2009	2010	2011	2012
RBB Average	3.31	3.94	6.63	8.25	8.25
Nabil Average	5.29	6.30	8.7	9.3	6.65
BOK Average	3.6	4	5.45	5.43	5.43
SCBL Average	1.82	1.82	4.67	4.67	4.67
Average	3.51	4.012	6.36	6.91	6.25

Saving Deposit Amount

Sector/Year	2008	2009	2010	2011	2012
RBB	40213	46102.8	42826.9	38590	43823.4
Nabil	12160	14620.4	13783.6	14288.6	17994.8
BOK	6595.2	7260.3	6723.2	6607.6	8116.5
SCBL	17856	19187.7	12430	11619.8	15502.3
Total	76824.2	87171.2	75763.7	71106	85437

Fixed Deposit Amount

Sector/Year	2008	2009	2010	2011	2012
RBB	4479.8	3207.8	6539.2	14266.9	18010
Nabil	8464.1	8310.7	14711.1	16840.8	14044.9
BOK	3703.1	4474.6	6383.6	7850.3	7646.3
SCBL	3301.1	7101.7	9175.1	10136.2	4623.3
Total	19948.1	23094.8	36809	49094.20	44324.5

Calculation of Correlation Coefficient and Coefficient of Determination of Combined Relationship between Interest Rate and Deposit amount of Combined

Year (1)	Saving Deposit Interest Rate (2)	Saving Deposits Amounts (3)	Fixed Deposit Interest Rate (4)	Fixed Deposit Amounts (5)	R2×R3	R4×R5
2008	3.26	76824.2	3.51	19948.1	250446.89	70017.83
2009	3.62	87171.2	4.012	23094.8	315559.744	92656.34
2010	5.76	75763.7	6.36	36809	436398.9	234105.24
2011	6.14	71106	6.91	49094.20	436590.84	339240.92
2012	5.41	85437	6.25	44324.5	462214.17	277028.13
Total	24.19	396302.1	27.042	173270.6	1901210.544	1013048.46

Correlation Coefficient $(r_{23}) = \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$$= \frac{5\times1901210.544 - 24.19\times396302.1}{5.85 \times 30445.64}$$

$$= \frac{80495.08}{178106.99}$$

$$= -0.4519$$

$(\mathbf{r^2_{23}}) = (-0.4519)^2 = 0.2024$

Correlation Coefficient $(\mathbf{r_{45}}) = \frac{5\times1013048.46 - 27.042\times173270.6}{6.8133\times57295.75}$

$$= \frac{379485.44}{390373.126}$$

$$= 0.9721$$

$(\mathbf{r^2_{45}}) = (0.9721)^2 = 0.945$

Lending Rates

Sector/Year	2008	2009	2010	2011	2012
RBB	8.87	9.36	11.47	12.22	10.53
Nabil	10.17	11.9	15	15	14.8
BOK	11.64	12.25	14.25	14.063	14.187
SCBL	10.091	9.776	13.71	13.64	13.5
Average	10.17	10.82	13.61	13.73	13.25

Lending Amount

Sector/Year	2008	2009	2010	2011	2012
RBB	27353.6	31464.1	35616.6	36792.2	40346.2
Nabil	21514.6	27816.6	32902.8	38765.6	42731.7
BOK	12692.9	14894.7	16847.1	17247.8	18064.1
SCBL	13355	13118.6	15932.2	17698.2	18376
Total	74916.1	87294	101298.7	110503.8	119518

Calculation of Correlation Coefficient and Coefficient of Determination of Combined Relationship between Interest Rate and Lending Amount

Year (1)	Average Interest Rate (2)	Lending Amount (3)	R2×R3 (4)
2008	10.17	74916.1	761896.74
2009	10.82	87294	944521.08
2010	13.61	101298.7	1378675.31
2011	13.73	110503.8	1517217.17
2012	13.25	119518	1583613.50
Total	61.58	493530.6	6185923.8

Correlation Coefficient $(r_{23}) = \frac{n\sum X_1X_2 - \sum X_1 \sum X_2}{\sqrt{n\sum X_1^2 - (\sum X_1)^2}\sqrt{n\sum X_2^2 - (\sum X_2)^2}}$

$= \frac{5\times 6185923.8 - 61.58\times 493530.6}{10.6454\times 79851.19} = \frac{538004.652}{850047.858} = 0.6329$

Coefficient of Determination $(r^2_{12}) = (0.6329)^2 = 0.40$