

CHAPTER -I

INTRODUCTION

1.1 General Background

Nepal is an economically poor country, lying on the lap of the Himalayan, and surrounded by two strong countries, China and India, is situated at the southern part of the Asian Continent. Economic growth rate since seven years is decreasing i.e. 6.2% in 2000 to 3.2% in 2007. Population is growing very rapidly (1.7% in 2007) and per capital income is \$387, which is very low as compared to other SAARC countries. But the rate of inflation is about 11.03% (July 2008). So, the people have negative return from bank deposits. Income distribution is also uneven. About 31% of people are still living below the poverty line. The main occupation of Nepalese people is agriculture but this sector's contribution to GDP is only 40% and that of non-agriculture sector is about 60%. About 80% people are dependent upon agriculture. Farmers are using traditional technology in farming. Farmers are facing the irrigation problem and have to depend on rainfall. 40% people are unemployed and it is a key problem of Nepal which is leading the youths towards frustration, social crimes, violence and even foreign migration. People engaged in agriculture are also semi-employed. They have seasonal work only. Although Nepal is rich in natural resources, such resources are being remained unutilized. Even though the country is the second richest country in water resource in the world, whole nation is being suffering from power cut of 16 hours per day in spite of being the large potential of water electricity production. Human resource, the developing pillar of nation is going abroad for employment which results an increase in outflow of nation's wealth. Potentiality of mining is also sleeping underground.

The living standard of the people of any country to large extent is determined by the economic development of that country. Being the people of poor country, the living standard of the Nepalese people is also low. The basic function of the economy is to allocate scarce resources to produce goods and services demanded by the society (Rose, 2003: 3)¹. The production of goods and services require the transformation of resources like land, labor, capital, technology, managerial skills and information. Among these resources capital is considered as the most important and is known as the lifeblood of business for the production of goods and services. Among the three sectors of the economy (i.e. households, business and government), business sector produces goods and services, which helps in economic development. Household sector (individuals and family) saves the money, which can be used as capital for business sector. Without adequate capital business sector could not foster and hence economic development become difficult. So, the capital mobilization is necessary to develop the economy and to raise the living standard. The role of financial intermediaries is vital for the economic development because they collect scattered funds from savers and provide that to productive use.

Now the world has become a global village but even there exist barter system in the rural areas of Nepal. Development of economy is very difficult unless it is monetized and banking and finance companies play major role to monetize the economy. Banking and finance companies in Nepal, as an organized sector for capital mobilization, was started after the advent of Nepal Bank Limited in 1994 B.S. as a joint venture between government and private sector under Nepal Bank Act., 1994. It was the pioneer institution of modern banking system. Before that “Tejarath Adda” was fulfilling the banking need of the people, to some extent, by providing loan on security. Nepal Rastra Bank was

established on 14th Baishak 2013 B.S. under Nepal Rastra Bank Act 2012 to monetize the economy and to avoid the dual monetary system. Nepal Rastra Bank is the central bank which formulates monetary and fiscal policies to strengthen and develop the financial system. Integrated and speedy development of the country is possible only when competitive banking service reaches nooks and corners of the country. Keeping this in mind, government set-up Rastriya Banijya Bank (RBB) in B.S. 2022 as a fully government owned commercial bank under commercial bank act, 2021. Similarly, Agriculture Development Bank (ADB) was established in 2024 B.S. to provide finance for agricultural produces so that agricultural productivity could be enhanced by introducing modern agriculture techniques. Moreover, security exchange centre was established in 1976 to enhance capital market activities. Security Exchange centre was renamed Nepal Stock Exchange (NEPSE) in 1993. NEPSE opened its trading floor on 13 January 1994. With the establishment of RBB and ADB, banking service spread to both the urban and rural areas. NRB also gave incentive to NBL to expand their branches to rural areas. This helped the common people to reduce their burden of paying higher rate of interest to money lenders and absolved them from kowtowing before money lenders. It is natural expectations of customers keep on increasing. Once they got banking services, they were expecting improvement and efficiency. However, excess political and bureaucratic interference and absence of modern managerial concept in these institutions was hurdle in this regard. Banking service to the satisfaction of customers was a far cry. The inception of Nepal Arab Bank limited (renamed as Nabil Bank Limited since 1st January 2002) in 2041 B.S. (1984 A.D.) as a first joint venture bank proved to be a milestone in the history of banking. Nabil Bank gave a new ray of hope to the sluggish financial sector. Nabil launched its operation with a marketing concept i.e. customer is the king in the market. Nabil started knocking the doors of customer breaking the then trend

of knocking the door of a bank by a customer. The very marketing concept of Nabil forced the bank in operation to be more customers oriented and led the influx of commercial banks (Bhuvan Dahal & Sarita Dahal, 2002:12)² Having observed the success of Nabil based on marketing concept and also because of liberal economic policy adopted by the successive governments, various commercial banks, development banks, finance companies, insurance companies emerged to provide banking facilities to the public. Till mid-July 2008 as per the NRB data there are 25 commercial banks, 58 development banks, 5 rural development banks, 78 finance companies, 12 micro credit development banks, 16 saving and credit co-operative societies, and 46 non-government organizations (NGOs) are in operation taking license from NRB. These different institutions collect money from public in different forms and invest in different sectors in different forms. These organizations charge a certain percentage of interest to the borrower and borrower has to pay that interest for using banks' money. Interest rate on loan also varies according to the nature of loan, whether loan is of short term or long term. An appropriate interest rate structure greatly affects the collection of deposit, mobilization of saving (only in productive sector) and profit position of any financial institution, which in turn, affects the economic upliftment of the whole country. So, interest rate is crucial in survival and development of financial institution.

1.1.1 General Concept of Interest Rate and Treasury Bill

Interest Rate

Interest is the payment made for the use of money. The interest rate is the amount of the interest paid per unit of time expressed as a percentage of the amount borrowed. When we examine how money affects economic activity, we will focus on the interest rate, which is often called "The price of money". The cost of borrowing, measured in rupee per year per rupee borrowed, is the interest rate (Samuelson & Nordhus, 2000: 469)³. Banking and

Finance Companies as financial intermediaries collect money from savers in the form of deposit and provide that for business sector in the form of loan. These institutions pay the interest to the depositors for the money borrowed from them and charged interest from the borrowers for money lended to them.

The quality and flow of investment determines the income in the economy because investment is function of interest rate. Therefore, the impact of interest rate is on both the saving and investment in the economy. Further the borrowings and savings are always influenced by the interest rates. The cost of production which depends upon the production function is influenced by the interest rate, since the credit is also one of the components of production process. The saving in investment in the economy which are influenced by the interest rates are the real economic variables.

Interest rate should be changed from time to time in accordance with the conditions of demand and supply of capital. Although interest rate is influenced by various factors, the main factors which determine the interest rate are demand for and supply of loanable fund. If supply increases and demand remains constant, interest rates in the market decrease. Similarly if demand for loanable fund increases and supply remain constant, interest rates in market increase. But Nepalese economy has not developed up to that level so that free market can determine the interest rates. Nepal Rastra Bank as a guardian fixes the terms and conditions regarding the interest and other activities of Banking and Finance companies in Nepal. But in recent years, banks and finance companies are permitted to fix the interest rate they charge and offer on loan and deposit. Interest rate in the free market economy is determined by the free interplay of the demand and supply forces.

Treasury Bill

It is a short-term government bond, which helps to reduce deficit budget or meeting outstanding obligation. It is normally issued with maturity in 91 days. It is issued in the basis of auction. Individuals and intuitions can invest in Treasury bills. Treasury bills are issued on discount basis. The face value of the Treasury bill is refunded to the holder after its fixed maturity period. It is normally taxable. Treasury bills are marketability in character which can be kept as security and take loan. The holder of Treasury bill is used as collateral for taking loans. Treasury bills are issued to meet short-term financial requirement of government. New Treasury bills replace matured obligation of old Treasury bills. Nepal government initiated the process of selling Treasury bills to banks, financial institutions and individuals through an auction process since fiscal year 1988/89. Every year, Nepal government is calling huge amount of Treasury bills.

1.1.2 Brief History of Interest Rate in Nepal

While observing the historical background of the interest rate structure of Nepal, frequent changes can be noticed. On April 13, 1965 the interest on deposits was increased by one percentage which prevailed to August 30, 1966. Similarly other two categories of fixed deposits 3 to 5 years and above five years were created and interest rate on these two types of deposits was 5% and 6% respectively. On August 31, 1966, the interest rate on all types of deposit was increased approximately by one percentage. The interest rate structure was again revised on April 14, 1971. The rate of interest on saving deposits was raised to 5% (increased by 0.5 percentage) but the rate of interest on 3 months and 6 months fixed deposit were reduced. However, the rate on fixed deposits having the maturities of more than one year was raised varying by 1 to 1.75 percentage. Another change in interest rate structure was introduced on July 16, 1974. The interest rate on

saving deposits was fixed at 6.5 percentage; fixed deposits of three and six months maturities were kept constant and interest rate on all other categories of fixed deposits were raised by two percentage.

The lending rates of commercial banks were also revised respectively. The lending rates were lowered in some cases, however, the loan from unproductive purposes were made costlier by two percentage points. Giving different justifications, NRB issued directives to the Banks and Finance Companies to apply new interest rates from April 18, 1975, which was a drastic change. The interest rate was increased from 6.5 percent to 8 percent on saving deposits and that on fixed deposits of 3 months and 6 months were increased to 4 percent and 10 percent respectively. The interest rate on one-year deposit was increased from 9.5 percent to 16 percent. Prior to the revision, there were nine different categories of lending carrying the interest rate between 8 to 15 percent. But the revision categorized the loan only in two categories i.e. 15 percent interest rate was applicable to all the loans to small sectors, agriculture sector and industry, export credit and credit against development bonds whereas 18 percent minimum rate was fixed for other purposes. On February 12, 1977, NRB revised interest rate again. The rate offered on savings and three month fixed deposits was lowered to 9 percent (by one percentage point). But the interest rate on one year fixed deposits was lowered by two percentage point to 12 percent and that on two years and above fixed deposit was also declined by two percentage point. Next amendment in interest rate was made on 15 June 1982, and the interest rate on all types of deposits was increased by one percentage point. NRB authorized the Banks and other Finance Companies to charge an additional 2.5 percent interest above the specific rate on all over due loans and minimum of 17 percent interest rate on misutilized loan to agriculture, industry and service sectors. A provision of one percent rebate for timely

repayments was also made. NRB further revised the interest rate on August 17, 1982, which was a slight change on lending rate only. Giving right in offering the interest rate on saving and time deposit to the extent of 1.5 percent and 1 percent respectively above prevailing rate, NRB issued direction to the commercial banks.

On May 29, 1986, Banking and Finance companies were given freedom to fix the interest rate on deposits and loans. But the higher and lower limit was fixed by NRB. The minimum of 8.5 percent interest rate was fixed for saving deposits. The rate on fixed deposits of less than one year's maturity needed to be at least not less than the rate on saving deposits. Minimum of 12 percent interest rate was fixed on one year fixed deposits. Banking and Finance companies were given freedom to fix lending rate subject to a minimum of 15 percent for the priority sector. The interest rate on more than one year's fixed deposits could be fixed by the banks themselves but that ought to be higher than the rate on one year fixed deposit. Banking and Finance companies were granted complete freedom in determining their own deposit and lending rates on August 31, 1989. They had also been given complete freedom to make rules and working procedures about the kinds of deposits, time period of deposits, repayment conditions, penal interest rates and interest capitalization on over due loans. Since then NRB has not administered and regulated interest rate. Monetary management has been conducted through open market operation. However, on August 22, 1992, NRB issued some directives to Banks and Finance companies to clearly spell out the interest on deposits of at least up to one year, not to create the range of percentage in interest rates on credit of same type and purposes and to stop fixing the interest rate on flat basis. In addition to this NRB also instructed the Banking and Finance companies to limit their interest rate on deposit and credit at 6 percent within the mid-December 1993. Then after, NRB has not regulated interest

directly but has given instructions in time to time regarding the interest rate and terms and conditions of lending and keeping accounts.

The interest rate structure in the beginning was purely central bank's concern. But considering need of the country, NRB took flexible approach in making some adjustments in interest rates by putting contrast on it. However, the impact of economic liberalization in developing countries as a result of financial globalization began to influence Nepal. This ultimately brought deregulation in interest rate by leaving the interest rate to be determined by market forces.

1.1.3 Focus of the Study

The main focus of this study is to examine the influencing factors of interest rate in Nepalese Banking & Finance companies taking eleven organizations as sample covering five commercial banks, one development bank and five finance companies. All of these sample organizations in Nepal are profit motivated. Interest rate is believed as one of the most important factors for the development of Banking and Finance companies and financial system as a whole. This study attempts to analyze the different factors that affect the interest rate of listed Nepalese Banking and Finance companies. This study is also concentrated on whether the theories on interest rate founded by various economists match in Nepalese context or not. Since interest rate is the main concern of every individual who saves (deposits) and borrows money, it is important to study about interest rate. Therefore, this study focuses on the interest rate of different commercial banks, development banks, finance companies and the central bank's role regarding interest rate.

1.2 Statement of the Problem

Interest has direct relation with economic growth and development. According to economic theory (other things remaining constant), low interest rate is impute for high investment. And this high investment leads to high production, high employment, more income and ultimately growth in economy. So, this study explores; does decline in interest rate increases the lending activities? Or what is the actual condition in this regard in Nepalese financial market place?

Over the past 20 years, Nepal's financial sector has become deeper and the number and type of financial intermediaries have grown rapidly. In addition, recent reforms have made banks more stable. Still, access to financial services remains limited for many people in many parts of Nepal. The findings of 2006, access to financial services survey- conducted by the World Bank and Total Management Service in cooperation with Solutions Consultant confirm that use of bank is limited, financial NGOs and cooperatives play a large role in providing both deposit accounts and loans, and informal borrowing for exceeds formal borrowing. Only 26% of Nepalese households have a bank account, and banks' procedures are perceived as being the most cumbersome among financial institutions. Financial NGOs and cooperatives are the second largest provider of deposit accounts, serving 18% of households. Micro-finance and regional rural development banks are a distant third provider of deposit accounts, serving only 4% of households- mainly poor rural ones. About 38% of Nepalese households have an outstanding loan exclusively from the informal sector, 16% from both the informal and formal sector, and 15% from only formal sector (i.e. banks, finance company, financial NGO or cooperative, microfinance or rural regional development bank). Family and friends are by far the largest informal providers of loans to households.

(www.worldbank.org/nepal)⁴. From above data, it is clear that, people are less aware about banking system. Financial intermediaries are insufficient to mobilize the saving of the country. Some established such institutions are also city based. Small portion of saving is also not utilized in productive sectors like hydro-power and infrastructure development rather than spending in construction of houses, luxurious goods, ornaments etc. Nepali banking industry still doesn't have the capacity to manage the required volume of investments. If the country received four or five major hydro and road projects, the deposit mobilization of the banking sector would fall short of what is required. The current financial potential of the banking sector is still not large enough to tap the country's economic potential. (Kathmandu Post, 2008:4)⁵. What the rate of interest can do in this situation?, is the matter of concern of this study.

After the liberalization and steadfast globalization, the world is once again dragged into the financial crisis that has something to develop into the worst economic crisis. The current financial crisis originated from USA. Sub prime lending behavior of the US is the root cause of the current crisis. The hard hit countries were those which have large exposure to the external banking system. Iceland and Hungary are good examples of how dysfunctional and imperfect financial sector has hit the countries whose financial sectors have been maintaining large expose to overseas banks. Focusing on the Nepalese context, Nepali financial market is not yet integrated with the global financial market; the crisis has no explicit impact on the domestic economy. However, several domestic sectors might have been implicitly affected. Economic slowdown and the rising unemployment in the US, EU and other countries where the spill over effect of the current crisis have been observed may have adverse impact on the external front of economics like Nepal. Reduced external demand of the importing countries together with the rising price level

and unemployment and there by, the inflows of remittances, grant for the least developed countries, foreign direct investment and number of tourist arrivals into the country.

Despite of economic crisis; the growth of the third countries export increased by 53%.

Likewise, foreign employment has shown an increment of 14.9%. Remittance in recent years have become a pivot of Nepalese economy and witnessed 17% share in GDP in 2007/08. The inflows on remittance registered a record growth of 81% in the first three months of 2008/09. However, dismal financial performance and there by the inclination towards global recession could trigger financial turmoil in our economy also if corrective measures are not taken in time. Nepal is, moreover, suffering from its own internal disturbances. The ailing labor disputes, increasing energy crisis and loan shedding, credit concentration on the unproductive sector such as real estate and margin lending are the attributes which can put the economy at risk. What is the impact of economic recession on interest rate charged and offered by Nepalese Banking and finance companies is the matter of concern of this study.

Viewed from the liquidity aspect, Nepalese financial market is considered fairly safe.

Recent movements of Treasury Bills rates at appropriate level, over-subscriptions on the T-Bill biddings by about 3-4 folds in the recent period and increase in the net foreign assets reveals a comfortable liquidity situation in the economy. However, Nepalese financial sector, on the current ground of increasing inter-bank transaction rate as well as the Treasury bills rate respectively to about 5% to 6% together with the anticipated crunch in the foreign exchange inflows may therefore, require a cautions watch on the liquidity management in future.

Moreover, high inflation rate of about 11.03% (July 2008) and interest rigidity with low deposit interest rates ranging from 2-6.5% due mainly to the poor investment friendly environment have created hurdles for the resource mobilization on the productive sectors. In order to break the deadlock between the anticipated liquidity scarce and the low interest rates, a huge capital investment from the government is desirable. The current slow growth trend in development expenditure of the government and consequently expected low investment initiative from the private sector is a matter of grave concern as it gives an unhealthy signal of under-capacity utilization of financial resources, which would prove detrimental to the growth of the economy in the future. This study explores; is there any positive relation of interest rate and inflation as per theory? Similarly, high interest rate is stimulus for high savings (deposits) but this may not be the case in real world as people use to deposit more even in less interest rate due to security, convenience and other reasons. Thus this thesis tries to find out what is the relation of deposit and interest rate?

Bankers and other financial institutions use various methods of interest calculation.

Correspondingly, true effective rate also differs. Therefore the researcher analyzes that what factors affect interest rate and what are the methods used in interest calculation. More specifically, this study is an attempt to answer the following questions:

- i. Is the interest rate charged and offered by Nepalese Banking and Financial sector affected by inflation? If so to what extent?
- ii. What are the major qualitative factors that shape the interest rate of Nepalese Banking and Finance company?
- iii. What is the impact of economic recession on interest rate charged and offered by Nepalese Banking and Finance company?

1.3 Objectives of the Study

The major objective of the study is to identify the factors of interest rate charged and offered by Nepalese Banking and Financial institutions through examination of the relationship between influencing factors and interest rate. To fulfill this objective following sub-objectives have been formulated.

- i. To identify whether there is any correlation between interest rate of lending and interest rate of deposit.
- ii. To identify the effect of inflation on interest rate charged and offered by sample Nepalese Banking and Financial institutions.
- iii. To identify the other major factors determining the interest rate charged and provided by listed Nepalese Banking and Financial institutions.
- iv. To show the effect of economic recession on interest rate charged and offered by listed Nepalese Banking and Financial institutions.

1.4 Significance of the Study

Interest rate sends price signals to borrowers, lenders, savers and investors. For example, higher interest rates generally bring forth a greater volume of savings and stimulate the lending of funds. Lower rates of interest on the other hand, tend to dampen the flow of savings and reduce lending activities. Higher interest rates tend to reduce the volume of borrowing and lower rates stimulate borrowing and investment spending. Hence economic growth depends upon circulation of money and financial system facilitates it.

Any study in this sector will be helpful for several stakeholders. Researcher believed that following institution and individual will be benefited from the study:

- i. Individual who will carry out further research work on any topic related to interest rate.

- ii. Individuals who have keen interest in Nepalese economy and banking sector.
- iii. Investors, depositors, borrowers and others who are directly and indirectly involved on financial market.
- iv. Students, teachers, managers, policymakers, bankers etc.

1.5 Research Hypothesis

Testing of hypothesis is one of the most important aspects of the research study. A quantitative statement about the population parameter is called a hypothesis. In other words, it is an assumption that is made about the population parameter and then its validity is tested. By testing the hypothesis we can find out whether it deserves the acceptance or rejection of the hypothesis. The acceptance of hypothesis means there is no sufficient evidence provided by the sample to reject it and does not necessarily imply that it is true. The main goal of testing of hypothesis is to test the characteristics of hypothesized population parameter base on sample information whether the difference between the population parameter and sample statistic is significant or not (Sharma & Chaudhary, 2000: 229)⁶.

To test whether the assumption or hypothesis is right or not or the hypothesized value or test is significantly different or indifferent. Smaller difference, the sample mean is close to the hypothesized value and larger the difference the hypothesized value has low chance to be correct. The objective of the hypothesis testing is not to question about the computed value of sample statistic, but the difference between the sample statistic and population parameter.

Null Hypothesis: The assumption or hypothesis is set that there is no significant difference between the sample mean and the population mean is called “null hypothesis”.

It is also called hypothesis of no difference and denoted by $H_0: \rho = 0$.

Alternative Hypothesis: Contrary of the null hypothesis, if there is significant difference between the sample mean and population mean or null hypothesis is rejected it is called alternative hypothesis. It is also called hypothesis of difference and denoted by $H_1: \rho \neq 0$.

The hypotheses formulated for this study are as follows:

1. First hypothesis is related to the significance of the correlation coefficient between liquidity (supply of deposits) and interest rate.

Null Hypothesis: $H_0: \rho = 0$, i.e. population correlation coefficient is zero. In other words, the variables (amount deposited and interest rates) in Nepalese Banking & Finance companies are not correlated.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. population correlation coefficient is not equal to zero. In other words, the variables in population (amount deposited and market interest rates) on deposit are correlated.

2. Second hypothesis is related to the significance of the correlation coefficient between loan demand (amount loaned) and lending rate.

Null Hypothesis: $H_0: \rho = 0$ i.e. population correlation coefficient is zero, which means that the variables in population (amount loaned and lending rates) in Nepalese Banking & Finance companies are not correlated.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. population correlation coefficient is not equal to zero. In other words, amount loaned and lending rates in Nepalese Banking & Finance companies are correlated.

3. Third hypothesis is related to the test of significance of the correlation coefficient between interest rate on deposit and lending.

Null Hypothesis: $H_0: \rho = 0$ i.e. there does not exist any correlation between interest rate on deposit and lending in Nepalese Banking & Finance companies.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. there exist correlation between interest rate on deposit and lending in Nepalese Banking & Finance companies.

4. Fourth hypothesis is related to the test of significance of the correlation coefficient between inflation rate and interest rate on deposit and lending.

Null hypothesis: $H_0: \rho = 0$ i.e. population correlation coefficient is zero which means that the variables in population (inflation rate and interest rate on deposit) in Nepalese Banking & Finance companies are not correlated.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. population correlation coefficient between inflation and interest rate on deposit in Nepalese Banking & Finance companies are correlated.

5. Fifth hypothesis is related to the test of significant of the correlation coefficient between inflation and lending rate.

Null Hypothesis: $H_0: \rho = 0$ i.e. population correlation coefficient is zero which means that variables in population (inflation and lending rate) in Nepalese Banking and Finance companies are not correlated.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. population correlation coefficient is not equal to zero that means variables in population (inflation and lending rate) in Nepalese Banking & Finance companies are correlated.

6. Sixth hypothesis is related to the test significance of the correlation coefficient between interest rate and risk-free rate of interest.

Null Hypothesis: $H_0: \rho = 0$ i.e. the interest rate on deposit and risk-free-rate of interest in Nepalese Banking & Finance Companies are not correlated.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. the interest rate on deposit and risk-free rate of interest in Nepalese Banking & Finance Companies are correlated.

Null Hypothesis: $H_0: \rho = 0$ i.e. the interest rate on lending and risk-free-rate of interest in Nepalese Banking & Finance Companies are not correlated.

Alternative Hypothesis: $H_1: \rho \neq 0$ i.e. the interest rate on lending and risk-free rate of interest in Nepalese Banking & Finance Companies are correlated.

1.6 Limitation of the Study

- i. It is quite impossible to cover all factors and aspects that are directly and indirectly responsible for determining interest.
- ii. The main objective of this study is to fulfill partial requirement of Master Degree. Stipulated time and resources are also limitation of this study.
- iii. Reliability of this study depends upon the accuracy of published data and the genuineness of respondent.
- iv. Only sample organizations listed in Nepal Stock Exchange till mid-July 2008 are selected in the bracket of studies and the samples have been drawn at random for convenience. So, there may exist some sampling error.

1.7 Organization of the Study

This study is divided in five chapters. Chapter one is the introduction which contains General Background, General concept of Interest rates and Treasury bills, Brief History

of Interest rate in Nepal, Focus of the study, Statement of the problem, Objectives of the study, Significance of the study, Research Hypothesis, Limitation of the study and Organization of the study.

Prior to the body of the thesis several pages of preliminary material such as Declaration, Recommendation, Viva-Voice Sheet, Acknowledgement, Abbreviations, Table of contents, List of Table, List of figure etc have been presented.

Chapter two is Review of Literature which consists of the review from books, journals and thesis.

Chapter three is Research Methodology and it contains Research Design, Variables, Population, Sample, Sources and Nature of Data, Data Collection Procedure, Data Processing & Presentation and Data Analysis Tools.

Chapter Four is Presentation and Analysis which contains Presentation of Data in various ways and its interpretation.

Last chapter is the Summary, Conclusion and Recommendations. Bibliography and Appendices are presented as supplementary materials.

Endnote:

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CHAPTER - II

LITERATURE REVIEW

2.1 Introduction

Review of literature means reviewing research studies or other relevant propositions in the related area of the study so that all the past studies, their conclusions and deficiencies may be known and further research can be conducted. It is an integral and a mandatory process in research works. In fact, review of literature begins with a search for a suitable topic and continues throughout the duration of the research work. It deals with a literature survey of the existing volumes of similar subjects.

The main rationale for a full review of research in past is to know the outcomes of those investigations in areas where similar concepts and methodology had been used successfully. It is also a way to avoid investigation problems that have already been definitely answered. Thus, literature review is the process of locating, obtaining, reading and evaluating the research literature in the area of student's interest (Joshi, 2001: 107)¹.

The literature survey provides the students with the knowledge of the status of their field of research. The primary purpose of literature review is to learn not to accumulate. It enables the researcher to know the following aspects:-

- What research has been conducted in the subject?
- What others have written about the topic?
- What theories have been advanced?
- The approach taken by the other researchers.
- Areas of agreement or disagreement.

- Whether there are gaps that can fill through the proposed research (Howard & Panta, 2005: 34)².

2.2 Theoretical Review

2.2.1 Meaning of Interest

Interest is the amount paid by a borrower to a lender above the amount (the principal) that has been borrowed. The original amount lent is called the principal, and the percentage of the principal which must be paid annually as interest is called the interest rate.

Conceptually, interest is both a payment and receipt for the use of money. Interest, therefore, can be considered from the above two points. If the interest is paid, it can be considered as a 'cost'. On the other hand, if interest is received, it can be considered as a 'return'. Since, money can earn a return over a period of time, interest rates are often considered as an expression of the time value of money. 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 cost of borrowing divided by the amount of money actually borrowed, usually expressed on an annual percentage basis.

Various economists have defined interest differently. According to Carver, "Interest is the income which goes to the owner of capital." According to Mills, "Interest is the remuneration for more abstinence." Similarly, According to Prof. Seligman, "Interest is the return for the fund of capital." Further, According to J.M Keynes, "Interest is the reward for parting with liquidity." Though there is different definition of interest but in ordinary sense interest is regarded as a payment made for the use of capital (Parajuli, 2005)³.

According to classical economists, it is only by postponing consumption that capital can be created. Since to abstain consumption is disagreeable and painful, for this the lender is paid a reward in the form of interest. Where people abstain consumption they save and thus interest becomes the reward for saving. Saving, however doesn't involve sacrifice of abstinence on the path of rich. To avoid the fallacy, Marshall substituted the word 'waiting' for abstinence and thus interest is than rewarded for waiting.

The neo-classical economists, however, defines 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 for saving, for the foregoing of liquidity and the supply of money.

Interest rate is one of the crucial indicators of financial as well as economic system of the country. Interest rates send price signals to borrowers, lenders, savers and investors. For example, higher interest rate generally brings forth a greater volume of saving and stimulates the lending of funds. Lower rate of interest on the other hand tends to dampen the flow of saving and reduce lending activity. Higher interest rate tends to reduce the volume of borrowing and capital investment and lower interest rates stimulate borrowing and investment spending.

2.2.2 Different Types of Interest Rates

There are different types of Interest Rates in the economy which is mentioned as follows:

- **Mortgage Interest Rate-** The rate on loans to buy fixed assets.
- **Saving Deposit Interest Rate-** The rate people get on their saving deposits at banks.

- **Treasury bill Rate**- The interest rate the government pays when it borrows money from people for a year or less.
- **Federal Funds Rate**- The interest rate the banks charge each other on very short loans.
- **Real Interest Rate**- The interest rate minus the expected rate of inflation; it adjust the nominal interest rate for inflation.
- **Nominal Interest Rate**- The interest uncorrected for inflation.

2.2.3 Functions of the Interest Rate in the Economy

The interest rate performs various important functions in the economy. Some of them are as follows:

- It helps guarantee that current savings will flow into investment to promote economic growth.
- It rations the available supply of credit, generally providing loanable funds to those investment projects with the highest expected returns.
- It brings into balance the supply of money with the public's demand for money.
- It is also an important tool of government policy through its influence on the volume of saving and investment. If the economy is growing too slowly and unemployment is rising, the government can use this tool to lower interest rates in order to stimulate borrowing and investment. On the other hand, an economy experiencing rapid inflation has traditionally called for a government policy of higher interest rates to slow both borrowing and spending and encourage more savings (Rose, 2003: 113)⁴.

2.2.4 Theories of Interest Rates

Various interest rate theories have been propounded by various economists, which describe how interest rate is determined in various situations. There are numerous interest rates in financial market. Such type of differences exists due to the risk premium associated with the issuer. Even securities issued by the same borrowers often carry a variety of interest rates. In this section, we focus upon those basic forces that influence the level of different interest rates.

To uncover these basic rate-determination forces, however, we must make a simplifying assumption. We assume in this chapter that there is one fundamental interest rate in the economy known as the pure or real rate of interest, which is the component of all interest rates. The closest approximation of this pure rate in the real world is the market yield on the government bonds minus inflation. The rate of interest on Treasury bond is called risk free rate of interest, which consists of real rate of interest plus premium for inflation. It is a rate of return presenting no risk of financial loss to the investor and representing the opportunity cost of holding idle cash, because the investor can always invest in no risk bonds and earn this minimum rate of return. Once pure rate of interest is determined, all other interest rates may be determined from it by examining the expected future inflation and special characteristics of the securities issued by individual borrowers. For example, only the government can borrow at risk-free interest rate; other borrowers pay higher rates that due to the greater risk of loss attached to their securities. Difference in liquidity, marketability, and maturity are other important factors causing interest rate to differ from the pure or risk free rates (Rose, 1997:193)⁵.

2.2.4.1 The Classical Theories of Interest Rates

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

Savings by Households: Generally, most of the savings in modern industrialized economics is carried out by individuals and families. For these households, saving is simply abstinence from consumption spending. Current savings therefore are equal to the difference between current income and current consumption expenditures. In making the decision on the timing and amount of saving to be done, households typically consider several factors: the size of current and long term income, the desired savings target and the desired proportion of income to be set aside in the form of savings. Generally, the volume of household saving rises with income. Higher income families and individuals tend to save more and consume less relative to their total income than families with lower incomes. Although income levels probably dominate saving decisions, interest rates also play an important role. Interest rates affect an individual's choice between current consumption and saving for future consumption. The classical theory of interest assumes that individuals have a definite time preference for current over future consumption. A rational individual, it is assumed, will always prefer current enjoyment of goods and services over future enjoyment. Therefore, the only way to encourage an individual or family to consume less now and save more is to offer a higher rate of interest on current savings. The classical theory considers the payment of interest a reward for *waiting*-- the

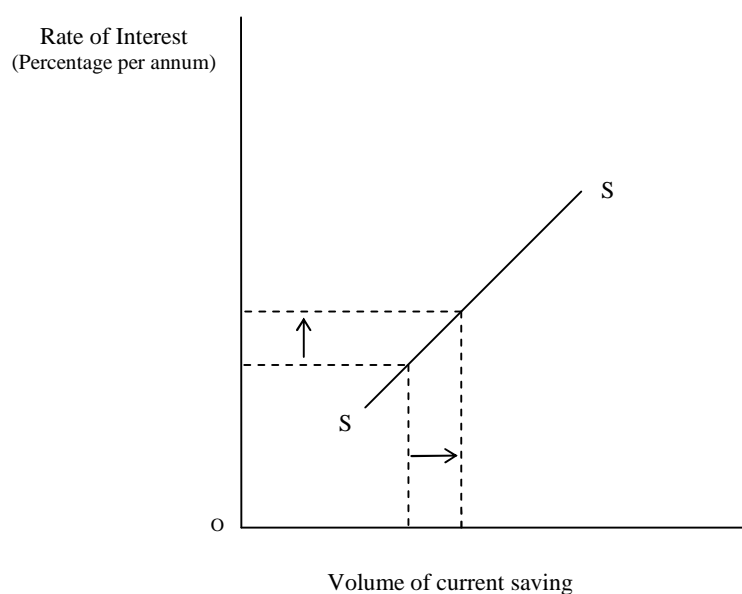
postponement of current consumption in favor of greater future consumption. Higher interest rate increase the attractiveness of saving relative to consumption spending, encouraging more individuals to substitute current saving for some quantity of current consumption. This is called Substitution Effect. There is a positive relationship between interest rates and the volume of savings. Higher interest rates bring forth a greater volume of current savings.

Saving by Business Firms: Not only households but also business saves money in the form of retained earnings which supplies most of the money for annual investment spending by business firms. The volume of business saving depends on two key factors: the level of business profits and the dividend policies of corporations. The critical element in determining the amount of business savings is the level of business profits. If profits are expected to rise, businesses retain the major part of the profits and borrow less from money and capital market. The result is a reduction in the demand for credit and a tendency toward lower interest rates. On the other hand, when profits fall but firms do not cut back on their investment plans, they are forced to make heavier use of money and capital markets for investment funds. The demand for credit rises and interest rates may rise as well. Although the principal determinant of business saving is profits, interest rates also play a role in the decision of what proportion of current operating cost and long-term investment expenditures should be financed internally and what proportion externally. Higher interest rates in the money and capital markets typically encourage firms to use internally generated funds more heavily in financing projects. Conversely, lower interest rates encourage greater use of external funds from the money and capital markets.

Saving by Government: Governments also save, though less frequently than households and businesses. In fact, most government saving (i.e. a budget surplus) appears to be unintended saving that arises when government receipts unexpectedly exceed the actual amount of expenditures. Income flows in the economy (out of which government tax revenues arise) and the pacing of government spending programs are the dominant factors affecting government savings. The total supply of funds is sum of above three elements as SS on figure 2.1

Figure 2.1

The Substitution Effect Relating Savings and Interest Rates



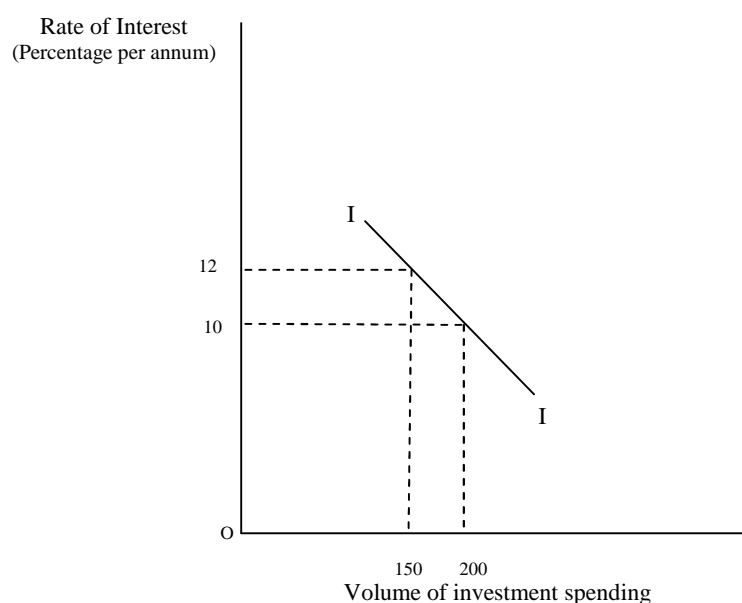
The Demand for Investment Funds

Beside business, households and government savings, the other critical rate determining factor is investment spending by business firms. Business requires huge amounts of funds each year to purchase equipment, machinery, and inventories and to support the construction of new buildings and other physical facilities. The majority of business expenditures for these purposes consist of replacement investment. A replacement investment is the expenditures to replace equipment and facilities that are wearing out or are technologically obsolete. A smaller but more dynamic form of business capital

spending is labeled net investment. Net investment is the expenditures to acquire additional (new) equipment and facilities in order to increase output. The sum of replacement investment plus net investment equals gross investment. According to the classical economists, interest rate and investment fund have inverse relationship. At low rate of interest, more investment projects become economically viable and firms require more funds to finance a longer list of projects. On the other hand, if the rate of interest rises to high levels, fewer investment projects will be pursued and fewer funds will be required from the financial markets as figure no. 2.2.

Figure 2.2

The Investment Demand Schedule



The Equilibrium Rate of Interest in the Classical Theory of Interest

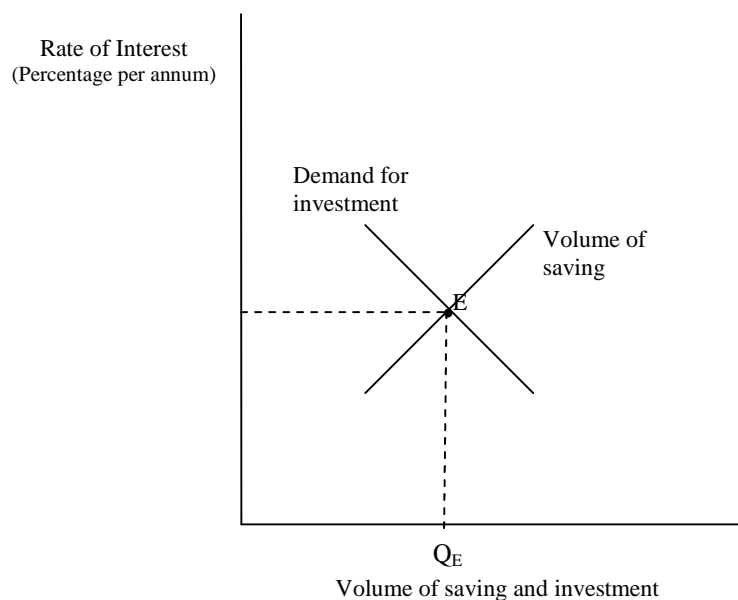
The classical economists believed that the interest rates in the financial markets were determined by the interplay of the supply of saving and demand for investment.

Specifically, the equilibrium rate of interest is determined at the point where the quantity of savings supplied to the market is exactly equal to quantity of funds demanded for investment. As shown in the figure below this occurs at point E, where the equilibrium

rate of interest is i_E and the equilibrium quantity of capital funds traded in the financial markets is Q_E .

Figure 2.3

The Equilibrium Rate of Interest in the Classical Theory



The market rate of interest moves towards its equilibrium level. However, supply and demand forces change so fast that the interest rate rarely has an opportunity to settle in at a specific equilibrium level. At any given time, the rate is probably above its true equilibrium level but moving towards that equilibrium. If the market rate is temporarily above equilibrium, the volume of saving exceeds the demand for investment capital creating an excess supply of savings. Savers will offer their fund at lower and lower rates until the market interest rate approaches to equilibrium. Similarly, if the market rate lies temporarily below equilibrium, investment demand exceeds the quantity of savings available. Business firm will bid up interest rate until it approaches the level at which the quantity saved equals to quantity of funds demanded for investment purpose (Rose, 1997: 194-199)⁶.

Limitation of the Classical Theory of Interest:

- Classical theory ignores factors other than saving and investment that affect interest rates. For example, many financial institutions have the power to create money today by making loans to the public. When borrowers repay their loans, money is destroyed. This affects the total amount of credit available in the financial system and therefore it must be considered in an explanation of the factors determining rates.
- Classical theory assumes that interest rates are the principal determinant of the quantity of savings available. But today, economists recognize that income is more important in determining the volume of saving.
- Classical theory contends that the demand for borrowed funds comes principally from the business sector. Today, however, both consumers and governments are important borrowers, significantly affecting credit availability and cost.

2.2.4.2 The Loanable Funds Theory of Interest Rate

A view that overcomes many of the limitations of earlier theories is the loanable funds theory of interest rates. This view argues that the risk-free interest rate is determined by the interplay of two forces: the demand for and supply of credit (loanable funds). The demand for loanable funds consists of credit demands from domestic businesses, consumers, and governments and also borrowing in the domestic market by foreigners. The supply of loanable funds stems from four sources: domestic savings, hoarding demand for money, money creation by the banking system, and lending in the domestic market by foreign individuals and institutions.

Demand for Loanable Funds

Consumer Demand for Loanable Funds: Domestic consumers demand loanable funds to purchase a wide variety of goods and services on credit. Recent research indicates that consumers are not particularly responsive to the rate of interest when they seek credit but focus instead principally on the non-price terms of a loan, such as the down payment, maturity, and size of installment payments. This implies that consumer demand for credit is relatively inelastic with respect to the rate of interest. Certainly a rise in interest rates leads to some reduction in the quantity of consumer demand for loanable funds whereas a decline in interest rates leads stimulates some additional consumer borrowing. However, along the consumer's relatively inelastic demand schedule, a substantial change in the rate of interest must occur before the quantity of consumer demand for funds changes significantly.

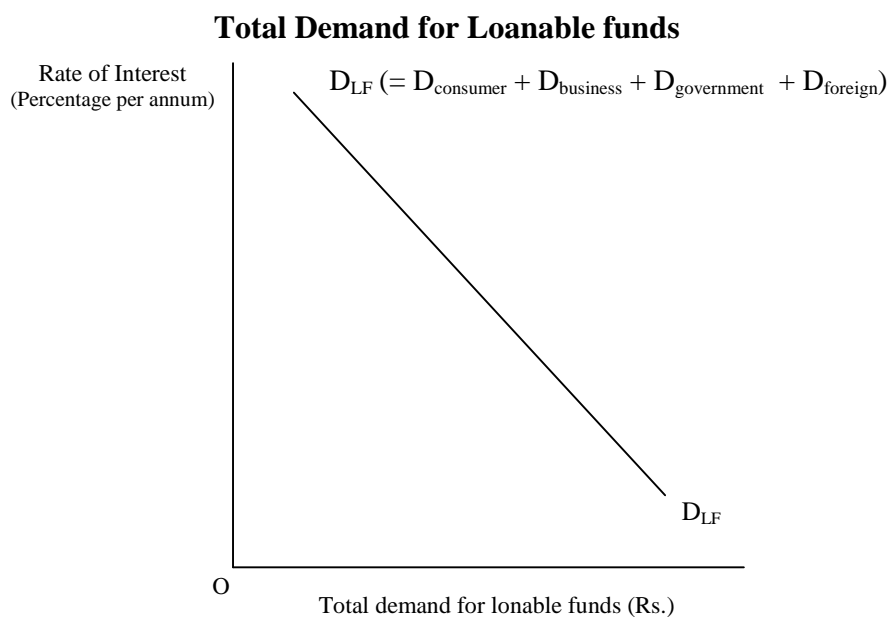
Domestic Business Demand for Loanable Funds: The credit demands of domestic businesses generally are more responsive to changes in the rate on interest than is consumer borrowing. Most business credit is for such investment purposes as the purchase of inventories and new plant and equipment. Higher interest rates eliminate some profitable investment projects whereas lower interest rates stimulate investments. Therefore, the quantity of loanable funds demanded by the business sector increases as the rate of interest falls.

Government Demand for Loanable Funds: Government demand for loanable funds is a growing factor in the financial markets but does not depend significantly on the level of interest rates. Government decision on spending and borrowing are made in response to social needs and the public welfare, not the rate of interest. Moreover, the government has the power both to tax and to create money to pay its debts. State and local government

demand, on the other hand, is slightly interest elastic because many local governments are limited in their borrowing activities by legal interest rate ceilings. When open market rates rise above these legal ceilings, some state and local government are prevented from offering their securities to the public.

Foreign Demand for Loanable Funds: Since the world has become a global village, money can be borrowed and lent across the borders. The huge foreign credit demand is sensitive to the spread between domestic lending rates and interest rates in foreign markets. If domestic interest rates decline relative to foreign rates, foreign borrowers will be inclined to borrow more in the domestic and less abroad. At the same time, with higher foreign interest rates, domestic lending institutions will increase their foreign lending and reduce the availability of loanable funds to domestic borrowers. The net result, then, is a negative or inverse relationship between foreign borrowing and domestic interest rates relative to foreign interest rates.

Total Demand for Loanable Funds: The total demand for loanable funds is the sum of domestic consumer, business, and government credit demands plus foreign credit demands. This demand curve slopes downward and to the right with respect to the rate of interest, as shown in figure no. 2.4. Higher rates of interest lead some businesses, consumers, and governments to curtail their borrowing plans; lower rates bring forth more credit demand. However, the demand for loanable funds does not determine the rate of interest by itself. The supply of loanable funds must be added to complete the picture.

Figure 2.4

The supply of Loanable Funds

Loanable funds flow into the money and capital markets from at least four different sources: (1) domestic saving by business, consumers, and governments; (2) dishoarding (spending down) of excess money balances held by the public; (3) creation of money by the domestic banking system; and (4) lending to domestic borrowers by foreigners. We consider each of these sources of funds in turn.

Domestic Saving: The supply of domestic savings is the principal source of loanable funds. As noted earlier, most saving is done by households and is simply the difference between current income and current consumption. Business, however, also save, by retaining a portion of current earnings and by adding to their depreciation reserves. Government saving, while relatively rare, occurs when current revenues exceed current expenditures. The net effect of the income, substitution, and wealth effects leads to a relatively interest-inelastic supply of savings curve. Substantial changes in interest rates

usually are required to bring about significant changes in the volume of aggregate saving in the economy.

Dishoarding of Money Balances: The public's demand for money (cash balances) varies with interest rates and income levels. The supply of money, on the other hand, is closely controlled by the government. Clearly the two- money demand and money supply – need not be the same. The difference between the public's total demand for money and the money supply is known as hoarding. When the public's demand for cash balances exceeds the supply, positive hoarding of money takes place as some individuals and businesses attempt to increase their cash balances at the expense of others. Hoarding reduces the volume of loanable funds available in the financial markets. On the other hand, when the public's demand for money is less than the supply available, negative hoarding (dishoarding) occurs. Some individuals and businesses will dispose of their excess cash holdings, increasing the supply of loanable funds available in the financial system.

Creation of Credit by the Domestic Banking System: Commercial banks and non-bank thrift institutions offering payments accounts have the unique ability to create credit by lending and investing their excess reserves. Credit created by the domestic banking system represents an additional source of loanable funds, which must be added to the amount of savings and the dishoarding of money balances to derive the total supply of loanable funds in the economy.

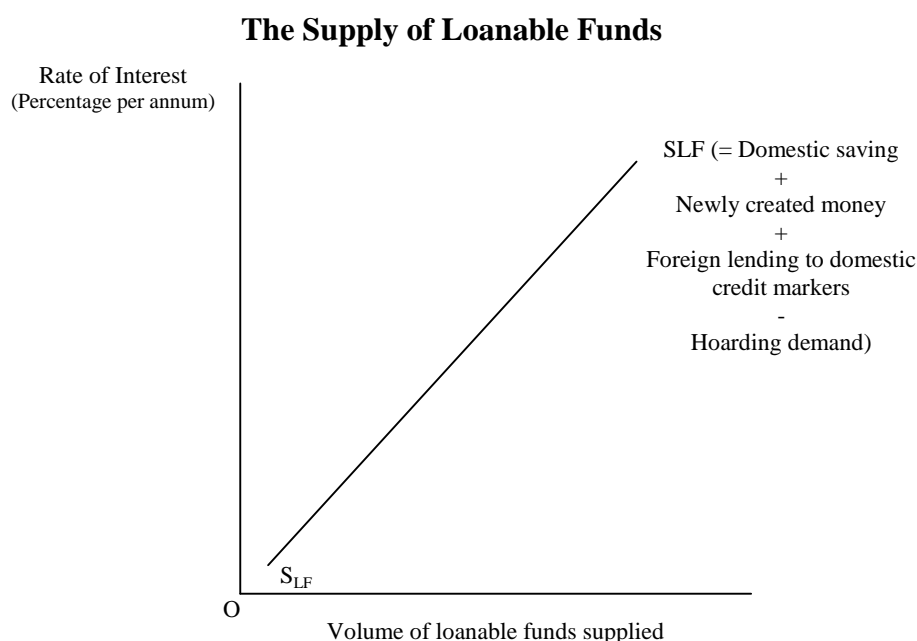
Foreign Lending to the Domestic Funds Market: Finally, foreign lenders provide large amounts of credit to domestic borrowers. These inflowing loanable funds are particularly

sensitive to the difference between domestic interest rates and interest rates overseas. If domestic rates rise relative to interest rates offered abroad, the supply of foreign funds to domestic markets will tend to rise. Foreign lenders will find it more attractive to make loans to domestic borrowers. At the same time, domestic borrowers will turn more to foreign markets for loanable funds as domestic interest rates climb relative to foreign rates. The combined result is to make the net foreign supply of loanable funds to the domestic credit market positively related to the spread between domestic and foreign rates of interest.

Total Supply of Loanable Funds

The total supply of loanable funds, including domestic saving, foreign lending, dishoarding of money, and new credit created by the domestic banking system, is depicted in fig. 2.5. The curve rises with higher rate of interest, indicating that a greater supply of loanable funds will flow into the money and capital markets when the returns from lending increase.

Figure 2.5



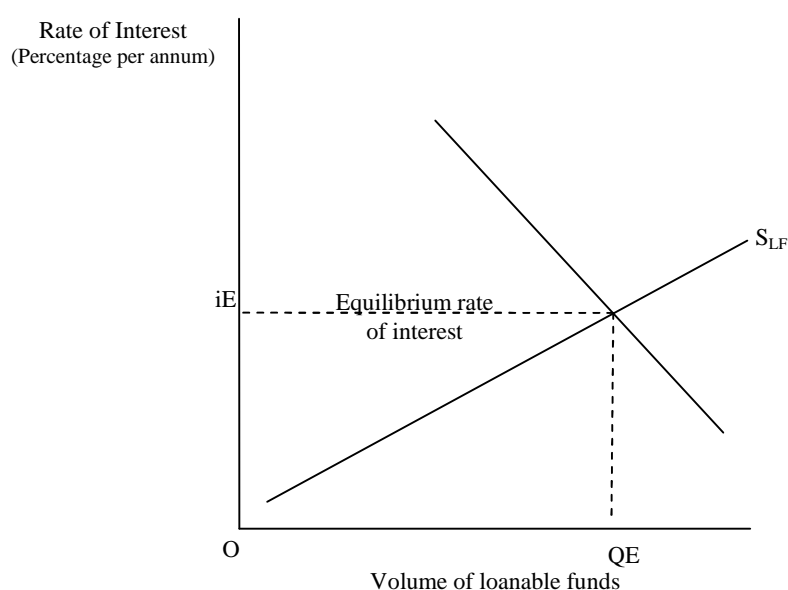
The Equilibrium Rate of Interest in the Loanable Funds Theory

The two forces of supply and demand for loanable funds determine not only the volume of lending and borrowing going on in the economy but also the rate of interest. The interest rate tends toward the equilibrium point at which the supply of loanable funds equals the demand for loanable funds. This point of equilibrium is shown in figure no. 2.6 at i_E .

If the interest rate is temporarily above equilibrium, the quantity of loanable funds supplied by domestic savers and foreign lenders, by the banking system, and from the dishoarding of money exceeds the total demand for loanable funds, and the rate of interest will be bid down. On the other hand, if the interest rate is temporarily below equilibrium, loanable funds demand will exceed the supply. The interest rate will be bid up by borrowers until it settles at equilibrium once again (Rose, 1997: 205-209)⁷.

Figure 2.6

The Equilibrium Rate of Interest in the Loanable Funds Theory



2.2.4.3 The Liquidity Preference Theory of Interest Rate

The loanable funds approach to interest rate determination focuses on supply and demand for loanable fund. The Liquidity Preference theory is an alternative approach which focuses on the liquidity preference instead of the supply and demand for loanable fund. It is assumed that individuals inherently prefer money among all financial assets since money can be used to make payments and is provide perfect liquidity. Wealth holders are persuaded to hold financial assets other than money only when these non-money assets offer an interest returns which do not exits in the holding of idle money. Further the greater the spread between the yields on non money financial assets and money, less the demand for money holdings and greater the demand for other financial assets and vice versa. The demand schedule for money can thus be depicted as a function of the rate of interest as shown in figure no. 2.7.

Figure 2.7

The Demand for Money (M_D) as a Function of the Rate of Interest

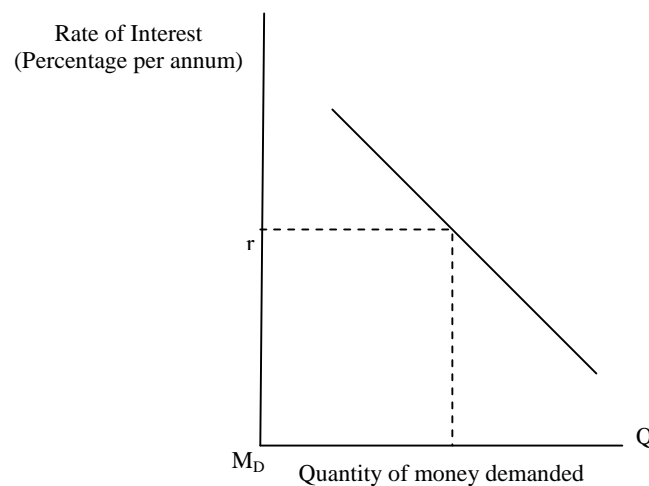


Figure 2.8

Quantity of Money Demanded

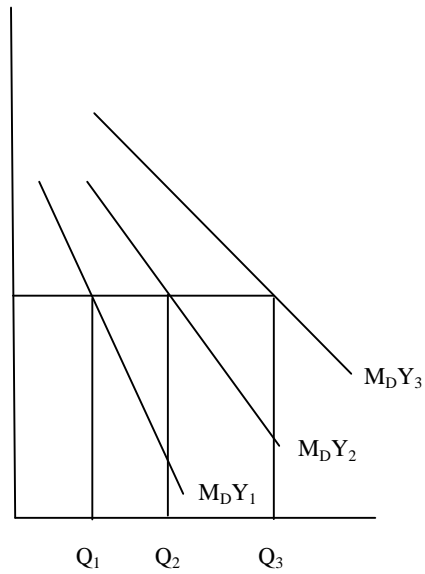
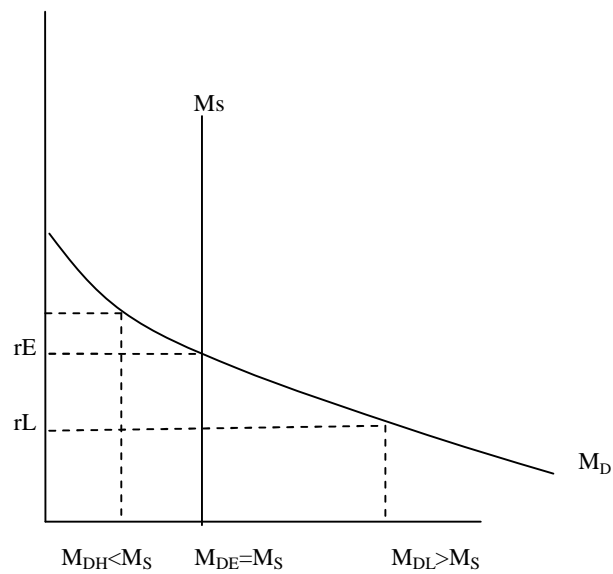


Figure 2.9

Supply-Demand Equilibrium



Thus the greater the income, the greater will be the quantity of money demanded at a given rate of interest and vice versa. The relationship is depicted in figure no. 2.8 where $M_D Y_1$, $M_D Y_2$, $M_D Y_3$ represent the demand for money at the successively higher income level Y_1 , Y_2 , and Y_3 . Thus for a given income level, say Y_2 and a given money supply the

rate of interest (r_E) is viewed as determined by the supply-demand equilibrium depicted in figure no 2.9 where M_S is the supply of money. The equilibrium interest rate r_E is obtained by action of individuals seeking to maintain desired levels of cash balances. Since the amount of desired money holdings is a function of the rate of interest, there is only one rate of interest at which the demand for money balances is the same as the amount of the money supply. At a rate of interest higher than r_E , say r_H in figure no.2.9 individual in the aggregate will be holding more money (M_S) than they desire M_{DH} at the rate of interest (the total supply of money must be held by the public). To rid themselves of “excess” cash, individual purchase interest-bearing financial assets, driving their prices up and their interest rate down. This occurs until the rate of interest falls to r_E at which $M_{DE}=M_S$.

Figure 2.10

Effect of an Increase in the Money Supply on the Rate of Interest

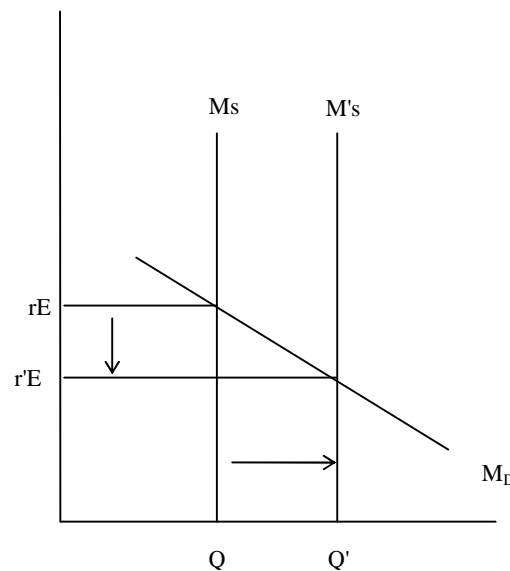
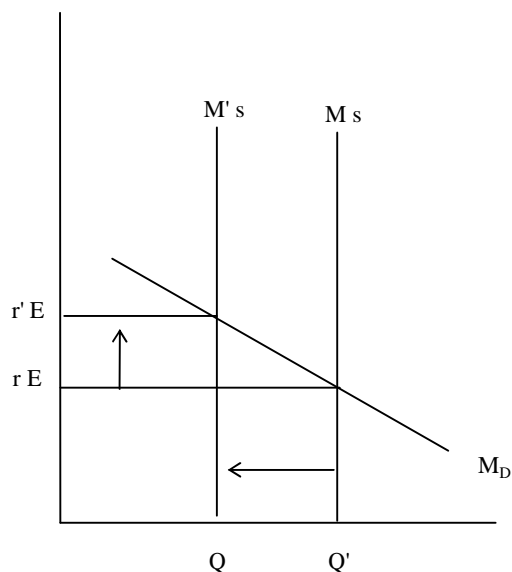


Figure 2.11

Effect of a Decrease in the Money Supply on the Rate of Interest

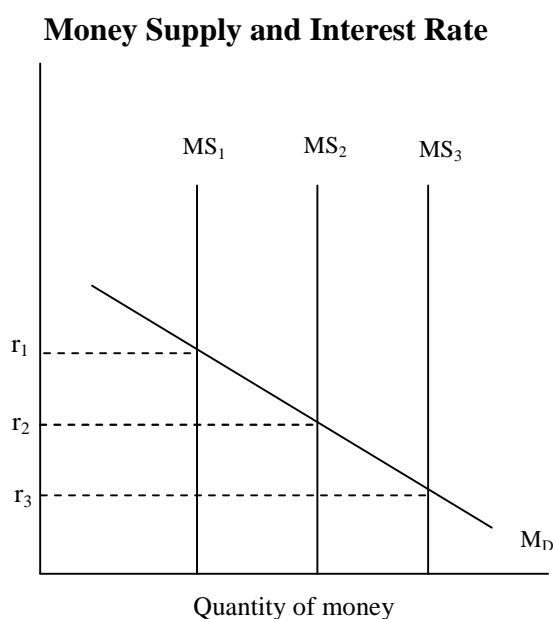


The outcome of course is that public still holds in the aggregate, the same amount of money but at the lower rate of interest, this is now the desired amount. On the other hand, if the interest rate is lower than rE say rL in figure no. 2.9 the public will be holding smaller money balance (M_S) that they desire (M_{DL}) at that rate of interest. As a result, in order to obtain more cash in this situation individuals sell interest-bearing securities, the aggregate effect of which is lower security prices and higher interest rates. The interest rate will thus rise to rE at which point desired cash holdings equal the supply of cash.

A principal aspect of the liquidity preference model is that changes in the money supply affect the rate of interest. In the liquidity preference framework, with income and the price level assumed to be constant, an increase in the money supply will lower rE the equilibrium rate of interest (figure 2.10) and a decrease in the money supply will rise rE (figure no. 2.11).

In summary, when the money supply is MS_1 , the rate of interest is r_1 . As the money supply expands to MS_2 and MS_3 , the rate of interest falls to r_2 and r_3 respectively. The process by which interest rates falls as MS_3 expands can again be interpreted in terms of public preference for money holding relative to other financial assets such as interest bearing securities. For example, as in figure 2.12, when the money supply expands from MS_1 to MS_2 individual find themselves holding larger cash balance than they desire at interest rate r_1 . As they seek to reduce money holdings by purchase of security, security price rise and interest rate fall until a new equilibrium is established at interest rate r_2 where $M_D=M_S$.

Figure 2.12



2.2.4.4 The Rational Expectation Theory of Interest Rate

The rational expectation theory assumes that equilibrium interest rate depends upon the changes in investor's expectation regarding future security prices and return. Investor's decision towards the borrowing and lending funds come from the availability of new information. When new information appears about investment, saving or the money supply, investors begin immediately to translate that new information into decisions to

borrow and lend funds. So, rapid is the process of the market digesting new information that security prices and interest rates presumably impound the new data from virtually the moment they appear. In absence of new information, next period's interest rate will equal to current period's interest rate. In other words, the knowledge of past interest rate will not be a reliable forecast of future interest rate. In a perfectly efficient market, it is impossible to win excess returns continuously by trading on publicly available information.

Assumptions and conclusion of the rational expectation theory are that 1) the price of securities and interest rates should reflect all available information and the market uses all this information to establish a probability distribution of expected future prices and interest rates; 2) changes in rates and security prices are correlated only with unanticipated (not anticipated), information; 3) the correlation between rates of return in successive time periods is zero; 4) no unexploited opportunities for profit (above a normal return) can be found in the securities' markets; 5) transaction and storage costs for securities are negligible and information costs are small relative to the value of securities traded; and 6) expectation concerning future security prices and interest rates are formed rationally and efficiently.

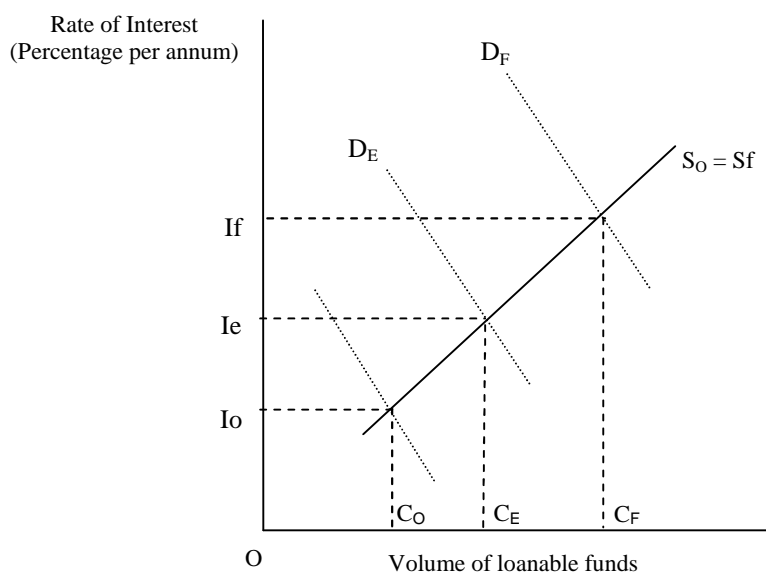
If the money and capital markets are highly efficient in the way we have described, this implies that interest rates will always be at or very near their equilibrium levels. Any deviation from equilibrium rate dictated by demand and supply forces will be almost instantly eliminated. Security traders who hope to consistently earn windfall profits from correctly guessing whether interest rates are 'too high' (and therefore will probably rise) are unlikely to be successful in the long run. Interest rates fluctuations around equilibrium

are likely to be random and momentary. If market participants were expecting increased demand for credit (with supply unchanged), an unexpected announcement of reduced credit demand implies lower interest rates in the future. Similarly, market expectations of less credit demand in the future (with supply unchanged), when confronted with an unexpected announcement of higher credit demand; implies that interest rate will rise.

We can illustrate the foregoing points about the rational expectation theory of interest by modifying the loanable funds theory of interest so that its demand and supply schedules reflect not just actual demand and supply but also the expected demand for and supply of loanable funds. The following figure depicts the equilibrium rate of interest under rational expectation theory. 'Do' and 'So' reflect the actual demand and supply of loanable funds in current period, while 'Df' reflects the actual demand for loanable funds that will prevail in the next (future) time period. The supply of loanable funds is assumed to be the same in both time periods, ($S_0=S_f$).

Figure 2.13

The equilibrium rate of interest under Rational Expectation Theory



Now, imagine that during the current period; the government makes an unexpected announcement of its increased need to borrow more money in future period 'f' due to an

unusually large budget deficit. The result is a new expected demand for loanable funds curve 'D_E', projected to prevail in the next (future) period 'f' but as viewed by borrowers and lenders today in time period '0'. In this case, the equilibrium interest rate in the current period will not be 'I_o', but rather 'I_e', where the expected demand curves 'D_e' intersects the actual supply curve 'S_o'. The equilibrium quantity of loanable funds traded in the current period then will be 'C_E' not 'C_o'. This is because, according to the rational expectation theory, borrowers and lenders will act as rational agents, using all the information they possess (including expected events) to price financial assets today. When the future period arrives, the equilibrium interest rate will rise to rate 'I_f' and the quantity of loanable funds traded, then will be 'D_F'. The equilibrium rate moves upward because the demand for loanable fund in period 'f' is more than the expected further loanable funds demanded as seen by market participants in period '0'.

On the other hand, suppose that actual loanable funds demanded in period 'f' increases upward and beyond 'D_o' but by a smaller amount than was anticipated by investors in the market in period '0'. Demand schedule 'D_F' would then fall somewhere between 'D_o' and 'D_E'. The equilibrium interest (with supply curve unchanged) would be lower i.e. laying somewhere between 'I_o' and 'I_e' (Rose, 1997:211-14)⁸.

2.2.5 Interest Rate Movement and its Relevancy

Interest rate movements affect the values of securities, and therefore affect the performance of all types of Banking and Finance Companies. It is critical for managers of Banking and Finance Companies (including portfolio managers) to understand why interest rates change, how their movements affect performance, and how to manage according to anticipated movements.

Interest rate movements can affect the values of virtually all securities. They have a direct influence on the market values of debt securities such as money market securities, bond and mortgages. This is confirmed in the chapters on financial markets when the main determinants of the market value of each security are identified. Interest rates have an indirect effect on the values of stocks and exchange rates. Since the price movements of derivatives are partially influenced by the price of the underlying instruments, the prices of derivatives representing debt securities or stock or currencies are affected by interest rate movements. Thus, all participants in financial markets closely monitor interest rate movements. So, they can restructure their positions in securities to benefit from any expected movements in interest rate (Madhura, 2001:19).⁹

Interest rate movements also affect the value of most Banking and Finance Companies. Both the cost of funds to depository institutions and the interest received on same loans are affected by interest rate movements. In addition, the market value of securities (such as bonds) held by depository institutions or non-depository institutions are affected as well. Thus, managers of Banking and Finance Companies must closely monitor interest rate movements. So, they can capitalize on favorable movements or reduce their institutions exposure to unfavorable movements.

2.2.6 Economic Factor that affect Interest Rates

Although it is useful to identify those who supply or demand loanable funds, it is also necessary to recognize the underlying economic forces that cause a change in the supply of or the demand for loanable funds. The following economic factors influence the demand for and supply of loanable funds and therefore influence interest rates.

2.2.6.1 Impact of Economic Growth on Interest Rates

Assume that as a result of more optimistic economic projections, most businesses increase their planned expenditures for expansion, which translates into additional borrowing. The aggregate demand schedule will shift outward (to the right). The supply of loanable funds schedule may also shift, but it is more difficult to know how it will shift. It is possible that the increased expansion by businesses could lead to more income for construction crews and others who service the expansion. Thus, the quantity of savings, and therefore of loanable funds supplied at any possible interest rate, could increase, causing an outward shift in the supply schedule. Yet, there is no assurance that the volume of savings will actually increase. Even if a shift occurs, it will likely be of a smaller magnitude than the shift in the demand schedule.

As an example, we can consider how a slowdown in the economy would affect the demand and supply schedules of loanable funds and the equilibrium interest rate. The demand schedule would shift inward (to the left), reflecting less demand for loanable funds at any possible interest rate. The supply schedule could possibly shift a little, but the direction of its shift is questionable. One could argue that a slowdown should cause increased saving at any possible interest rate as households prepare for the possibility of being laid off. At the same time, the gradual reduction in labor income that occurs during an economic slowdown could reduce households' ability to save. Historical data support this latter expectation. Any shift that does occur would likely be minor relative to the shift in the demand schedule. Therefore, the equilibrium interest rate is expected to decrease (Madhura, 2007:33).¹⁰

2.2.6.2 Impact of Inflation on Interest Rates

One of the most serious problems confronting economies around the globe in recent years is inflation. Inflation is defined as a rise in the average level of prices for all goods and services. Some prices of individual goods and services are always rising while others are declining. However, inflation occurs when the average level of all prices in the economy rise (Rose, 1997: 240)¹¹.

There is positive correlation between inflation and interest rate in the market. Since the inflation reduces the purchasing power of consumer (investors), they must be compensated for the decreased purchasing power. Therefore, an increase in inflation leads to increase in quoted market interest rate to maintain purchasing power. This increment in interest rate is known as inflation premium. The implicit Gross National Product Deflator is sometimes referred to as the overall price index since it incorporated the prices on all subcomponents of the gross national product: consumption, investment, government spending and export.

The Fisher Effect

A well-known economist Irving Fisher in 1996 has developed a relationship between nominal and real rate of interest. According the Fisher, if expected real interest rate is held fixed, changes in nominal rate will reflect shifting inflation premiums i.e. changes in the public's view on expected inflation. He argued that the expected real rate of return tends to stable over time because it depends upon the long term factors like productivity of capital, volume of saving in economy etc. In the short term, the nominal interest rate is only influenced by the change in the inflation premium. So, rise in the expected inflation rate causes the same rise in the nominal interest rate.

The Harrod-Keynes Effect of Inflation

Fisher effect of inflation contradicts with the views developed by the British economist Sir Roy Harrod. Harrod's view is based on Keynesian Liquidity Preference Theory of Interest. According to him, real rate is affected by the inflation but nominal rate need not to be affected. Under Liquidity Preference Theory, the nominal rate is determined by the demand for and supply of money or funds. Therefore, unless inflation affects either the demand for and supply of money, the nominal rate must remain unchanged whatever may be the expectation of inflation. Harrod argued that a rise in inflationary expectation will lower the real rate of interest.

There is less than one-to-one relationship between changes in expected inflation and nominal interest rates with the inflation caused wealth, income and depreciation effect. That is, a rise in expected inflation reduces the real rate of return to lender and derives the nominal interest rates higher but rise in nominal rate is less than the increase in expected inflation. But according to the inflation-caused income tax effect, if an investor desire to protect (i.e. hold constant) his or her expected real after-tax rate of return, then the nominal rate has to increase by a greater amount than any rise in the expected inflation rate because otherwise real after tax returns will decline when inflation increases (Rose, 1997: 245).¹²

Impact of Price Deflation

Deflation tends to force real interest rates higher even as nominal interest rates drop downward zero. These elevated real interest rates tend to slow investment spending and decrease the development of new jobs. Real economic output will decline as factors come to produce less and business profit fall. At the same time lenders gain at an expense of

borrowers because the former's purchasing power rises, and business trying to borrow money have to struggle to raise the capital they require to grow and put people back to work.

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

2.2.6.3 Impact of Money Supply on Interest Rates

The central bank can affect the supply of loanable funds by increasing or reducing the total amount of deposit held by commercial banks or their depository institutions. When the central bank increases the money supply, it increases the supply of loanable funds, which places downward pressure on interest rates. However, if the central bank's action affects inflationary expectations, this would increase the demand for loanable funds, which could offset the effect of the increase in the supply of funds. If a central bank (as a monetary authority) reduces the money supply, it reduces the supply of loanable funds. Assuming no change in demand, this action places upward pressure on interest rates (Madhura, 2007:35).¹³

2.2.6.4 Impact of Budget Deficits on Interest Rates

When the government enacts fiscal policies that result in more expenditures than tax revenue, the budget deficit is increased. Consider how an increase in the government deficit would affect interest rates, assuming no other changes in habits by consumers and

firms occur. A higher government deficit increases the quantity of loanable funds demanded at any prevailing interest rate, causing an outward shift in the demand schedule. Assuming no offsetting increase in the supply schedule, interest rates will rise. Given a certain amount of loanable funds supplied to the market (through savings), excessive government demand for these funds tends to “crowd out” the private demand (by consumers and corporations) for funds. The government may be willing to pay whatever is necessary to borrow these funds, but the private sector may not. This impact is known as the crowding-out-effect.

There is a counterargument that the supply schedule might shift outward if the government creates more jobs by spending more funds than it collects from the public (this is what causes the deficit in the first place). If this were to occur, the deficit might not necessarily place upward pressure on interest rates. Much research has investigated this issue (in USA) and, in general, has shown that higher deficits place upward pressure on interest rates (Madhura, 2007: 36)¹⁴.

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

2.2.7 Specific Risk and Cost Factor Affecting Interest Rates

Though it is assumed that deposit increases as interest increases but interest rate is affected by numerous factors. In real world, different financial institutions quote different interest rate. It means that the same type of instrument carries different interest rate at the

same time, so there is presence of interest spread. For this, there are various factors affecting the difference in interest rates.

a. Marketability Risk

One of the most important considerations for an investor is whether a market exists for those assets he/she would like to acquire. Can an asset be sold quickly, or must the investor wait some time before suitable buyers can be found? This is the question of marketability, and financial instruments vary widely in terms of the ease and speed with which they can be converted into cash (Rose, 1997:274).¹⁵ Investors are conscious about the marketability of security and if security is less marketable, they seek compensation for that inconvenience (i.e. waiting for the security to be converted into cash). Therefore, a less marketable security carries higher interest rate while a readily marketable security carries relatively a smaller interest rate. Marketability is positively related to the size (total sale or total assets) and reputation of the institution issuing the securities and to the number of similar securities outstanding. Marketability is a decided advantage to the security purchaser (lender of funds). In contrast, the issuer of securities is not particularly concerned about any difficulties the purchaser may encounter in the resale (secondary) market unless lack of marketability significantly influences security sales in the primary market.

b. Liquidity Risk

A desirable quality of assets that are to be part of a precautionary reserve is liquidity (Meir, 1999: 152).¹⁶ An asset is liquid if it can be turned into cash quickly without loss. But it is the risk that the lender might not be able to liquidate the debt on short notice. The difference in interest rate due to liquidity risk is called liquidity spread. Instruments such

as bonds have an active secondary market. The savings bond will obviously offer a higher return. Other instruments such as savings deposits are easily transferable to cash.

Another interesting phenomenon observed from liquidity spread is that on-the-run securities (secondary markets). This implies that there is a higher demand for on-the-run securities.

c. Prepayment Risk

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

d. Default Risk

Another important factor causing interest rate to differ one from another is the degree of default risk carried by individual securities. Investor's securities face many different kinds of risk, but one of the most important is default risk- the risk that a borrower will not make all promised payments at the agreed- upon times. All securities except government securities are subject to varying degree of default risk (Rose, 1997:274)¹⁷.

The yield on a risky security is positively related to the risk of borrower default as perceived by investor's yield on risky security.

$$\text{Yield on Risky Security} = \text{Risk Free Rate of Interest} + \text{Default Risk Premium}$$

The higher the default risk associated with a risky security, the higher the default risk premium on that security and greater the required rate of return (yield) that must be attached to the security as demanded by investors in the market place. Any adverse development, such as a downturn in economy or serious financial difficulties that makes a borrower appear riskier will lead the market to assign a higher default risk premium to his security. And if risk-free rate remains unchanged, the security's risky yield must rise and its price must decline.

e. Inflation and Default Risk Premium

We know that inflation can cause interest rates to rise, as investors in the financial markets demand to be compensated with higher nominal returns when the level of expected inflation or uncertainty about future inflation goes up. However, inflation also appears to affect the size of default-risk premiums on risky securities. Default-risk premiums (often called 'quality spreads') tend to be higher and more volatile when inflation is high and volatile. Greater uncertainty about inflation, as Wheelock (1997) notes, tends to produce a "Flight to quality" in the financial instruments (Rose, 2003:287)¹⁸. This is one of the many ways in which high and volatile price inflation can disrupt the efficient functioning of a market-oriented economy.

f. Reinvestment Risk

The reinvestment risk appears generally to all investors that generate cash flows for the investors prior to the maturity of the investment. When the yield to maturity is computed

on investments, it is assumed in the calculation process that all cash flows are invested at the yield computed. The internal rate of return (IRR) calculation found in any text book on business finance shows that one of the limitations of the internal rate of return calculation for investments is the assumption that all the cash flows received before the end of the maturity (investment period) are reinvested at the IRR. The reinvestment problem creates reinvestment risk for investors (Thygerron, 1992:125)¹⁹.

g. Exchange Rate Risk

As today's financial markets have become more global, there has been a significant growth in the borrowing and investing in foreign denominated financial claims. A U.S. Company establishing a manufacturing facility in Nepal might be inclined to issue shares and /or bonds denominated in Nepalese rupees rather than U.S. dollars. Investors also have available to them many investments involve exchange rate risk. This risk relates to the potentiality that the rate of exchange between the domestic currency and foreign denominated currency will change as a result of any numbers of factors. The primary risk for the borrower is that the value of the currency borrowed rises in relation to the domestic currency. This results in an unexpected cost on the international loan, since the loan would have to be repaid in the foreign currency that has risen in value relative to the domestic. This potential change in currency values must be reflected in computing the cost of borrowing (Thygerron, 1992:125)²⁰. Although it is not possible to accurately forecast future exchange rates, actual forward exchange rates in different countries do reflect differences in interest rates between countries. These forward exchanges are not good forecasts of the future because they create exchange rate risk for borrowers and investors.

h. Servicing Cost

Some financial claims are difficult to service. This means that the process of collecting interest and principal payments, providing accurate records, or monitoring the ongoing credit position of the borrower involves considerable operation cost. Lender must be compensated for the servicing cost. This cost is included in the interest rate charged, and is referred to as the Servicing Cost.

i. Taxability

The final factor influencing the change in interest rate is taxability. Financial claim income is typically subject to taxation. Since the value of the financial claim is based on its anticipated cashflow, taxation acts to reduce cashflows. Not all incomes are taxable equally. Thus, higher the tax lower will be the cashflow and higher the interest rate and vice versa.

2.2.8 How Open Market Operations Affect Interest Rates?

Even though most interest rates are determined by market, the central bank has considerable authority and powerful mechanisms to affect the level of interest rates by controlling the supply of loanable funds. The primary tool is open market operation. Through open market operation, the central bank purchase or sells securities. These are primarily treasury securities. When central bank purchases the securities, it adds to the supply of loanable funds. The seller of the securities the central bank purchased can reinvest in other loans and investments. When the central bank sells securities, the opposite occurs. (Thygerron, 1992: 81).²¹ When the central bank uses open market operation to increase bank funds, banks have more funds that can be loaned out. This can influence various market determined interest rates. First, the interest rate on loans

between banks may decline as some banks have a larger supply of excess funds to lend out. Second, banks with excess funds may offer new loans at lower interest rates in order to make use of these funds. Third, these banks may also lower interest rates offered on deposits because they have more than adequate funds to conduct existing operations (Madhura, 2001: 81)²².

Open market operation used to increase bank funds influence not only bank deposits and loan rates but the yields on other debt securities as well. The reduction in yields on debt securities lowers the cost of borrowing for the issuers of new debt securities. This can encourage potential borrower (including corporations and individuals) to borrow and make expenditures that they might not have made if interest rates were higher. If open market operation is used to reduce banks' fund by selling the treasury securities; by increasing the level of discount rate; and by increasing the reserve requirements; the opposite effect occurs. More banks have different funds and fewer banks have any excess funds. Thus, there is upward pressure on the interest rate offered to bank deposits. As bank deposit rate rises, some investors may be encouraged to create bank depositors rather than invest in other debt securities thereby increasing the yield offered on the instruments.

The actions of the central bank also affect the level of aggregate employment and inflation. The central bank tends to foster stimulative open-market policies when the economy has slack resources and high unemployment and restrictive policies during period low unemployment and rising inflation.

2.2.9 Inflation and Interest Rate

2.2.9.1 Concept of Inflation

Inflation in common sense is increment in general or average price level in the whole economy. It means that it is the increase in general price level, not the increase in individual prices. Inflation is not a temporary fluctuation in price but it is a sustained and appreciable increase in price (Joshi, 2056: 364)²³. Due to the increase in general level in price, the value of purchasing power of money declines, as there is an inverse relationship between the general level of price and value of money. According to Economist Crowther, “Inflation means a state in which the value of money is falling i.e. prices are increasing.” Inflation is a general rise in prices across the economy. This is distinct from a rise in the price of a particular good or service. Individual prices rise and fall all the time in a market economy, reflecting consumer choices and preferences, and changing costs. If the price of one item – say a particular model of car increases because demand for it is high, we don't think of this as inflation. Inflation occurs when most prices are rising by some degree across the whole economy (www.bankofengland.co.uk/targettwopointzero/inflation/whatsinflation.htm)²⁴.

During inflation, the cost of living increases rapidly, so inflation severely hurts the people who depend on the income from fixed income securities like bonds, and preferred stock. Similarly, as purchasing power of money falls as well as the debtors gain, and the creditor loses.

Inflation has severe social, political and economic effects. Hence, some like to call it ‘worst than taxes’ and ‘legal robbery’. During last 30-40 years, almost all countries of the world have experienced some degree of inflation. For example, Germany, Russia, Austria

in 1920s and Hungary, Romania, China and again Germany in 1940s had experienced the strain of hyper inflation. Inflation brings political instability. According to Milton Friedman the rise of Hitler was due to hyperinflation. Today each and every nation of the world is suffering from the economic evil of inflation. The trend of rising prices has the general phenomenon of every country. The most developed and industrialized countries have adopted various method like credit control via bank rate, checking money supply and various other price control policies yet they have not been able to remain aloof from this disease. On the other hand, the developing nations who have much less sufficient type of economy are suffering severely from both domestic as well as imported inflation.

If the rate of increase in money incomes overcomes the rate of increase in production, there is excess purchasing power in the hands of public. Inflation is reflected in high prices and increased imports.

2.2.9.2 Inflation and Interest Rates

Inflation occurs when the average price level in the economy rises. Interest rates represent the “price” of credit. Are they also affected by inflation? The answer is yes. There is positive correlation between interest rates and inflation. In other words, increase in inflation increases the interest rates. But the exact effect of inflation on interest rate is not identified yet. On this regard, there are many theories. Here in this case, mainly two theories are going to discuss.

The Nominal and Real Interest rates

Before exploring the relationship between inflation and interest rates, several key terms must be understood. In this connection, one should be familiar with nominal rate and real rate of interest. The nominal rate is published or quoted interest rate on a security or loan.

These rates are the actual rates that are used to transact with the customers. In other words, “nominal rate of return are money rates of return that are not adjusted for the effect of inflation” (Francis, 1991: 438).²⁵ For example an announcement in the financial press that major commercial banks have raised their prime lending rate to 10 percent per annum indicates what nominal interest rate is now being quoted by banks to their best customers (Rose, 2003: 240).²⁶ Similarly, the real interest rate is the return to the lender or investor measured in terms of its actual purchasing power. In a period of inflation, of course, the real rate will be lower than the nominal rate. An investment’s real rate of interest during some period is calculated by removing the rate to inflation from the nominal return i.e. by using following equation:

$$(1 + rr) = \frac{(1 + r)}{(1 + q)}$$

Where,

rr = Real Rate of Return

r = Nominal Rate of Return

q = Inflation Rate

The Fisher Effect

Economic theory tells us that interest rates reflect expectations about likely future inflation rates. In countries where inflation is expected to be high, interest rate also will be high, because investors want compensation for the decline in the value of the money. This relationship was first formalized by economist Irvin Fisher and is referred to as the Fisher effect (Shrestha & Bhandari, 2004:176)²⁷. According to Fisher effect, nominal interest rate is related to the real rate by the following equation:

$$\text{Nominal Interest Rate} = \text{Expected Real Rate} + \text{Inflation Premium} + \\ (\text{Expected Real Rate} \times \text{Inflation Premium})$$

According to Fisher, the cross-product term in the above equation (i.e. Expected Real Rate \times Inflation Premium) is often eliminated because it is usually quite small except in countries experiencing severe inflation. So the Fisher's equation can be written as;

$$\text{Nominal Interest Rate} = \text{Expected Real Rate} + \text{Inflation Premium}$$

Clearly, if the expected real interest rate is held fixed, changes in nominal rate will reflect shifting inflation premium. It means that if inflation premium increases then nominal rate also increases. But this does not necessarily mean that an increase in expected inflation automatically increases nominal interest rates. There are several different views on this matter but according to Fisher expected rate of return tends to be relatively stable over time because it depends on such long-term factors as the productivity of capital and the volume of savings in the economy. Therefore, a change in the inflation premium is likely to influence only the nominal interest rate, at least in the short run. The nominal rate will rise by the full amount of the expected increase in the real rate on inflation.

If these view, known today as the Fisher effect, is correct, it suggests a method of judging the direction of future interest rate changes. To the extent that a rise in the actual rate of inflation causes investors to expect greater inflation in the future, higher nominal interest rates will soon result. Conversely, a decline in the actual rate of inflation may cause investors to revise downward their expectations of future inflation, leading to lower nominal rates. This will happen because, in an efficient market, investors will be compensated for the risk of expected changes in the purchasing power of their money.

The Harrod-Keynes Effect of Inflation

There is another view about Inflation – interest rate relationship propounded originally by British economist Sir Roy Harrod. This view conflict with that of Fisher’s effect. It is based upon the Keynesian Liquidity Preference Theory of Interest Rate. Harrod argues that the real rate will be affected by inflation but the nominal rate need not be. Following the Liquidity Preference Theory, the nominal interest rate is determined by the demand for and supply of money. Therefore unless inflation affects either the demand for and supply of money, the nominal rate must remain unchanged regardless of what happens to inflationary expectations. According to this principle, Harrod argues that a rise in inflationary expectations will lower the real rate of interest. In Liquidity Preference Theory, the real rate measures the inflation-adjusted return on bonds. However, conventional bonds, like money, are not a hedge against inflation, because their rate of return is fixed by contract. Therefore, a rise in the expected rate of inflation lowers investors’ expected real return from holding bonds. If the nominal rate of return on bonds remains unchanged, the expected real rate must be squeezed by expectations of rising prices.

2.2.9.3 Tools to Measure Inflation

There is no completely satisfactory way to summarize the price changes that have occurred over a given time period for the large number of goods and services available in the country. Nevertheless, the government has attempted to do so by measuring the cost of specific mix of major items (a basket of goods, consisting of specified quantities and qualities of various items of food, clothing, housing and health care products bought by the average urban household.) at various point of time. The “overall” price level computed for this representative combination of items is termed as Cost of Living Index.

The percentage change in this index over a given time period can be viewed as a measure of the inflation that took place from the beginning of the period to the end of the period (Sharpe, Alexander & Bailey, 2003: 332)²⁸.

Similarly, most governments compute a number of alternative price indices in order to provide a wider choice for analysis. Nevertheless, many people tend to focus on one index as an indicator of the price level. Generally, in most of the countries, Consumer Price Index (CPI) is used as this tool to calculate the inflation rate. The percentage change in the CPI over time measures the rate of inflation, as shown below in equation. The inflation rate is denoted by q .

$$q = (CPI_1 - CPI_0)/CPI_0$$

Where,

CPI_1 = Consumer Price Index of Period 1.

CPI_0 = Consumer Price Index of Period 0.

2.2.10 Relationship between Interest Rates and Security Price

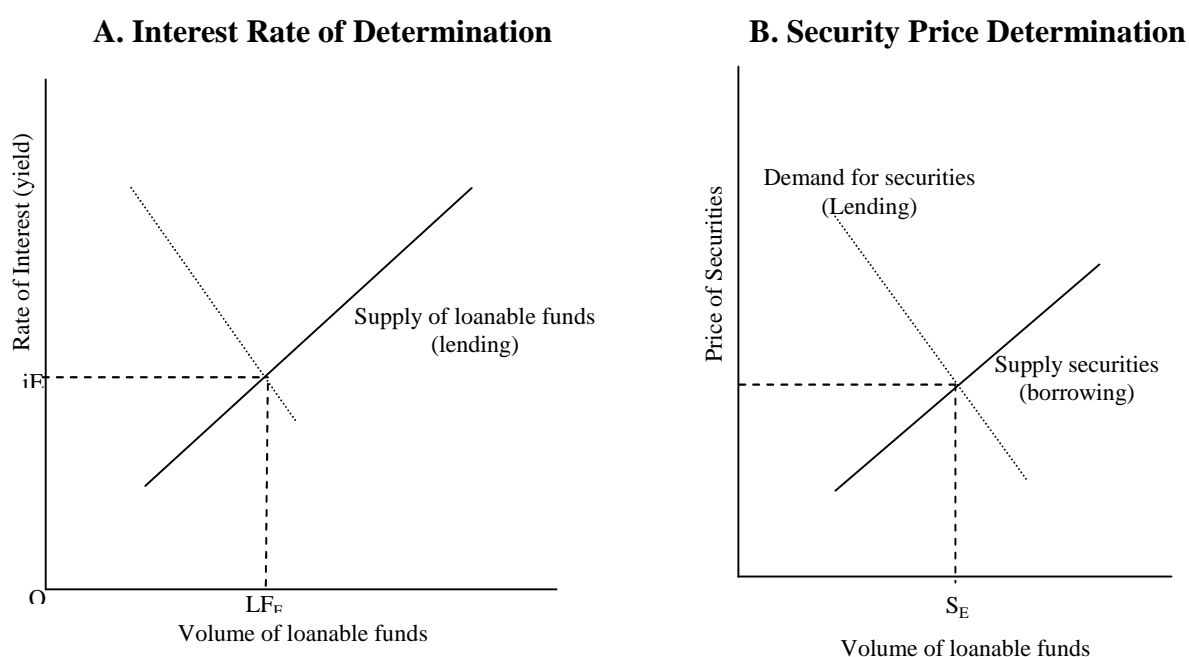
The price of the security and its yield (rate of interest) has inverse relationship. It means that a rise in yield implies a decline in price; conversely, a fall in yield is associated with a rise in the security's price.

The investing funds in financing assets can be viewed from two different perspectives; the borrowing and lending of money or the buying and selling of securities. Similarly, the equilibrium rate of interest from the lending of funds can be determined by the interaction of the supply of loanable funds and the demand for loanable funds. Demanders of loanable funds (borrowers) supply securities to the financial market place and suppliers of

loanable funds (lenders) demand securities as an investment. Therefore, the equilibrium rate of return or yield on a security and the equilibrium price of that security are determined at one and the same instant and are simply different aspects of the same phenomenon, the borrowing and lending of loanable funds. This can be cleared with the help of following figure:

Figure 2.14

Equilibrium Security Prices and Interest Rates (Yields)



The figure 2.14 shows the demand and supply curves for both the rate of interest and the price of securities. The supply of loanable funds curve (representing lending) in the interest rate figure 2.14 (A) is analogous to the demand for securities curve (also representing lending) in the price of securities figure 2.14 (B). Similarly the demand for loanable funds curve (representing borrowing) in the interest rate Figure No. 2.14 (A) is analogous to the supply of securities curve (also representing borrowing) in the price of securities Figure No. 2.14 (B).

We note in Figure No. 2.14 (B) that the borrowers are assumed to issue a larger volume of securities at a higher price and those lenders will demand more securities at a lower price. In figure 2.14 (A), on the other hand, borrowers demand a smaller quantity of loanable funds at a higher interest rate, while the lenders supply fewer loanable funds at a lower interest rate. The equilibrium interest rate in figure 2.14 (A) is determined at a lower interest rate. The equilibrium interest rate in figure 2.14 (A) is determined at a point I_e where the demand for loanable funds equals the supply of loanable funds. Similarly, in Figure No. 2.14 (B), the equilibrium price for securities lies at point P_E where the demand for and supply of securities are equal. Only at the equilibrium interest rate and equilibrium security price will both borrowers and lenders be content with the volume of lending and borrowing taking place in the financial system.

The inverse relationship between interest rates and security prices can be seen quite clearly where we allow the supply and demand curves of Figure No.2.14 to change. For example, suppose that in the face of continuing inflation, consumers and business firms accelerate their borrowings, increasing the demand for loanable funds. The demand for loanable curve slides upward and to the right with the supply of loanable funds unchanged. The increasing demand for loanable funds also means that the supply of securities must expand by a shift in the supply curve. Both a new lower equilibrium price for securities and a higher equilibrium interest rate for loanable funds result.

Conversely, suppose that consumers decide to save more, expanding the supply of loanable funds. Then the supply of loanable funds curve slide downward. But with more savings, the demand for securities curve must rise, sliding upward as those added savings are invested in securities. The result is a rise in the equilibrium price of securities and a decline in the equilibrium interest rate (Rose, 1997: 227)²⁹.

2.2.11 Nepal Rastra Bank Directives and Interest Rate in Nepal

Taking the reference of history on interest rates, we observe different changes in interest rate. The sole controller for regulating interest rate in Nepal is central bank, Nepal Rastra Bank. In the beginning, the interest rate charged and offered by banks and finance companies was mentioned at a lower level with a view to stimulate real income and employment. However, dramatic change had been made time-to-time. Regulation of interest rate by Nepal Rastra Bank was made in the early stage of financial market development taking the period from 1955 to 1965. But NRB gradually began to liberalize the determination of interest rate on a phase-wise basis according to compatibility of the banks and the finance companies that have developed in the country. In the early mid 1980's the country has adapted liberal economic policy. Number of Finance Companies, Commercial Banks and Development Banks began to increase and government made the liberal policy in maintaining the interest rate were encouraged for Commercial Banks, established under joint venture in association with foreign banks in private sectors. Similarly, deregulated of interest rate was applied to financial companies established under finance company acts. Likewise, Development Banks, Micro Finance Companies, NGOs and licensed cooperative under, NRB were also made competitive in the determination of interest rate. The Central Bank, the sole institution authorized to control the Banking and Finance Companies. There were full discretions to NRB in determining interest rate structure of Banks and Finance Companies taking from the period 1960 to 1975.

On 16 November, 1984 government had provided autonomy in offering the interest rate on saving and time deposit to the extent of 1.5% and 1% points respectively above the prevailing rates. In 1986 Banking and Finance Companies got freedom in fixing their interest rates in their deposits and loans. In addition, there was also limitation on the

interest rate on different loans provided for the productive sector, priority sector and full deprived sector. However, there was limitation imposed on certain sectors of lending such as the rate of maximum of 15% on the priority sectors loan. And for other kinds of loans Banks and Finance Companies were given freedom to maintain the interest rate structure. In this way, government provided freedom as well as limitation on the determination of interest rate.

On August 22 1992, Nepal Rastra Bank issued some directives to Banks and Finance Companies to clearly spell out the interest rate on deposits. Nepal Rastra Bank also instructed the bank and finance companies to limit their interest rate spread on deposit and credit at 6 percent within the mid December 1993. A further instruction to banks and finance companies was issued in 2002, and now the interest rate spread required to be maintained by Banks and Finance Companies has also been removed.

The interest rate regime in Nepalese perspective change from rigid control and monopoly of NRB from 1960 to 1980 to that of ultimate deregulation of interest rate and removal of spread form 1986 to 2002. At present there is complete freedom to have competitive interest rate with hope of maintaining efficiency in financial system is an important part of government's financial liberalization policy. In this way, the interest rate became a market determined phenomena rather than a regulated phenomena. The process of interest rate deregulation became a major indicative factor of the financial sector reform in the country. The following table 2.1 shows the development of Interest Rate in Nepalese Banking and Finance Companies.

Table 2.1
Phase-Wise Development of Interest Rate

1960	Sole and whole monopoly to NRB to fix interest rate on deposit and loans.
1976	NRB empowered to determine interest rate.
1980	Process continued for NRB to fix interest rate and banks and financial institutions to follow it.
1986	Freedom to commercial banks to offer higher interest rates from the minimum level of interest rate fixed by NRB.
1989	Interest rate fully deregulated.
1992	Issued directive to commercial banks to spell out interest rate policy encouraging competition in interest rate.
1993	Spread not to exceed 6 percent.
1999	Decreased spread to 5 percent.
2002	Removal of spread.
2003	Continuity of interest rate independence to banks and financial institutions.
2004	Comparative consideration of market interest rate with quoted interest rate.
2005	Emphasis of decreasing the spread.
2006	Trend of lower interest rate on deposits compare to interest charge on loan.

(Source: Shrestha & Bhandari, 2007:129)³⁰

Besides taking various monetary measures, NRB also issues directives to Commercial Banks, Development Banks and Finance Companies regarding their activities and policies. Among the various directives issued some of them which affect interest rate charged and offered by Nepalese Banking and Finance Companies are mentioned here.

Single borrower limit is one of the directives issued by NRB that affects interest rate indirectly. As per the directives, Commercial Banks, Development Banks, and Finance Companies can provide loan to single borrower (i.e. and individual or an organization or a firm or a company or members of single family) up to 25% of their core capital for fund

based loan. But this limit for non-fund based loan is 50% of core capital. However, loan on security of government bond/ NRB bond/Fixed deposit receipt is not restricted by this provision. Similar restrictions to provide loan for single sector has also been issued by NRB. Such types of restrictions reduce the amount loaned (demand of loan), which may influence the interest rate on lending. Similarly reduced loan-advanced also reduces the deposit requirement and reduction in interest on deposit also occurs.

Limitation regarding fund collection i.e. deposit collection has also been made in directives issued. According to the directive, commercial bank and development banks can collect deposits from public not more than 15 times of their core capital.

Development banks and Finance Companies are forbidden to accept the fixed deposits of less than 3 months. Development banks can collect saving deposit up to 20% of total financial resources whereas finance companies can collect saving deposit up to 2.5 times of their core capita. Finance Companies and can collect financial resources (deposits, borrowing and debenture) up to 10 times of their core capital. Such type of limitations reduces the source of fund (fund collection) for the institutions which reduces the liquidity in institutions and impact may be the higher interest rate on lending because of low supply of loanable fund.

NRB also issue directives directly to influence interest rates in financial market. A directive issued in 2000 had specified that the commercial banks could offer interest rate more than published rate by 50 basis points on the basis of negotiation with customer for the deposit upto Rs. 200 million and 100 basis points for the deposits of more than Rs. 200 million. Over the published lending rates for all types of loan, the banks could make adjustment upto 50 basis points on the basis of negotiation with customers. Weighted

average interest rate spread must not exceed was 5%. But this restriction is already removed. Now Banks and Finance Companies are free to fix their interest rate. They are not allowed to charge interest on flat basis. Hence instructions and directives issued by NRB in different time periods affect the interest level in Nepalese Financial Banking and Finance Companies.

2.3 Review of Relevant Studies

2.3.1 Review of Unpublished Thesis

Some studies have been conducted as thesis for the partial fulfillment of M.A, M.B.A and M.B.S in TU., which are related, to some extent, to this topic, are reviewed here.

(Rajbhandari: 1978)³¹, the objective of his study was to show the relation of interest rate with saving and fixed deposits with loans and advances; and interest earning (i.e. interest received on loan minus interest paid on deposits). His analysis concludes that the time deposits were positively and significantly correlated with the interest rates. There was significant correlation between the saving deposits and the rate of interests. Fixed deposit is more sensitive to the interest rate revision done by NRB. The correlation between the growth of fixed deposits and the interest rate particularly from 1974 to 1977 was most significant.

But the relation between the interest rates and the loan and advances is less significant.

Among all the sectors, the private sector seems most sensitive to interest rate change.

Most of the loans too correlated positively if absolute cumulative figures are taken. But the growth rate of total loans and advances except investment on GON securities is negatively correlated more with the weighted average rate of interest since 1973. The

growth of loans to private sector is also negatively correlated with interest rate since 1971. Negative correlation between loans and interest meant that loans decrease at higher interest rate and vice versa. The net interest earning is dependent upon interest coverage, the total interest received and the total interest paid significantly correlated in the case of both of the banks i.e. Nepal Bank Limited and Rastriya Banijya Bank, the sample organization of the study. According to him, NRB can well monitor the credit flow and profits of the commercial banks in Nepal by manipulating the rates of interest. It can also manipulate the demand and supply of money.

(Pandey: 1979)³² conducted a study with the following objectives:

- To study the trend of money supply in Nepal and thereby to find out the factors responsible for it.
- To study the price level of Nepal.
- To analyze the interest rate structure on NRB.
- To see the relationship among money supply prices and interest rate structure on Nepal.

With the above-mentioned objectives he concluded that the time deposits were positively and significantly correlated with the interest rates. There was significant correlation between the savings deposits and the rate of interest and between the fixed deposits and the rate of interest. Fixed deposit is more sensitive to the interest rate revisions. The correlation between the growth of fixed deposits and the rate of interest particularly was most significant. The relation between the interest rates and the loans and advances has significant. Among all sectors the private sectors seems most sensitive to interest rate revision. The net interest earning depends upon interest coverage. The total interest

received and the total interest paid was significantly correlated in the case of both the banks i.e. Nepal Bank Limited and Rastriya Banijaya Bank. By manipulating the rates of interest Nepal Rastra Bank can well monitor the credit flow and profits of the commercial banks in Nepal. It can manipulate demand for and supply of funds by manipulating interest rates and by contracting or expanding money supply.

(Shrestha: 1979)³³, the major objectives were as follows:

- How far the interest rate impact on the mobilization in order to meet the lack of capital for the implementation of various projects.
- To see the deposit credit ratio throughout the changed incurred in interest rate by which one can see that how far the deposits have effectively utilized

With the above objectives he concluded his study as: The structure of interest rate has greater influences over the resource mobilization and utilization in the productive sectors. Since his study is too old, interest rate at that time was purely the central bank's phenomenon. In this study, he has concluded that the frequent change in interest rates was disliked by customers except changing the interest rates as directed by NRB. He had suggested that the commercial banks should quote stable rate as far as possible. He also recommended that the method of calculating interest should be used in such a way that the previous customers and depositors who are already involved in banking transaction should not be affected adversely. He also suggested to charge high interest rate on loan to luxury goods as in productive sectors and a lower rate on productive and small scale industries.

(Chhetri: 1980)³⁴, tried to identify the relationship of interest rate with three other factors i.e. deposit, credit and inflation. The objectives of his study were;

- To present a concrete picture of the interest rate structure in Nepal.
- To predict the relationship between interest rate and other economic variables like deposit, inflation and credit flow in Nepal.
- To analyze the impact and implementation of the policy of interest rate of Nepal Rastra Bank.

His study concluded the following aspects:

- The relationship between income and interest rate & between inflation and interest rate could not come significant.
- Keeping other variables constant, the institutional interest rate is the important explanatory variable to influence the volume of deposits in Nepal. This means that the upward movement in the interest on deposit increases the volume of deposit.
- He also found out the negative relationship between credit flow and loan rate.
- He found that the price level of Nepal is linked with Indian prices and also found very high inflation (10-17) % during his study period.

His suggestion to commercial banks is to fix the concession interest rate in order to promote the cottage and small-scale industries; and to monetarists to consider the rate on inflation while determining the interest rate on deposits.

(Bhandary: 1998)³⁵, has concluded following:

- Interest rate structure has direct influence on profitability of commercial banks. Decreasing lending rate helps to increase the profitability through increasing the credit.

- Deposits are more interest rate conscious and positively co-related.
- Loans and advances of commercial banks have been found to be continuously increasing with the decline in interest rates.
- Rates of commercial banks have been fluctuating. Deposits and lending rates were increased immediately after liberalization of the interest rate on August 31, 1989 but, however, it started to decline, which have helped in increasing the credit flow.
- Effective interest rate structure helps in proper utilization of resources as measured by loan to deposit ratio.
- Most of the banks are having similar interest rate structure, which lessens the importance of liberalization of interest rate.

(Bhatta: 2004)³⁶, tried to show the relation of interest rate with deposit and lending amount. Her findings and the findings made by Mr. Chhetri seems to be different.

According to Chhetri's finding, all the relation matches with the theory but Mrs. Bhatta's finding on deposit was not as per theory. But other matters are same as Mr. Chhetri's. The conclusion drawn by Mrs. Bhatta was:

- Lending rates of all sample banks under study are also in decreasing trend; means that every year lending rates of sample banks under study have decreased.
- Analysis shows that interest rates on lending are far higher than deposit rates of sample banks. The correlation coefficient between these two variables, (deposit rate and lending rate) of sample banks comes highly positive.
- Deposit rates of all sample banks under study are in decreasing trend; meaning that every year deposit rates of sample banks under study have decreased.
- The correlation analysis between lending rate and lending amount of all sample banks under study comes highly negative. This relation between two variables

(lending rate and lending amount) of sample banks matches with the theory which says with the increase in lending rate, lending amount decreases and vice-versa. So she concluded that lending rate is the most important determinant of loan and advances of all commercial banks. This makes clear that borrower's seem more interest conscious.

- The simple correlation coefficient between deposit rate and deposit amount of sample banks were highly negative. But out of them, correlation coefficient analysis of one sample bank is found to be negative. It means that in that case the theory contradicts the analysis. So the researcher concluded that the result appears in that study was different than that of theory.

Finally her conclusion about the study, in her own words, as follow:

“There is significant relationship between deposit rate and deposit amount and lending rate and lending amount of almost all commercial banks except one. Test of significance for correlation coefficient between inflation rate and deposit lending rate shows that these variables are not correlated”

(Pokharel: 2004)³⁷ also give some ideas about the interest rates in Nepalese markets.

Though, this thesis tried to identify the factors that shape the interest rates in Nepalese markets, it also tried to explore the relationship between the interest rate, deposits, credit rates and inflation. Among different objectives, some objectives are as follows:

- To show the relationship between the liquidity position and interest rate on deposit and lending.
- To identify the effect of inflation on interest rate charged and offered by various Nepalese financial institutions.

- To identify the different methods used by Nepalese financial institutions to calculate interest on lending.

During the study, Pokharel found similar result as discovered by Bhatta. According to Pokharel, the major findings of the study were:

The correlation coefficient between interest rate on deposit and amount of deposit collected of sample organizations were highly negative. It means that, deposit amount of all sample banks are found to increase even if the interest rate of deposit, the attracting factors for deposit, is decreasing. This is against the theory. According to theory, there must be positive relationship. Similarly in case of lending rate and lending amount, Mr. Pokharel found the result as suggested by the theory. It means, the correlation coefficient between amount loaned and interest rate on lending of 10 sample bank is found to be highly negative. In other words, negative coefficient of other organizations means that more amounts is demanded at lower interest which means that when demand increases, prices (interest rate on lending) also increases.

Similarly considering about the relationship between interest rate on deposit and on lending for all sample banks, disseminator found it to be highly positive correlated. In his own words, "Variation in one rate also brings variation in another rate in same direction." Therefore it is concluded both interest rates are determining factor of each other.

Finally, according to his finding it is observed that the interest rate charged and offered by various Nepalese Financial institutions is affected to some extent by inflation.

(Parajuli: 2005)³⁸ also gives some ideas about the relation of interest rate with other variables deposit. Inflation and lending that are currently prevailing in Nepalese market the main objectives of this study as follows:

- To identify the sensitivity of interest rate to the investment.
- To explore the relation of interest rate with deposit amounts in Nepalese markets.
- To find out the relationship of interest rate with inflation in Nepalese Market.

The major findings of the study were:

- The interest rates on both deposit and lending of all sample banks are found to be in decreasing trend.
- The saving deposit amount and saving interest rate have negative relationship.
- Lending interest rate in Nepalese Financial Market is affected by inflation only to some extent even though the theory says to exit a positive relation.
- Lending interest rate of the productive sector loan was decreased less in magnitude in comparison to the non-productive sector loan.

2.3.2 Review from Independent Studies

Very few independent studies can be found in Nepal. Especially it is rare in the case of this research topic 'Interest rate'. However very few studies, conducted before two decades, have been found from the central library of T.U. and a brief review is presented here.

(Mourti: 1982)³⁹, his hypothesis was that the demand for money could be explained by real income, price level and rate of interest defined as the weighted average of all commercial bank's deposit rate. The focus of his study was more on demand for money

and less on interest rate. Therefore, only related aspects are reviewed here. The conclusions of his study related to this study are:

- The deposit rates are statistically significant. The results imply that the cash balance ratio does not respond the changes in real income but responds changes in prices and interest rates.
- Demand for money has direct relation with real income with elasticity 8.33 and inverse relation with price level and the rate of interest with elasticities -1.5 and -0.66 respectively.
- The estimated coefficient of interest rate is negative and significant. This implies on inverse relationship between the demand for money and the general rate of interest. This further implies that wealth holders are sensitive to change in interest rates.
- Estimated demand function suggests that there is some abnormal pattern in the use of money in Nepal since the price elasticity has been found greater than one. However, the rate of interest and the level of real income have their usual implications.

(Pant: 1983)⁴⁰, concluded that:

- Nepal adopted a high but flexible interest rate policy from April, 1975. The changes in interest in April 1975 have generated three effects. They are:
 - a. The demand for credit actually declined or rose only at a moderate rate due partly to the failure of commercial banks to diversify its lending operation in non-traditional area but, more importantly, on the slow growth in demand for investment from the private sector.

- b. The profit position of commercial banks deteriorated sharply due to lack of any comprehensive credit plan to use the accumulated resources in the form of deposit liabilities.
- c. Time deposits increase at a higher rate for a year or two and increased the resource base of the commercial banks. The change in deposit rate is expected to have diverted the resources from rural to urban area.
- Changes in interest rate will increase time deposits through the route of balance of payments but the magnitude of effect will depend, in particular, on the interest elasticity of money demand function. The real rate of interest has the expected influence on money demand, or the velocity of money, but the coefficient is too small to be statistically significant, an increase of 100 percent in real interest will lead to just 7 percent increase in saving.
- Basic theoretical postulates of a real money strategy do not apply to Nepal. Money supply in Nepal is exogenously determined and, as advocated by 'real money' theories, it cannot be used to attain internal objective, for example, change in real income or domestic rate of inflation. An excess supply of money over money demanded is fully reflected in Nepal's balance of payments position with India.

2.3.3 International Articles Related to This Topic

Inflation: Inflation and Interest Rates

Whenever it is heard the latest inflation update on the news, chances are that interest rates are mentioned in the same breath. In the United States, interest rates are decided by the Federal Reserve. The Fed meets eight times a year to set short-term interest rate targets. During these meetings, the CPI is one significant factor in the Fed's decision. Interest rates directly affect the credit market (loans) because higher interest rates make

borrowing more costly. By changing interest rates, the Fed tries to achieve maximum employment, stable prices and a good level growth. As interest rates drop, consumer spending increases and this, in turn, stimulates economic growth.

At one extreme, an economy that is growing too fast can experience hyperinflation, resulting in the problems already mentioned earlier. At the other extreme, an economy with no inflation has essentially stagnated. The right level of economic growth, and thus inflation, is somewhere in the middle. It's the Fed's job to maintain that delicate balance. A tightening, or rate increase, attempts to head off future inflation. An easing, or rate decrease, aims to spur on economic growth.

While inflation is a major issue, it is not the only factor informing the Fed's decisions on interest rates. For example, the Fed might ease interest rates during a financial crisis to provide liquidity (flexibility to get out of investments) to U.S. financial markets, thus preventing a market meltdown.

Inflation and Investment

When it comes to inflation, the question on many investors' minds is: "How will it affect my investments?" This is an especially important issue for people living on a fixed income, such as retirees. The impact of inflation on your portfolio depends on the type of securities you hold. If you invest only in stocks, worrying about inflation shouldn't keep you up at night. Over the long run, a company's revenue and earnings should increase at the same pace as inflation. The exception to this is stagflation. The combination of a bad economy with an increase in costs is bad for stocks. Also, a company is in the same situation as a normal consumer- the more cash it carries, the more its purchasing power

decreases with increases in inflation. The main problem with stocks and inflation is that a company's returns tend to be overstated.

In times of high inflation, a company may look like it's prospering, but in reality inflation is the reason behind the growth. When analyzing financial statements, it is also important to remember that inflation can wreak havoc on earnings depending on what technique the company is using to value inventory. Fixed income investors are the hardest hit by inflation. Suppose that a year ago you invested \$1000 in a T-bill that yielded 10%. You are about to collect the \$1,100 owed to you. Is your \$100 (10%) return real? Of course not! Assuming inflation was positive for the year; your purchasing power has fallen, and thus so has your real return. We have to take into account the chunk inflation has taken out of your return. If inflation was 4%, then your return is really 6%. This example highlights the difference between nominal interest rates and real interest rates. The nominal interest rate is the growth rate of your money, while the real interest rate is the growth of your purchasing power. In other words, the real of interest is the nominal rate reduced by the rate of inflation. In our example, the nominal rate is 10% and the real rate is 6% ($10\% - 4\% = 6\%$). As an investor, you must look at your real rate of return.

Unfortunately, investors often look only at the nominal return and forget about their purchasing power altogether (www.investopedia.com/pdf/tutorials/inflation.pdf)⁴¹.

2.4 Research Gap

Some of the previous researchers in their thesis had studied in the limited areas such as interest rate structures, impact of interest on portfolio of commercial banks, interest rate and lending policy etc. Further more no one has considered three sectors of Banking and finance companies i.e. commercial banks, development banks and finance companies.

And most of the studies are outdated which do not seem to match with the present scenario. To fulfill this research gap and to update the research this study has been conducted. This research analyzes the factors that affect interest rates of listed commercial banks, development banks and finance companies. It means this study covers all three sectors of Banking and finance companies which are commercial banks development banks and finance companies.

The job of conducting research and preparing report is complex in itself especially to the unprofessional person like a student. I have tried to make this thesis as a complete outcome of the research on mentioned topic from the best of my effort and knowledge. However, there may always exist some space for rectification. Further researchers are suggested to cover other sectors like Micro credit development banks, Saving and Credit Co-operative Societies and NGOs operating taking license from Nepal Rastra Banks which are still uncovered.

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CHAPTER – III

RESEARCH METHODOLOGY

3.1 Introduction

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 rationale of each step) to be adopted by a researcher in studying a problem with certain objectives in view (Kothari, 1994: 19).¹ Thus, the overall approach to the research is presented in this chapter. This chapter consists of research design, variables, population, sample, source and nature of data, data collection procedures, data processing & presented and data analysis tools.

3.2 Research Design

Research design is the strategy for conducting research work, which describes the general framework for collection, analysis and evaluation of identified data. A research design is the specification of methods and procedures for acquiring the information needed. It is the overall operational pattern of framework for the project that stipulates what information is to be collected from which sources and by what procedures. Research design is a plan, structure and strategy of investigation conceived so as to obtain answer to research question and to control variance. To conduct this study historical, analytical and descriptive research design are used. To determine the effect of inflation and liquidity on interest rate, historical data are analyzed and the research design followed is also analytical. To find the interest rate influencing factors, analysis of views and opinions through questionnaires have been done and the research design is descriptive.

3.3 Variables

In this study, Interest rate in the Nepalese Banking & Finance Companies is dependent variable and other factors that affect to the interest rate in the market are the independent variables like cost of capital, risk factor, competition, economy of the nation, political stability etc. The main objective of this research is to identify the major factors which affect the interest rate in listed Nepalese Banking & Finance Companies.

3.4 Population

All the commercial banks, development banks and finance companies listed in NEPSE till mid-July 2008 are the member of population of this research topic. The population for the study comprises 17 Commercial Banks, 23 Development Banks and 56 Finance Companies (www.sebonp.com)².

3.5 Sample

Properly selected Financial Institutions from Commercial Banks, Development Banks and Finance Companies are the sample for the study. Among the various organizations in population selected institutions are taken as sample to draw the conclusion about population. For convenience, samples are randomly taken representing each group of above mentioned population. Five commercial banks, one development bank and five finance companies are the elements in sample for analysis of Interest rate, Deposit and Lending amount of sample organizations and Correlation Analysis & Relationship between various variables of sample organizations. Various published data from NRB and concerned organizations' publications have been analyzed for showing their relationship.

For views and opinions analysis, questionnaires have been filled by the concerned person of organization. Sample organizations under study are as follows:

Commercial Banks

- i) Nepal SBI Bank Ltd.
- ii) Everest Bank Ltd.
- iii) Nepal Investment Bank Ltd.
- iv) Nabil Bank Ltd.
- v) Standard Chartered Bank Nepal Ltd.

Development Bank

- i) Nepal Development Bank Limited.

Finance Companies

- i) National Finance Company Ltd.
- ii) Kathmandu Finance Ltd.
- iii) Peoples Finance Ltd.
- iv) Premier Finance Company Ltd.
- v) Union Finance Company Ltd.

3.6 Sources and Nature of Data

This study requires both primary and secondary data. To show the relation between variables involved secondary data are used. Some primary data, such as views, opinions, experience and thoughts of practitioners are also analyzed and presented. Secondary data are collected mainly from published sources like annual reports, published bulletins and prospectus of concerned organizations, various publications of Nepal Rastra Bank, various thesis and various papers, journals, magazines and websites. The source of

primary data is professional persons from different institutions who helped researcher by filling the questionnaire given to them.

3.7 Data Collection Procedure/Technique

Data collection also called fieldwork is the implementation of research design. In this study, both primary and secondary data have been employed. Secondary data on annual reports of concerning organization, interest rate structure of such organizations and introductory profiles of the institutions are collected by visiting the respective organizations and from their websites. Some secondary data of sample organizations are collected from the central office of NRB, Baluwater. Primary data have been collected through questionnaire supplied to respondents.

3.8 Data Processing and Presentation

The different kinds of analytical and descriptive tools and techniques in logical manner have been applied to present the collected information/data. Data collected for the study are presented in various forms. Most of the secondary data are presented in tabular form and some graphical presentation is also used. Since the primary data collected are more subjective they are presented in tables and conclusions have been drawn. So far as the computation is concerned, it has been done with the help of scientific calculator and excel worksheet. Most commonly, the collected data were presented in the simple spreadsheets produced from excel which would be easily understandable.

3.9 Data Analysis Tools

As per the requirement of the study and its objectives available data are analyzed using following statistical tools:

3.9.1 Arithmetic Mean

An arithmetic mean is a single value (observation) related from a group of value (observations) to represent them i.e. a value is supposed to stand for whole group. It is the sum of all observations. In such a case all the items are equally important (Panta & Chaudhary, 1999: 91)³. Simple arithmetic mean is used in this study as per the necessity in analysis.

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

Where

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

N = Number of observations

X = Variables involved

3.9.2 Standard Deviation

The standard deviation () measures the absolute dispersion. The greater the standard deviation, greater be the magnitude of the deviation of the values from their mean. The standard deviation is defined as the positive square root of the arithmetic mean of the squared deviation from their arithmetic mean of a set of value. It is a best measure of dispersion. Standard deviation, in this study, has been used to measure the degree of fluctuation of interest rate and that of other variables as per the necessity of the analysis.

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

3.9.3 Correlation Analysis

Correlation is an analysis of the covariance between two or more variables and correlation analysis deals to determine the degree of relationship between variables. The

correlation analysis refers the classes of the relationship between the variables. In other words, this tool is used to describe the degree to which one variable is linearly related to the other variables. Two variables are said to be correlated if the change in the value of one variable (independent) affects the change in the other variables (dependent).

Correlation analysis enables us in determining the degree and direction of relationship between two variables. However, it does not tell us anything about the cause and effect relationship.

Correlation may be positive or negative and ranges form -1 to +1. Simple correlation between interest rate on deposit and deposit amount, interest rate on lending and lending amount and interest rate (both deposit rate and lending rate) and inflation is computed in this thesis. Let's take an example that the correlation between interest rate and inflation is positive which indicates that when inflation increases, interest rate also increases in the same direction and vice versa. For our study, following reference is used;

- Correlation may be positive or negative and ranges from -1 to +1. When $r = +1$, there is positive perfect 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 0.699, there is a moderate degree of correlation.

The simple correlation coefficient (r) is calculated by using following formula;

$$\text{Simple Correlation Coefficient (r)} = \frac{n \sum X_1 X_2 - (\sum X_1)(\sum X_2)}{\sqrt{n \sum X_1^2 - (\sum X_1)^2} \sqrt{n \sum X_2^2 - (\sum X_2)^2}}$$

Alternatively,

$$r = \frac{\text{Cov}(X_1, X_2)}{\sqrt{\text{Var } X_1 \cdot \text{Var } X_2}}$$

where,

$$\text{Covariance } (X_1)(X_2) = \frac{1}{n} \sum (X_1 - \bar{X}_1) (X_2 - \bar{X}_2)$$

N = Total number of observation

X_1 and X_2 = two variables, correlation between them are calculated

$$\text{Multiple Correlation Coefficient } (R_{1.23}) = \sqrt{\frac{r_{12}^2 + r_{13}^2 - 2r_{12} \cdot r_{13} \cdot r_{23}}{1 - r_{23}^2}}$$

Where,

r_{12} = Correlation Coefficient between variables one and two

r_{23} = Correlation Coefficient between variable two & three

r_{13} = Correlation Coefficient between variable two & three

Multiple correlation is used for the measure of degree of association between one variable and a group of other variables taken as the independent variable. It lies between 0 and 1.

The closer it is to '1', the better the linear relationship between the variables. The closer it is to '0', the worse is the linear relationship (Gupta, 2000: 1115)⁴.

3.9.4 Coefficient of Multiple Determination

The square of multiple correlation coefficient is known as the coefficient of multiple determination and is used to interpret the value of multiple correlation coefficient

(Sthapit, 2005: 387).⁵ The main significance of the multiple determinations is to represent the proportion of total variations in the dependent variable which is explained by the variations in the two independent variables.

Coefficient of multiple determination $R_{1,23}^2$ is very much useful in interpreting the value e.g. if the value of coefficient of multiple determination ($R_{1,23}^2$) is 0.79, which means that 79% of the total variation/changes in the values of the dependent variable by the effect of two independent variables and remaining other 21% is due to the effect of other factor.

3.9.5 Hypothesis

In testing of hypothesis, an assumption is made about the population parameter. Simply, a quantitative statement about the population parameter is called hypothesis. One of the important applications of statistical inference is test of hypothesis. To test whether the assumption or hypothesis is right or not or the hypothesized value or test is significantly difference or indifference. Smaller difference, the sample mean is close to the hypothesized value and larger the difference the hypothesized value has low chance to be correct. The objective of hypothesis testing is not to question about the computed value of sample static, but the difference between the sample statistic and population parameter.

Null Hypothesis: The assumption or hypothesis is set that there is no significantly difference between the sample mean and the population mean is called “null hypothesis”.

And it is denoted by H_0 .

$H_0: = \rho$ (two tailed)

Alternative Hypothesis: Contrary of null hypothesis, if there is significant difference between the sample mean and population mean is called alternative hypothesis. It is denoted by H_1 .

$H_1: \neq \rho$ (two tailed)

Test of Significance of an Observed Correlation Coefficient

(T-test for significance of correlation coefficient)

The t-statistic also tests the significance of an observed correlation coefficient. From a bivariate normal population, if the observed correlation coefficient of population has to be tested as significant or insignificant i.e. the variation in the population are uncorrelated, the following test is applied:

Null Hypothesis is set as follow:

$H_0: = \rho$ (two tailed), the variable in the population are not correlated (i.e. the correlation coefficient is insignificant).

Alternative Hypothesis is set as follows:

$H_1: \neq \rho$ (two tailed), the variable in the population are correlated (i.e. the correlation coefficient is significant).

Where; ρ is the correlation coefficient in population.

If 'r' is the observed simple correlation coefficient of 'n' pairs of observations from bivariate normal population, the test statistics for significance of correlation under null hypothesis is given by

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

i.e. t follows t-distribution with n-2 degree of freedom (df) at % level of significant, 'n' being the sample.

The t-distribution also tests the significance of an observed correlation coefficient. If the observed correlation coefficient of population has to be tested as significant or insignificant (zero or uncorrelated), the above formula is applied.

Decision Rule:

- If calculated $t < t_{\text{tab}}$ at % and (n-2) degree of freedom, H_0 is accepted, i.e. 'r' (correlation coefficient) is insignificant.
- If calculated $t > t_{\text{tab}}$ at % and (n-2) degree of freedom, H_0 is rejected, i.e. 'r' (correlation coefficient) is significant.

End notes:

1. Kothari, C.R. (1994). *Research Methodology, Methods and Techniques*. New Delhi: Vikash Publication House Pvt. Ltd.
2. www.sebonp.com
3. Panta, G.D. & Chaudhary, A.K. (1999). *Business Statistics and Mathematics*. Kathmandu: Bhundipuram Prakashan.
4. Gupta, S.P. (2000). *Statistical Methods*. New Delhi: Sultan Chand & Sons Educational Publishers.
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CHAPTER – IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter is the main body of the study, which includes detail presentation, analysis, and interpretation of data relating to interest rate on deposit and lending, deposit collection, and loan advance of each selected organizations from listed Nepalese Banking and Finance Companies. In this chapter, relation between variables i.e. between interest rate on deposit and deposit amount and lending interest rate and lending amount are presented analyzed and interpreted. It also consists of various calculation made for the analysis of interest rate and its impact on deposit amount, lending amount, and inflation rate of the sample organization. To make study effective and precise as well as easily understandable, this chapter is categorized into three parts; presentation, analysis and interpretation. The analysis is based on secondary as well as primary data. Firstly data are presented in tabular and chart form according to the need. The presented data are then analyzed using various statistical tools as mentioned in chapter three according to the requirement of the study; at last interpretation is made following the analysis part. To show the response of interest rate towards inflation rate and real rate of interest, correlation between these variables has been analyzed and significance has been tested using t- statistics. The data and information generated from the different sources, as described in previous chapter have been broadly grouped into the following two groups:

- a. For the qualitative analysis, various published data from NRB and concerned organization's has been analyzed for showing their relationship.
- b. For qualitative analysis primary data collected by means of questionnaire and direct interview with various respondents has been presented and analyzed.

Beside above analysis, tables and diagrams have been used to make the result clearly understandable.

4.2 Quantitative (Secondary Data) Analysis

If two or more quantities vary in sympathy so that movements in one trend to be accompanied by corresponding movement in the others, then they are said to be correlate.

Thus the correlation analysis is generally used to describe the degree to which one variable is related to another. It helps to identify whether a positive or a negative relationship exists; the relation is significant or not; and to establish cause and effect relationship.

The correlation analysis a statistical tool has been used here to show the relationship between various variables assumed to be influencing factors of interest rate charged and offered by sample organizations. Multiple correlations have also been computed to show the simultaneous effect of two factors on interest rate. The coefficient of correlation is also tested using statistics of hypothesis to show whether it is statistically significant or not. Detail analysis of individual institution is presented below.

4.2.1 Nepal SBI Bank Limited (NSBIBL)

Table 4.1

**Amount of Deposit and Lending, Interest Rate on Deposit and Lending of NSBIBL
and Inflation Rate and Risk Free Rate**

Fiscal Year	Deposit Amt. (Rs. In million) (a)	Deposit Rate (%) (b)	Loan Amt. (Rs. In million) (c)	Lending Rate (%) (d)	Inflation Rate (%) (e)	Risk-free Rate (%) (f)
2002	5572.20	4.57	4593.90	9.63	2.90	4.71
2003	6522.80	4.57	4766.10	9.61	4.80	3.48
2004	7232.10	3.63	5552.50	9.09	4.00	2.93
2005	8645.69	3.35	6765.10	8.90	4.50	2.46
2006	10852.71	3.67	8250.80	8.90	8.00	2.84
2007	11445.29	3.50	10064.40	8.00	7.38	2.42
2008	13715.39	3.83	12742.60	8.00	11.03	3.85

Source: Annual reports of Nepal SBI bank limited and various banking & financial statistics published by NRB.

Note:

- Interest rate on deposit is taken as average of rates of various deposit accounts and interest rate on lending is taken as average of quoted rates for various sectors.
Calculation of correlation is shown in appendix-2.
- Deposit amount and lending amount of sample commercial banks are shown in appendix-3.
- Interest rate structures of deposit of sample commercial banks are shown in appendix-6.
- Interest rate structures of lending of sample commercial banks are shown in appendix-7.
- Inflation rate is shown in appendix-12.
- Risk-free rate is shown in appendix-13.

Table 4.2
Correlation Analysis of NSBIBL

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.5644	0.3185	1.527	2.571	Insignificant
r_{bd}	0.6656	0.4430	1.9942	2.571	Insignificant
r_{cd}	-0.9426	0.8890	6.3283	2.571	Significant
r_{be}	-0.3375	0.1139	0.8017	2.571	Insignificant
r_{bf}	0.8218	0.6753	3.2248	2.571	Significant
r_{de}	-0.8104	0.6567	3.0928	2.571	Significant
r_{df}	0.4127	0.1703	1.0131	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.6795$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.4617$
		$R_{d.bc} = 0.9717$			$R^2_{d.bc} = 0.9442$
		$R_{b.ef} = 0.8527$			$R^2_{b.ef} = 0.7271$
		$R_{d.ef} = 0.8659$			$R^2_{d.ef} = 0.7498$

Figure 4.1

Relationship between Rates of NSBIBL

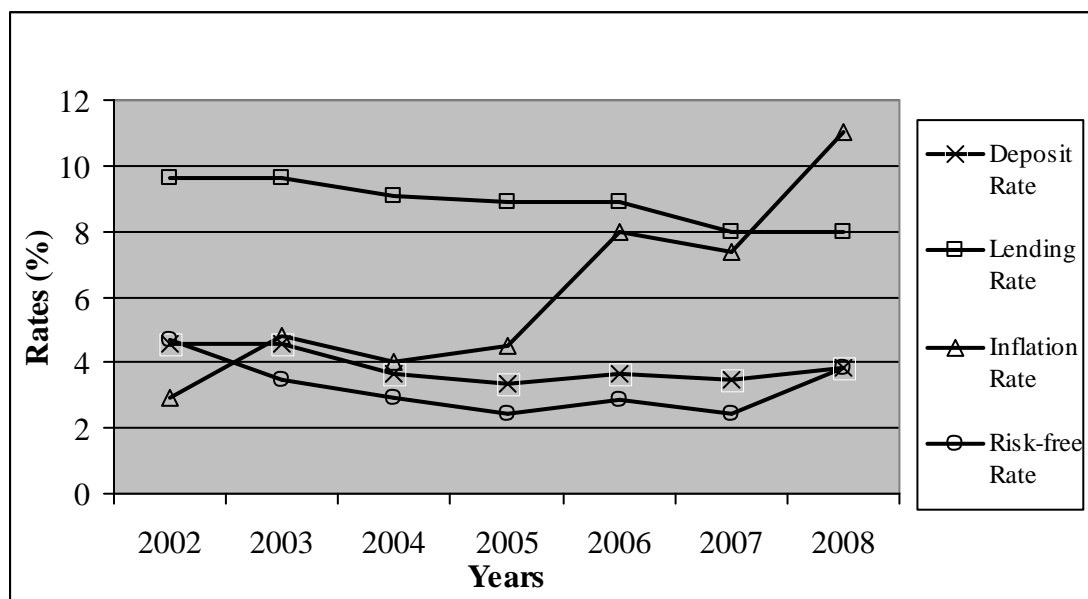


Table 4.1 shows the amount of deposit, interest rate on deposit, amount of loan advanced and interest rate on lending of Nepal SBI Bank Limited for seven fiscal years from 2002 to 2008. Similarly, it also contains the inflation rate and risk free rate (91 days Treasury bill rate) for the same period. The correlation coefficient between interest rate and other variables are presented in Table No. 4.2. Lower part of Table No. 4.2 contains the multiple correlation coefficient and coefficient of multiple determination. The correlation coefficient between interest rate on deposits and amount deposit (r_{ab}) is -0.5644. This means that these two variables are negatively correlated. When supply of loanable fund (supply of deposit) increases; the interest rate on such deposit decreases. In general concept, interest rate on deposit should be positively correlated meaning that higher rate attracts more deposit. But we have assumed that interest rate is dependent factor, which is determined by supply of loanable fund. Hence, the negative correlation between these two variables is not surprising. The coefficient of determination between these two variables, r_{ab}^2 , is 0.3185 which means that 31.85 percent of total variation in interest rate on deposit has been explained by independent variable i.e. amount of deposit collected and remaining is due to the effect of other factors in the economy. The t-statistics for testing the significance of the correlation between variables is 1.527. Since the tabulated t-value at 5% level of significance for 5 degree of freedom (2.571) is greater than the calculated value, correlation coefficient is not significant. This means that the variables mentioned (interest rate on deposit and amount deposited) of Nepal SBI Bank Limited are not significantly correlated. Thus the interest rate on deposit of Nepal SBI bank limited is not affected by amount deposited.

The correlation coefficient between interest rate on lending and amount of loaned advanced has been found negative (-0.9426) which means that variables are highly negatively correlated. According to the assumption of the study, interest rate is dependent

variable and there should be positive correlation between these two variables, which means that increased demand of loanable fund also causes increment in the interest rate. But this negative correlation coefficient between these variables tells that more loan (funds) are demanded at lower rate i.e. demand is dependent on interest rate. In other words, when interest rate on lending decreases the amount of loan advanced increases and vice-versa. The coefficient of determination, r^2_{cd} , is 0.8890 which means that 88.90 percent of total variation in amount loaned has been explained by the variation in interest rate on lending and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 6.3283 which is greater than tabulated value of 2.571. Since the calculated t-value 6.3283 is significantly greater than the tabulated value at 5 percent level of significance for 5 degree of freedom the correlation coefficient is significant. Therefore, it can be concluded that the amount loaned and interest on lending of Nepal SBI Bank Limited are significantly correlated and an increment (decrement) in interest rate on lending of Nepal SBI Bank Limited brings decrement (increment) in amount loaned.

Similarly, the correlation coefficient between interest rate on lending and interest rate on deposit, r_{bd} , is 0.6656 which means that these two variables are positively correlated. The direction and proportion of both rates is same i.e. if interest rate on deposit increases, the interest rate on lending also increases in same direction at moderate proportion and vice-versa. The coefficient of determination between these variables, r^2_{bd} , is 0.4430 which means that 44.30 percent of total variation in dependent variable (interest rate on lending) has been explained by the independent variable (interest rate on deposit) and remaining variance is the response of the other factors in the economy. The t- statistics for testing the significance of the correlation coefficient is 1.9942 which is smaller than tabulated value. Since the calculated t-value is smaller than tabulated value at 5 percent level of

significance for 5 degree of freedom (2.571) the correlation coefficient is not significant which means that interest rate on deposit and that of lending of Nepal SBI Bank Limited are not correlated and movement in interest rate on deposit does not bring the movement in interest rate on lending.

Another variable in economy that affects interest rate is the inflation. The correlation coefficient between interest rate on deposit and inflation rate, r_{be} , is -0.3375 which means that these two variables are negatively correlated. According to the theories, there must be positive correlation between interest rate on deposit and inflation. But in our context, such theories do not apply in practical field. The coefficient of determination, r^2_{be} , is 0.1139, it means only 11.39% of the total variation in dependent variable (i.e. interest rate on deposit) is explained due to independent variable (inflation) and remaining variation is due to the external factors in the economy. T- value for testing the significance of correlation coefficient is 0.8017 which is less than the tabulated t-value for 5 degree of freedom at 5 percent level of significant which means that the interest rate on deposit of Nepal SBI Bank Limited is not correlated with inflation rate and the movement in inflation does not affect the interest rate on deposit significantly.

The risk-free rate is another variable in the economy that affects interest rate in Nepalese Banking and Finance Companies. The correlation coefficient between interest rate on deposit of Nepal SBI Bank Limited and the risk-free rate (rate on 91 days Treasury bill), r_{bf} , is 0.8218, which shows that the variables are highly positively correlated. The change in risk-free rate leads the change in interest rate in same direction at high proportion. The coefficient of determination, r^2_{bf} , is 0.6753, which means that 67.53% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-

free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 3.2248, which is greater than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is greater than the tabulated value, the correlation coefficient is significant which means that the interest rate on deposit of Nepal SBI Bank Limited is correlated with risk-free rate and the movement in risk-free rate affects the interest on deposit significantly in the same direction.

The relationship of interest rate on lending of Nepal SBI Bank Limited with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending, r_{de} , is -0.8104, which shows that the variables are highly negatively correlated. Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between these variables, r^2_{de} , is 0.6567, which means that 65.67% of total variation in dependent variable (interest rate on lending) has been explained by the independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 3.0938. Since the calculated t-value for 5 degree of freedom at 5% level of significance 2.571, the variables are significantly correlated. This means that the lending rate on Nepal SBI Bank Limited is significantly correlated with inflation rate.

The effect of risk-free rate of interest rate on lending of Nepal SBI Bank Limited has also been examined through the analysis of correlation between these variables. The coefficient of correlation between these variables, r_{df} , is 0.4127. This means that there is positive relation between these variables. Since interest rate is dependent on risk-free rate; the variation in risk-free rate brings the variation in interest rate on lending in the same

direction. The coefficient of determination between these variables is 0.1703 which indicates that 17.03% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 1.0131. Since the calculated t-value is smaller than tabulated value at 5 percent level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of Nepal SBI Bank Limited is not significantly affected by the risk-free rate.

To examine the combined effect of two factors in interest at once multiple correlation coefficients has been computed. The multiple correlation coefficient taking interest rate on deposit as dependent and amount deposited and interest rate on lending as independent, $R_{b.ad}$, is 0.6795. The coefficient of multiple determination, $R^2_{b.ad}$ is 0.4617 which means that 46.17% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficient assuming interest rate on deposit as dependent and inflation and risk-free rate as independent, $R_{b.ef}$, is 0.8527. The coefficient of multiple determination $R^2_{b.ef}$ is 0.7271 which means that 72.71% of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d.bc}$, is 0.9717. The coefficient of multiple determination, $R^2_{d.bc}$, is 0.9442 which means that total

variation in dependent variables has been explained by two independent variables to the extent of 94.42% and remaining is the effect of other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.8659. The coefficient of multiple determination, $R^2_{d,ef}$ is 0.7498 has meaning that 74.98% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.2 Nabil Bank Limited (Nabil)

Table 4.3

Amount of Deposit and Lending, Interest Rate on Deposit and Lending of Nabil Bank Limited (Nabil) and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	Lending Rate (%) (d)	Inflation Rate (%) (e)	Risk-free Rate (%) (f)
2002	15370.60	3.45	7072.00	9.99	2.90	4.71
2003	13437.70	3.34	8010.90	9.27	4.80	3.48
2004	14098.00	2.80	8652.20	9.60	4.00	2.93
2005	14586.80	3.20	11360.30	9.35	4.50	2.46
2006	19348.40	3.23	13278.80	9.54	8.00	2.84
2007	23342.28	2.81	15903.00	8.625	7.38	2.42
2008	31915.05	4.66	21769.70	8.71	11.03	3.85

Source: Annual reports of Nabil bank limited and various banking & financial statistics published by NRB

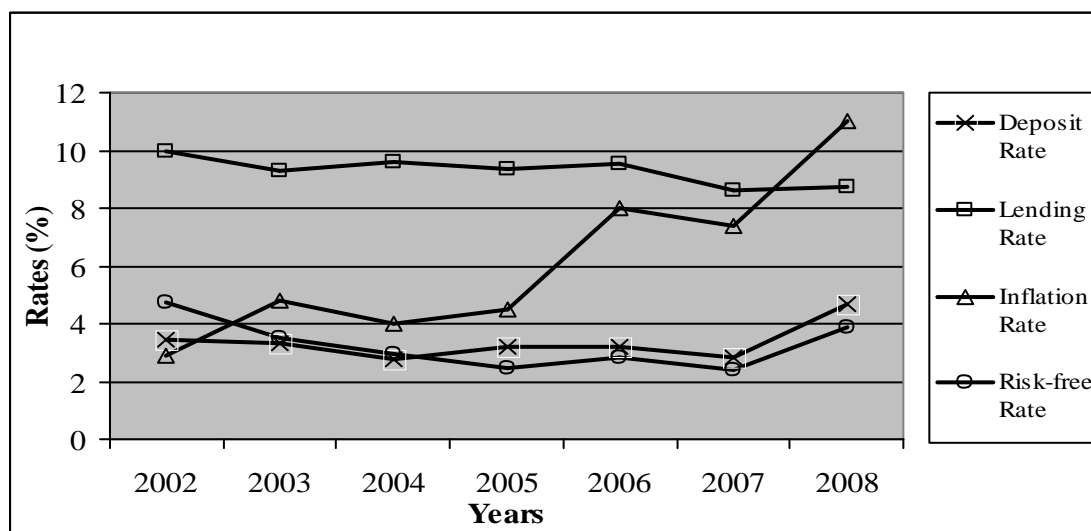
Table 4.3 shows the total amount deposited, interest rate offered on such deposit, amount loaned and interest on such lending of Nabil Bank Limited. It also consists of inflation rate and risk-free rate of interest for seven fiscal years covering from 2002 to 2008. To

show the impact of other variables on interest rate, various correlations have been computed and presented in Table No. 4.4. Multiple correlation coefficients between variables, assuming interest rate as a dependent variable, have also been calculated and presented in Table 4.4.

Table No. 4.4
Correlation Analysis of Nabil Bank Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	0.6930	0.4802	2.1493	2.571	Insignificant
r_{bd}	-0.2950	0.0870	0.6903	2.571	Insignificant
r_{cd}	-0.8143	0.6631	3.1370	2.571	Significant
r_{be}	0.6203	0.3848	1.7684	2.571	Insignificant
r_{bf}	0.5523	0.3050	1.4814	2.571	Insignificant
r_{de}	-0.7473	0.5584	2.5146	2.571	Insignificant
r_{df}	0.4015	0.1612	0.9803	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.7624$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.5812$
		$R_{d.bc} = 0.8538$			$R^2_{d.bc} = 0.7289$
		$R_{b.ef} = 0.8930$			$R^2_{b.ef} = 0.7974$
		$R_{d.ef} = 0.8063$			$R^2_{d.ef} = 0.6501$

Figure 4.2
Relationship between Rates of Nabil



The correlation coefficient between interest rate on deposits and the amount of deposit, r_{ab} , is 0.693. This means that these two variables are moderately positively correlated.

When supply of loanable fund increases; the interest rate on such deposit also increases.

The coefficient of determination between these two variables, r^2_{ab} , is 0.4802 which means 48.02% of total variation in interest rate on deposit is explained by independent variable (i.e. supply of loanable fund) and remaining is due to the effect of other factors in the economy. The correlation coefficient is not statistically significant because calculated t-value is smaller than tabulated value at 5 percent level of significance for 5 degree of freedom ($2.1493 < 2.571$). Hence amount of deposit collected does not affect the interest rate on deposit. This means that the variables mentioned (interest rate on deposit and amount deposited) of Nabil Bank Limited are not correlated significantly.

The correlation coefficient between interest rate on lending and amount of loan advance, r_{cd} , is -0.8143, which means there is high degree of negative correlation between them.

According to the assumption of the study interest rate is dependent variable and there should be positive correlation between these two variables, which means that increased demand of loanable fund also causes increment in the interest rate. But this negative correlation of coefficient between these variables tells that more loans are demanded at lower rate i.e. demand is dependent on interest rate. The coefficient of determination, r^2_{cd} , is 0.6631 which means 66.31% of total variation in interest rate on lending is due to the volume of lending and remaining is the effect of other factors. T-value for testing the significance of the correlation is 3.137, which is greater than the tabulated value at 5% level of significance for 5 degree of freedom, the variables are correlated significantly. This means that amount loaned of Nabil is significantly correlated with the interest rate on lending.

Similarly, the correlation coefficient between interest rate on lending and interest rate on deposit, r_{bd} , is -0.295 which means that these two variables are negatively correlated. Their direction of movement is opposite and the proportion of correlation is low. The coefficient of determination between these variables, r^2_{bd} is 0.087, which means that 8.7% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (interest rate on deposit) and remaining variance is due to other factors. T-statistics for coefficient, r_{bd} , is 0.6903 which is smaller than tabulated value at 5 percent level of significance for 5 degree of freedom, 2.571, the correlation is not significant. Hence the variables (interest rate on deposit and on lending) are not significantly correlated and the movement in interest rate on deposit does not bring the movement in interest rate on lending.

The correlation coefficients between interest rate on deposit and inflation rate and, between interest rate on deposit and risk-free rate (r_{be} & r_{bf}) are moderately positively correlated i.e., 0.6203 and 0.5523 respectively which shows that both the factors affect the interest rate on deposit offered by Nabil. The coefficient of determinations (r^2_{be} & r^2_{bf}) shows their respective percent of variation in dependent variable (interest rate on deposit) i.e. 38.48 and 30.50 percentage, respectively. The t-values for testing both the correlation coefficient (r_{be} & r_{bf}) are smaller than tabulated value at 5 percent level of significance for 5 degree of freedom ($1.7684 < 2.571$ and $1.4814 < 2.571$). Since, the calculated values are smaller than tabulated value both the coefficients are statistically insignificant. Thus, it can be said that the impact of inflation and risk-free rate on interest rate on deposit offered by Nabil is not significant even if the correlation coefficient shows the positive relationship between variables. In other words, the inflation and risk-free rate do not affect interest rate on deposit significantly.

The coefficient of correlation between inflation and interest rate on lending, r_{de} , is -0.7473, which shows that the variables are highly negatively correlated. Movement of inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between these variables, r_{de}^2 , is 0.5584, which means that 55.84% of total variables in dependent variable (interest rate on lending) have been explained by the independent variable (inflation rate) and remaining is due the effect of other factors. Since the t- statistics for testing the significance of correlation coefficient between interest rate on lending and inflation is 2.5146, which is smaller than tabulated value at 5 percent level of significance for 5 degree of freedom, 2.571, the correlation coefficient is not significant. It means that inflation has no any significant influence on interest rate charged by Nabil. In other words, interest rate on lending of Nabil is not affected by inflation.

The coefficient of correlation between risk-free rate and interest rate on lending, r_{df} , is 0.4015. This means there is positive relation between these variables. Since interest rate is dependent on risk-free rate; the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between these variables is 0.1612 which indicates that 16.12% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is due to the effect of other factors. The t-value for testing the significance of the correlation coefficient is 0.9803, which is lower than the tabulated value at 5% level of significance for 5 degree of freedom (2.571). Hence the correlation coefficient is not significant. This means that the interest rate on lending of Nabil is not significantly affected by the risk-free rate.

The multiple correlation coefficient assuming two variables amount deposited (a) and interest rate on lending (d) as independent variables and interest rate on deposit (b) as dependent variable, $R_{b,ad}$ is 0.7624. The coefficient of multiple determination, $R^2_{b,ad}$ is 0.5812 which means that total variation in dependent variable is caused by two independent variables (a) and (d) is 58.12% and remaining 41.88% is caused by other factors. Similarly, the multiple correlation coefficient taking interest rate on deposit as dependent variable and inflation and risk-free rate as independent variables, $R_{b,ef}$, is 0.8930. The coefficient of multiple determination $R^2_{b,ef}$ is 0.7974 which means that 79.74% of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d,bc}$, is 0.8538. The coefficient of multiple determination, $R^2_{d,bc}$, is 0.7289 shows that independent variables are responsible to 72.89% of total variation in dependent variable and remaining 27.11% is caused by other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.8063. The coefficient of multiple determination, $R^2_{d,ef}$, is 0.6501 has meaning that 65.01% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.3 Nepal Investment Bank Limited (NIBL)

Table 4.5

Amount of Deposit and Lending, Interest Rate on Deposit and Lending of NIBL and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit Amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan Amount (Rs. In million) (c)	Lending Rate (%) (d)	Inflation Rate (%) (e)	Risk-Free Rate (%) (f)
2002	4174.80	5.11	2715.70	11.38	2.90	4.71
2003	7922.80	5.11	5949.20	11.38	4.80	3.48
2004	11706.30	5.11	7290.20	11.38	4.00	2.93
2005	14254.80	2.66	10490.40	9.05	4.50	2.46
2006	18927.30	2.66	13171.50	9.05	8.00	2.84
2007	24488.90	2.66	17769.10	9.05	7.38	2.42
2008	34451.80	3.10	27529.30	9.14	11.03	3.85

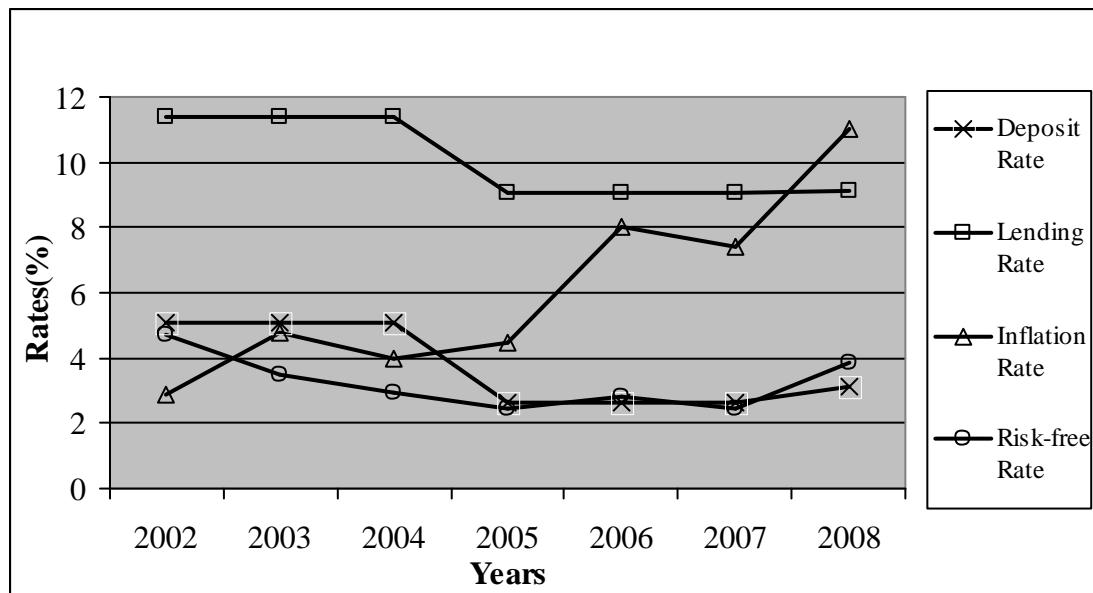
Source: Annual reports of NIBL and various banking & financial statistics published by NRB.

Table 4.5 depicts the total amount deposited, average interest offered on such deposits, total amount loaned, interest rate charged on such lending of NIBL for seven fiscal years covering from Fiscal year 2002 to 2008. Table 4.5 also contains the inflation rate and risk-free rate (91days Treasury bill rate) for the same fiscal years. The correlation coefficient between interest rate and other variables are presented in table 4.6. Lower part of table 4.6 contains the multiple correlation coefficient and coefficient of multiple determinations.

Table 4.6
Correlation Analysis of NIBL

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.7079	0.5011	2.241	2.571	Insignificant
r_{bd}	0.9952	0.9904	22.712	2.571	Significant
r_{cd}	-0.7440	0.5535	2.4897	2.571	Insignificant
r_{be}	-0.6468	0.4183	1.8963	2.571	Insignificant
r_{bf}	0.5880	0.3457	1.6254	2.571	Insignificant
r_{de}	-0.7055	0.4977	2.2259	2.571	Insignificant
r_{df}	0.5370	0.2883	1.4233	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.8802$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.7747$
		$R_{d.bc} = 0.99$			$R^2_{d.bc} = 0.9801$
		$R_{b.ef} = 0.8203$			$R^2_{b.ef} = 0.6729$
		$R_{d.ef} = 0.8341$			$R^2_{d.ef} = 0.6957$

Figure 4.3
Relationship between Rates of NIBL



The correlation coefficient between interest rate on deposits and amount deposit (r_{ab}) is -0.7079. This means that these two variables are highly negatively correlated. When

supply of loanable fund (supply of deposit) increase, the interest rate on such deposit decreases. In general concept, interest rate on deposit should be positively correlated meaning that higher rate attracts more deposit. But we have assumed that interest rate is dependent factor, which is determined by supply of loanable fund. Hence, the negative correlation between these two variables is not surprising. The coefficient of determination between these two variables, r^2_{ab} , is 0.5011 which means that 50.11% of total variation in interest rate on deposit has been explained by independent variable i.e. amount of deposit collected and remaining is due to the effect of other factors in the economy. T-statistics for testing the significance of the correlation is 2.241. Since the tabulated t-value at 5 percent level of significance for 5 degree of freedom, 2.571, is greater than the calculated value, correlation coefficient is not significant. This means that the variables mentioned (interest rate on deposit and amount deposited) of NIBL are not correlated significantly.

The correlation coefficient between interest rate on lending and amount of loan advanced, r_{cd} , has been found negative (-0.744) which means the variables are highly negatively correlated. According to the assumption of the study, interest rate is dependent and there should be a positive correlation between these two variables, which means that increased demand of loanable fund also causes increment in the interest rate. But this negative correlation of coefficient between these variables tells that more loans (funds) are demanded at lower rates i.e. demand is dependent on interest rate. The coefficient of determination, r^2_{cd} , is 0.5535 which means that 55.35 percent of total variation in amount loaned has been explained by the variation in interest rate on lending and remaining is the effect of other factors. T-value for testing the significance of the correlation coefficient is 2.4897 which is lower than tabulated value 2.571. Since the calculated t-value (2.4897) is smaller than the tabulated t-value at 5 percent level of significance for 5 degree of

freedom (2.571), correlation coefficient is not significant. It means that the variables (interest rate on lending and amount loaned) are not significantly correlated. An increase (decrease) in interest rate on lending does not bring the decrement (increment) in amount loaned by NIBL which means that interest rate on lending of NIBL is not affected by amount loaned.

Similarly, the correlation coefficient between interest rate on lending and interest rate on deposit, r_{bd} , is 0.9952 which means that these two variables are highly positively correlated. The direction and proportion of movement of both rates is same. If interest rate on deposit increases, the interest rate on lending also increases the interest rate on lending also increases in almost same proportion and vice-versa. The coefficient of determination between these, r_{bd} , is 0.9904 which means that 99.04% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (interest rate on deposit) and remaining variance is the response of the other factors in the economy. Test statistics for testing the significance of the correlation coefficient is 22.712 which is highly greater than tabulated value. Since the calculated t-value is highly greater than tabulated value at 5% level of significance for 5 degree of freedom (2.571) the correlation coefficient is highly significant which means the interest rate on deposit and that on lending of NIBL are highly correlated and movement in interest rate on deposit brings the movement in interest rate on lending.

Another variable in economy that affects interest rate is the inflation. The correlation coefficient between interest rate on deposit and inflation rate, r_{be} , is -0.6468 which means that these two variables are negatively correlated. According to the theories, there must be positive correlation between interest rate on deposit and inflation. But in our context,

Nepal, such theories do not apply in practical field. The coefficient of determination, r_{be}^2 , is 0.4183, it means only 41.83% of total variation in dependent variable (i.e. interest rate on deposit) is explained by independent variable (i.e. inflation) and remaining variation is due to the external factors in the economy. T-value for testing the significance of correlation coefficient is 1.8963, which is less than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is less than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of NIBL is not correlated with inflation rate and movement in inflation rate does not affect the interest rate on deposit significantly.

Another variable in the economy, which is considered to be affecting factor of interest rate in financial market, is the risk-free rate. The correlation coefficient between interest rate on deposit of NIBL and risk-free rate (rate on 91 days Treasury bill) r_{bf} , is 0.5880, which shows that the variables are moderately positively correlated. The change in risk-free rate leads the change in interest rate in same direction with moderate proportion. The coefficient of determination r_{bf}^2 is 0.3457 which means that only 34.57% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. The t-value of testing the significance of the correlation coefficient is 1.6254 which is significantly smaller than the tabulated value for 5 degree of freedom at 5% level of significance, 2.571. From this it is revealed that interest rate on deposit of NIBL is not significantly correlated with the risk-free rate and risk-free rate does not affect interest rate on deposit of NIBL significantly.

Similarly the relationship of interest rate on lending of NIBL with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending, r_{de} , is -0.7055 which shows that the variables are moderately negatively correlate.

Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between these variables r_{de}^2 is 0.4977, which means that 49.77% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 2.2259. Since the calculated t-value is smaller than the tabulated t-value for 5 degree of freedom at 5 percent level of significance, 2.571, the variables are not correlated significantly. This means that the lending rate of NIBL is not significantly correlated with the inflation rate.

The effect of risk-free rate of interest on interest rate on lending of NIBL has also been examined through the analysis of correlation between these variables. The coefficient of correlation between these variables, r_{df} , is 0.537. This means that there is positive relationship between these variables. Since, interest rate is dependent on risk-free rate; the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between variables is 0.2883 which indicates that 28.83% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value of testing the significance of the correlation coefficient is 1.4233. Since the calculated t-value at 5 percent level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of NIBL is not significantly affected by the risk-free rate.

To examine the combined effect of two factors on interest at once, multiple correlation coefficients has also been computed. The multiple correlation coefficient taking interest rate on deposit as dependent and amount deposited and interest rate on lending as

independent $R_{b,ad}$ is 0.8802. The coefficient of multiple determination, $R^2_{b,ad}$ is 0.7747 which means that 77.47% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficient assuming interest rate on deposit as dependent and inflation and risk-free rate as independent, $R_{b,ef}$, is 0.8203. The coefficient of multiple determination $R^2_{b,ef}$ is 0.6729 which means that 67.29% of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d,bc}$, is 0.99. The coefficient of multiple determination, $R^2_{d,bc}$, is 0.9801 which means that total variation in dependent variables has been explained by two independent variables to the extent of 98.01% and remaining is the effect of other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.8341. The coefficient of multiple determination, $R^2_{d,ef}$ is 0.6957 means that 69.57% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.4 Everest Bank Limited (EBL)

Table 4.7

Amount of Deposit and Lending, Interest Rate on Deposit and Lending of EBL and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	5461.10	5.34	3969.60	10.60	2.90	4.71
2003	6694.90	4.50	5030.90	10.14	4.80	3.48
2004	8064.00	4.50	6116.60	10.07	4.00	2.93
2005	10097.80	2.78	7944.10	8.86	4.50	2.46
2006	13802.45	3.50	10154.90	7.66	8.00	2.84
2007	19097.77	3.28	14100.00	7.90	7.38	2.42
2008	23976.30	3.875	18836.40	8.30	11.03	3.85

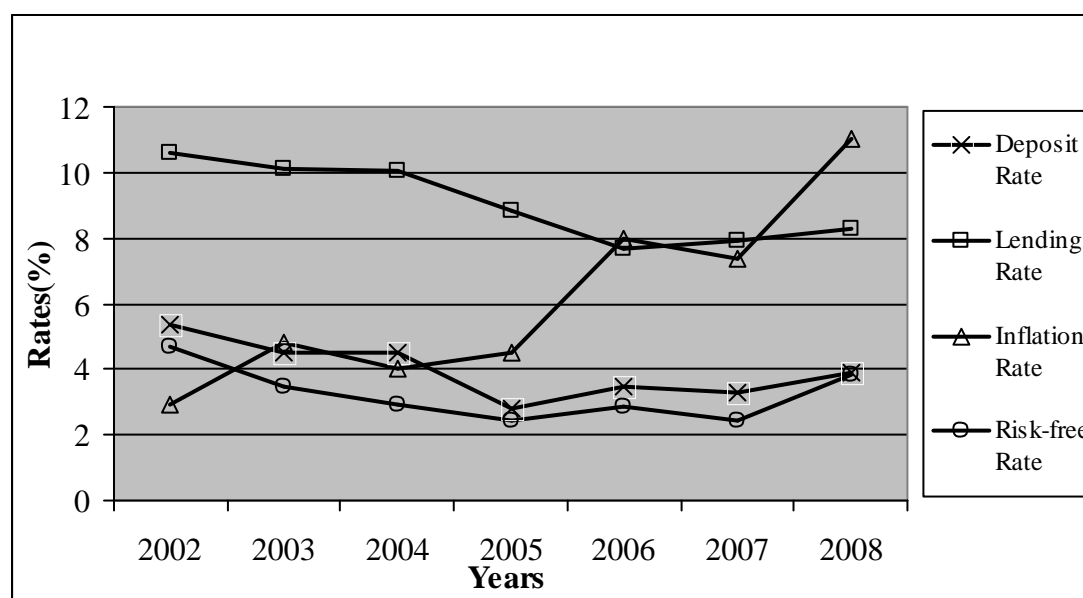
Source: Annual reports of EBL and various banking & financial statistics published by NRB.

Table 4.7 shows the amount of deposit, interest rate on deposit, amount of loan advanced and interest rate on lending of EBL for seven fiscal years from 2002 to 2008. Similarly it also contains the inflation rate and risk-free rate of interest for the same period. The correlation coefficients between variables have been presented in table 4.8 and it also contains the multiple correlation coefficients and coefficients of multiple determination. To test the significance of correlation coefficient, t-values have also been presented.

Table 4.8
Correlation Analysis of Everest Bank Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.5115	0.2616	1.331	2.571	Insignificant
r_{bd}	0.8021	0.6433	3.0	2.571	Significant
r_{cd}	-0.7800	0.6084	2.787	2.571	Significant
r_{be}	-0.4390	0.1927	1.0925	2.571	Insignificant
r_{bf}	0.8310	0.6905	3.34	2.571	Significant
r_{de}	-0.7910	0.6256	2.8906	2.571	Significant
r_{df}	0.5774	0.3330	1.581	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.8303$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.6894$
		$R_{d.bc} = 0.9115$			$R^2_{d.bc} = 0.8303$
		$R_{b.ef} = 0.8937$			$R^2_{b.ef} = 0.7987$
		$R_{d.ef} = 0.9220$			$R^2_{d.ef} = 0.8501$

Figure 4.4
Relationship between Rates of EBL



The correlation coefficient between amount deposited and interest rate on deposit, r_{ab} , is -0.5115. This means that these two variables are moderately correlated and the relationship

is negative. The negative relationship shows that when deposit increases (i.e. supply of fund) the interest rate (i.e. return on deposit) on such deposit decreases. The coefficient of determination between these two variables, r_{ab}^2 , is 0.2616 which means that total variation in interest rate on deposit has been explained by supply of deposits to the extent of 26.16% and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient between variables, 1.331, is lower than the tabulated t-value at 5% level of significance for 5 degree of freedom, 2.571. This means that the variables mentioned (interest rate on deposit and deposited amount) of EBL are not correlated significantly.

The correlation coefficient between amounts of loan advanced and interest rate on lending, r_{cd} , is -0.78. This means that the variables are negatively correlated and the degree of relationship is high. This negative correlation coefficient reveals that when interest on lending decreases, the amount of loan advanced increases. Here the amount of loan is dependent variable, which is affected by interest rate on lending. The coefficient of determination, r_{cd}^2 , is 0.6084 which means that 60.84 percent of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (lending amount) and remaining is due to the effect of other factors. T-value for testing the significance of the correlation coefficient between variables c and d is 2.787. Since the calculated t-value (2.787) is greater than the tabulated t-value at 5 percent level of significance for 5 degree of freedom (2.571), correlation coefficient is significant which means that the variables (interest rate on lending and amount loaned) are significantly correlated. An increase (decrease) in interest rate on lending brings the decrement (increment) in amount loaned by EBL.

Similarly, the correlation coefficient between interest rate on lending and interest rate on deposit, r_{bd} , is 0.8021. This shows that there is high degree of positive correlation between these two variables. The positive correlation shows that an increment in interest rate on deposit brings increment in interest rate on lending. The coefficient of determination between these two variables is 0.6433 which means that 64.33% of total variation in the interest rate on lending has been explained by the variation in interest rate on deposit and remaining is due to the effect of other factors. T-value for testing the significance of the correlation coefficient is 3.0 which is greater than the tabulated value at 5 percent level of significance for 5 degree of freedom, 2.571. Since the calculated value is greater than the tabulated value, the correlation coefficient is significant which means that both the interest rates are correlated.

The correlation coefficient between interest rate on deposit and inflation rate, r_{be} , is -0.4390 which means that these two variables are negatively correlated. According to the theories, there must be positive correlation between interest rate on deposit and inflation. But in our context, Nepal, such theories do not apply in practical field. The coefficient of determination, r_{be}^2 , is 0.1927. It means only 19.27% of the total variation in dependent variable (i.e. interest rate on deposit) is explained by independent variable (i.e. inflation) and remaining variation is due to the external factors in the economy. T-value for testing the significance of correlation coefficient is 1.0925 which is less than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is less than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of EBL is not correlated with inflation rate and the movement in inflation rate does not affect the interest rate on deposit.

Similarly, the impact of risk-free rate of interest on deposit has been examined through the correlation analysis. The correlation coefficient between these variables, r_{bf} , is 0.831 which shows that the variables are highly correlated. The change in risk free rate leads the change in interest rate in same direction at high proportion. The coefficient of determination r^2_{bf} is 0.6905, which means that 69.05% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 3.34, which is greater than the tabulated value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is greater than the tabulated value, the correlation coefficient is significant which means that the interest rate on deposit of EBL is correlated with risk-free rate and the movement in risk-free rate affects the interest rate on deposit significantly in the same direction.

The relationship of interest rate on lending of EBL with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending, r_{de} , is -0.7910, which shows that the variables are highly negatively correlated. Movement in inflation rate leads movement in interest rate on lending on opposite direction. The coefficient of determination between these variables r^2_{de} is 0.6256, which means that 62.56% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 2.8906. Since the calculated t-value is greater than the tabulated t-value for 5 degree of freedom at 5% level of significance (2.571), the variables are correlated significantly. This means that the lending rate of EBL is significantly correlated with inflation.

The effect of risk-free rate of interest on lending of EBL has also been examined through the analysis of correlation between these variables. The coefficient of correlation between these variables r_{df} is 0.5774. This means that there is positive relation between these variables. Since interest rate is dependent on risk-free rate; the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between these variables is 0.333 which indicates that 33.30% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 1.581; since the calculated t-value is smaller than tabulated value at 5 percent level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of EBL is not significantly affected by the risk-free rate.

To know the effects of two factors at once on interest rate, multiple correlations has been computed and presented at the lower part of Table No. 4.8. The multiple correlation coefficient between interest rate on deposit as dependent and amount deposited and interest rate on lending as independent $R_{b,ad}$ is 0.8303. The coefficient of multiple determination, $R^2_{b,ad}$ is 0.6894 which means that 68.94% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficient assuming interest rate on deposit as dependent and inflation and risk-free rate as independent, $R_{b,ef}$ is 0.8937. The coefficient of multiple determination $R^2_{b,ef}$ is 0.7987 which means that 79.87% of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables

(inflation and risk-free rate) and remaining variation has been explained by other variables.

Similarly, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent variables, $R_{d,bc}$, is 0.9115. The coefficient of multiple determination, $R^2_{d,bc}$, is 0.8303 which means that total variation in dependent variables has been explained by two independent variables to the extent of 83.03% and remaining is the effect of other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.9220. The coefficient of multiple determination, $R^2_{d,ef}$ is 0.8501 means that 85.01% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.5 Standard Chartered Bank Nepal Limited (SCBNL)

Table 4.9

Amount of Deposit and Lending, Interest Rate on Deposit and Lending of SCBNL and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	15835.70	2.89	5787.90	10.33	2.90	4.71
2003	18755.50	2.82	6080.70	10.15	4.80	3.48
2004	21161.40	1.85	6729.60	9.92	4.00	2.93
2005	19349.00	1.72	8527.10	9.68	4.50	2.46
2006	23050.50	1.75	9206.30	8.63	8.00	2.84
2007	24640.30	1.75	10790.00	8.63	7.38	2.42
2008	29743.90	2.02	13964.40	8.63	11.03	3.85

Source: Annual reports of SCBNL and various banking & financial statistics published by NRB.

Table 4.10
Correlation Analysis of Stantard Chartered Bank Nepal Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.555	0.3080	1.492	2.571	Insignificant
r_{bd}	0.6867	0.4715	2.1122	2.571	Insignificant
r_{cd}	-0.8709	0.7584	3.9619	2.571	Significant
r_{be}	-0.4358	0.1899	1.7518	2.571	Insignificant
r_{bf}	0.568	0.323	1.544	2.571	Insignificant
r_{de}	-0.8935	0.7983	4.4486	2.571	Significant
r_{df}	0.4272	0.1825	1.0565	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.6904$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.4766$
		$R_{d.bc} = 0.9065$			$R^2_{d.bc} = 0.8217$
		$R_{b.ef} = 0.6738$			$R^2_{b.ef} = 0.4540$
		$R_{d.ef} = 0.9453$			$R^2_{d.ef} = 0.8936$

Figure 4.5
Relationship between Rates of SCBNL

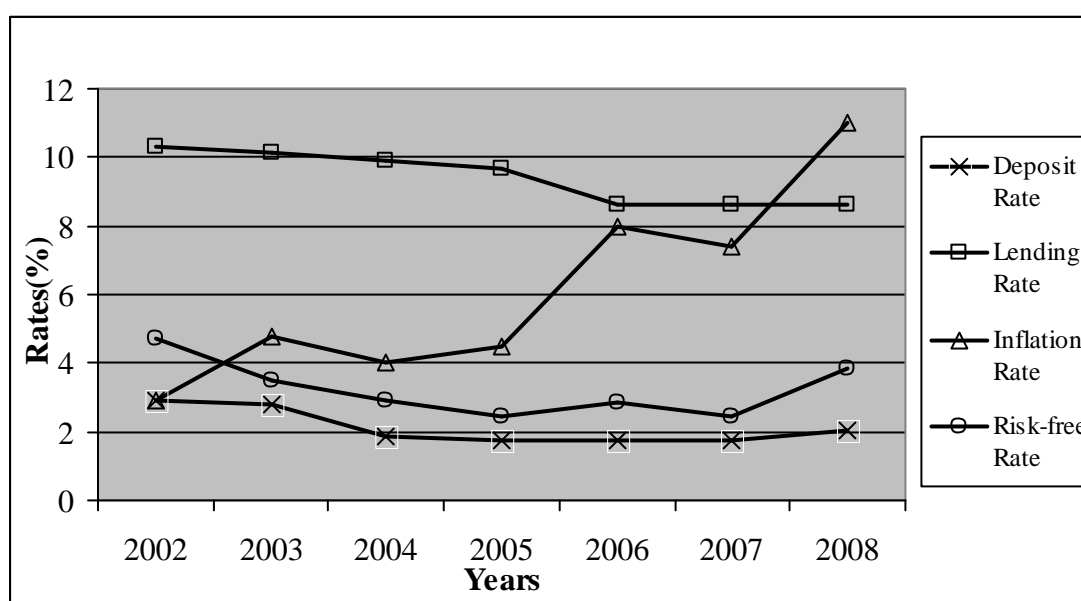


Table 4.9 shows the total amount deposit, interest rate on deposit, amount of loan advanced and interest rate on lending of SCBNL for seven fiscal years from 2002 to 2008. It also contains the inflation rate and risk-free rate of interest for the same period. To show the impact of other variables on interest rate, various correlations have been computed and presented in table 4.10. Multiple correlation coefficients between variables, assuming interest rate as a dependent variable, have also been calculated and presented in table 4.10.

The correlation coefficient between interest rate on deposit and the amount of deposit (r_{ab}) is -0.555. This means that these two variables are moderately negatively correlated. When supply of loanable fund (supply and deposit) increases; the interest rate on such deposit decreases. The coefficient of determination between these two variables r^2_{ab} is 0.3080 which means 30.80% of total variation in interest rate on deposit is explained by independent variable (i.e. supply of loanable fund) and remaining is due to the effect of other factors in the economy. T-statistics for testing the significance of the correlation is 1.492. Since the tabulated t-value at 5% level of significance for 5 degree of freedom (2.571) is greater than the calculated value, correlation coefficient is insignificant. This means that the variables mentioned (interest rate on deposit and amount deposited) of SCBNL are not correlated significantly.

The correlation coefficient between interest rate on lending and amount of loan advanced r_{cd} is -0.8709, which means there is high degree of negative correlation between them. The coefficient of determination, r^2_{cd} , is 0.7584 means that 75.84% of total valuation in interest rate on lending is due to the volume of lending and remaining is the effect of other factors. T-value for testing the significance of the correlation is 3.9619, which is greater than the tabulated value at 5% level of significance for 5 degree of freedom, the

variable are correlated significantly. This means that amount loaned of SCBNL is significantly correlated with the interest rate on lending.

Similarly the correlation coefficient between interest rate on lending and interest rate on deposit, r_{bd} , is 0.6867 which means that these two variables are moderately positively correlated. Increase in interest rate on lending causes increase in interest rate on deposit. The coefficient of determination between these two variables r^2_{bd} is 0.4715, which means that 47.15% of total variation in dependent variable (interest rate on deposit) and remaining variance is due to the other factors in the economy. T-statistics for testing the significance of the correlation coefficient is 2.1122 which is less than tabulated value. Since the calculated t-value is less than the tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant, which indicates that the lending rate and the deposit rate are not correlated significantly.

The correlation coefficient between interest rate on deposit and inflation rate, r_{be} , is -0.4358 which means that these two variables are negatively correlated. According to the theories, there must be positive correlation between interest rate on deposit and inflation. But in our context, Nepal, such theories do not apply in practical field. The coefficient of determination, r^2_{be} , is 0.1899, it means only 18.99% of the total variation in dependent variable (i.e. interest rate on deposit) is explained by the independent variable (i.e. inflation) and remaining variation is due to the external factors in the economy. T-value for testing the significance of correlation coefficient is 1.7518 which is less than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is less than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of SCBNL is not correlated with

inflation rate and the movement in inflation rate does not affect the interest rate on deposit significantly.

Another variable in the economy, which is considered to be affecting factor of interest rate in financial market, is the risk-free rate. The correlation coefficient between interest rate on deposit of SCBNL and the risk-free rate (91 days Treasury bill) r_{bf} is 0.568, which shows that the variables are moderately positively correlated. The change in risk-free rate leads the change in interest rate in same direction. The coefficient of determination r_{bf}^2 is 0.323, which means that 32.30% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 1.544 which is lower than the tabulated value; the correlation coefficient is insignificant which means that the interest rate on deposit of SCBNL is not correlated with risk-free rate.

Similarly, the relationship of interest rate on lending of SCBNL with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending r_{de} is -0.8935, which shows that the variables are highly negatively correlated. Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between those variables, r_{de}^2 , is 0.7983, which means that 79.83% of total variation in dependent variables (interest rate on lending) has been explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 4.4486. Since the calculated t-value is greater than the tabulated value for 5 degree of freedom at 5% level of significance (2.571) the variables are correlated

significantly. This means that the lending rate of SCBNL is significantly correlated with inflation rate.

The effect of risk-free rate of interest rate on lending of SCBNL has also been examined through the analysis of correlation between these variables. The coefficient of correlation between these variables, r_{df} , is 0.4272. This means that there is positive relationship between these variables. Since interest rate is dependent on risk-free rate, the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between these variables is 0.1825 which indicates that 18.25% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 1.0565; since the calculated t-value is smaller than tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of SCBNL is not significantly affected by the risk-free rate.

To examine the combined effect of two factors in interest at once multiple correlation coefficients has been computed. The multiple correlation coefficient taking interest rate on deposit as dependent and amount deposited and interest rate on lending as independent $R_{b.ad}$ is 0.6904. The coefficient of multiple determination, $R^2_{b.ad}$ is 0.4766 which means that 47.66% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficient assuming interest rate on deposit as dependent and inflation and risk-free rate as independent, $R_{b.ef}$, is 0.6738. The coefficient of multiple determination $R^2_{b.ef}$ is 0.4540, which means that 45.40% of total variation in dependent variable (interest rate on deposit)

has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d.bc}$, is 0.9065. The coefficient of multiple determination, $R^2_{d.bc}$, is 0.8217 which means that total variation in dependent variables has been explained by two independent variables to the extent of 90.65% and remaining is the effect of other factors. The multiple correlation coefficients assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d.ef}$, is 0.9453. The coefficient of multiple determination, $R^2_{d.ef}$ is 0.8936 has meaning that 89.36% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.6 Nepal Development Bank Limited (NDBL)

Table 4.11 shows the total amount deposited interest rate offered on such deposit, amount loaned and interest on such lending of NDBL. Table 4.11 also consists of inflation rate and risk-free rate of interest for seven fiscal years covering from 2002 to 2008. To show the impact of other variables on interest rate, various correlations have been computed and presented in table 4.12. Multiple correlation coefficients between variables, assuming interest rate as a dependent variable, have also been calculated and presented in table 4.12.

Table 4.11
Amount of Deposit and Lending, Interest Rate on Deposit and Lending of NDBL
and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	1903.00	5.88	1605.70	11.66	2.90	4.71
2003	1985.80	5.38	1443.90	11.67	4.80	3.48
2004	1845.50	5.00	1532.80	11.67	4.00	2.93
2005	1631.30	5.00	842.20	11.07	4.50	2.46
2006	1538.10	5.00	623.70	11.07	8.00	2.84
2007	1312.10	5.00	643.80	11.07	7.38	2.42
2008	457.50	4.57	445.80	10.77	11.03	3.85

Source: Annual reports of NDBL and various banking & financial statistics published by NRB.

Note:

- Deposit amount and lending amount of sample development banks are shown in appendix-4.
- Interest rate structures of deposit of sample development banks are shown in appendix-8.
- Interest rate structures of lending of sample development banks are shown in appendix-9.
- Inflation rate is shown in appendix-12.
- Risk-free rate is shown in appendix-13.

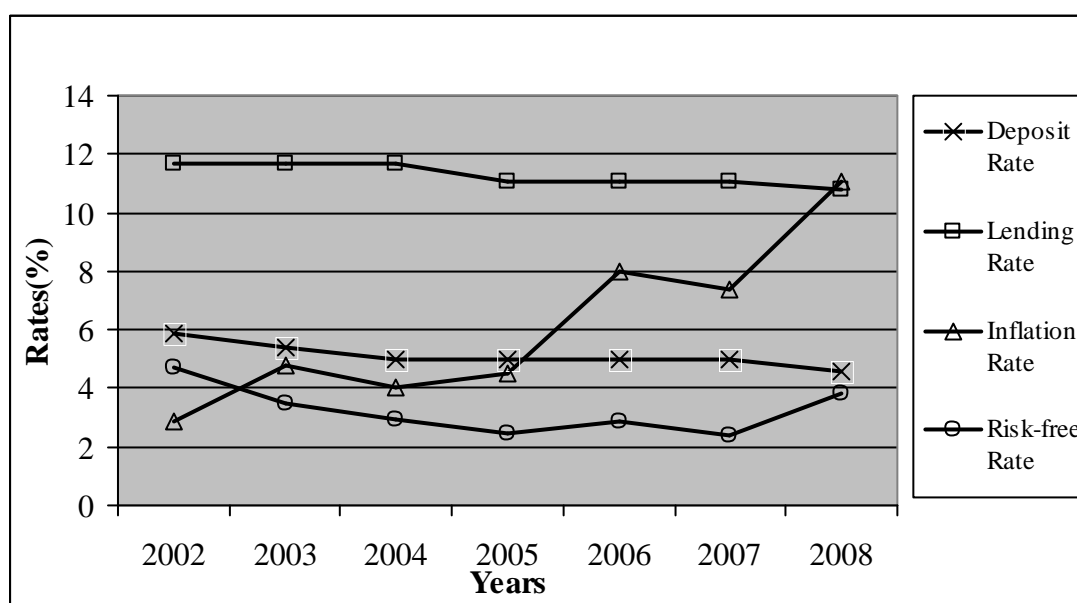
Table 4.12

Correlation Analysis of Nepal Development Bank Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	0.7549	0.5700	2.5745	2.571	Significant
r_{bd}	0.7729	0.5974	2.7238	2.571	Significant
r_{cd}	0.9863	0.9728	13.3724	2.571	Significant
r_{be}	-0.7819	0.6114	2.8047	2.571	Significant
r_{bf}	0.5522	0.3849	1.5744	2.571	Insignificant
r_{de}	-0.8504	0.7232	3.6143	2.571	Significant
r_{df}	0.3470	0.1204	0.8273	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.7925$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.6280$
		$R_{d.bc} = 0.9864$			$R^2_{d.bc} = 0.9730$
		$R_{b.ef} = 0.9462$			$R^2_{b.ef} = 0.8953$
		$R_{d.ef} = 0.7777$			$R^2_{d.ef} = 0.6043$

Figure 4.6

Relationship between Rates of NDBL



The correlation coefficient between interest rate on deposit and amount deposited, r_{ab} , is 0.7549. This means that these two variables are highly positively correlated. When supply

of loanable fund increases; interest rate on such deposit also increases. The coefficient of determination between these two variables r^2_{ab} is 0.5700 which means 57% of total variation in interest rate on deposit is explained by independent variable (i.e. supply of loanable fund) and remaining is due to the effect of other factors in the economy. T-statistics for testing the significance of the correlation is 2.5745. Since the tabulated t-value at 5% level of significance for 5 degree of freedom (2.571) is less than the calculated value, the correlation coefficient is significant. This means that interest rate on deposit and amount deposited of NDBL are significantly correlated and an increase (decrease) in the amount of deposit brings an increase (decrease) in interest rate on deposit.

Interest rate on deposit and lending are positively correlated and the degree of relationship is high ($r_{bd} = 0.7729$). The coefficient of correlation is statistically significant because t-value is significantly greater than tabulated value at 5% level of significance for 5 degree of freedom ($27238 > 2.571$). This means that two rates are significantly correlated and change in interest rate on deposit affects interest rate on lending. 59.74% of total variation in interest rate on lending is the effect of interest rate on deposit as shown by the coefficient of determination r^2_{bd} . The correlation coefficient between interest rate on lending and amount loaned is highly positive ($r_{cd} = 0.9863$) which shows that when interest rate on lending decreases; amount loaned also decreases and vice-versa. The coefficient of determination, r^2_{cd} , is 0.9728 which means that 97.28% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (amount loaned) and remaining is due to the effect of other factors. T-value for testing the significance of the correlation coefficient between variables c and d is 13.3724. Since the calculated t-value (13.3724) is significantly greater than the tabulated t-value at 5% level of significance for 5 degree of freedom (2.571),

correlation coefficient is significant which means that the variables (interest rate on lending and amount loaned) are significantly correlated.

The correlation coefficient between interest rate on deposit and inflation rate r_{be} is -0.7819 which means that these two variables are highly negatively correlated. The coefficient of determination, r_{be}^2 , is 0.6114, it means only 61.14% of total variation in dependent variable (i.e. interest rate on deposit) is explained due to independent variable (i.e. inflation) and remaining variation is due to the external factors in the economy. T-value for testing the significance of correlation coefficient is 2.8047 which is greater than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is greater than the tabulated value, the correlation coefficient is significant which means that the interest rate on deposit of NDBL is correlated with inflation rate and the movement in inflation rate affects the interest rate on deposit significantly.

Another variable in the economy, which is considered to be affecting factor of interest rate in financial market is the risk-free rate. The correlation coefficient between interest rate on deposit of NDBL and the risk-free rate (rate on 91 days Treasury bill) r_{bf} is 0.5522, which shows that the variables are positively correlated. The change in risk-free rate leads the change in interest rate in same direction. The coefficient of determination r_{bf}^2 is 0.3849, which means that 38.49% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 1.5744 which is less than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is lesser than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of NDBL is not correlated with risk-free rate.

Similarly the relationship of interest rate on lending of NDBL with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending r_{de} is -0.8504, which shows that the variables are highly negatively correlated. Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between these variables r_{de}^2 is 0.7232, which means that 72.32% of total variation in dependent variables (interest rate on lending) has been explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 3.6143. Since the calculated t-value for 5 degree of freedom at 5% level of significance (2.571), the variables are correlated significantly. This means that the lending rate of NDBL is significantly correlated with inflation rate.

The effect of risk-free rate of interest rate on lending of NDBL has also been examined through the analysis of correlation between these variables. The coefficient of correlation between these variables r_{df} is 0.347. This means that there is positive relationship between these variables. Since interest rate is dependent on risk-free rate, the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between these variables is 0.1204 which indicates that 12.04% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 0.8273. Since the calculated t-value is smaller than tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of NDBL is not significantly affected by the risk-free rate.

Lower part of the table 4.12 consists of correlations of multiple correlations. First the multiple correlation coefficient of interest rate on deposit (as dependent variable) with other two influencing variables (amount deposited and interest rate on lending as independent variables) $R_{b,ad}$ has been computed which is 0.7925. The coefficient of multiple determination, $R^2_{b,ad}$ is 0.6280 which means that 62.80% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficient assuming interest rate on deposit as dependent and inflation and risk-free rate as independent, $R_{b,ef}$, is 0.9462. The coefficient of multiple determination $R^2_{b,ef}$ is 0.8953, which means that 89.53 % of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d,bc}$, is 0.9864. The coefficient of multiple determination, $R^2_{d,bc}$, is 0.9730 which means that total variation in dependent variables has been explained by two independent variables to the extent of 97.30% and remaining is the effect of other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.7777. The coefficient of multiple determination, $R^2_{d,ef}$ is 0.6048 has meaning that 60.48% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.7 Peoples Finance Company Limited (PFCO)

Table 4.13

**Amount of Deposit and Lending, Interest Rate on Deposit and Lending of PFCO
and Inflation Rate and Risk Free Rate**

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	161.40	9.50	140.20	12.17	2.90	4.71
2003	142.20	7.73	98.50	13.38	4.80	3.48
2004	187.30	8.50	181.80	13.95	4.00	2.93
2005	337.60	7.90	356.00	13.95	4.50	2.46
2006	517.9	7.27	529.30	12.60	8.00	2.84
2007	529.20	7.0	564.50	12.16	7.38	2.42
2008	511.30	7.34	566.50	12.43	11.03	3.85

Source: Annual reports of PFCO and various banking & financial statistics published by NRB.

Note:

- Deposit amount and lending amount of sample finance companies are shown in appendix-5.
- Interest rate structures of deposit of sample finance companies are shown in appendix-10.
- Interest rate structures of lending of sample finance companies are shown in appendix-11.
- Inflation rate is shown in appendix-12.
- Risk-free rate is shown in appendix-13.

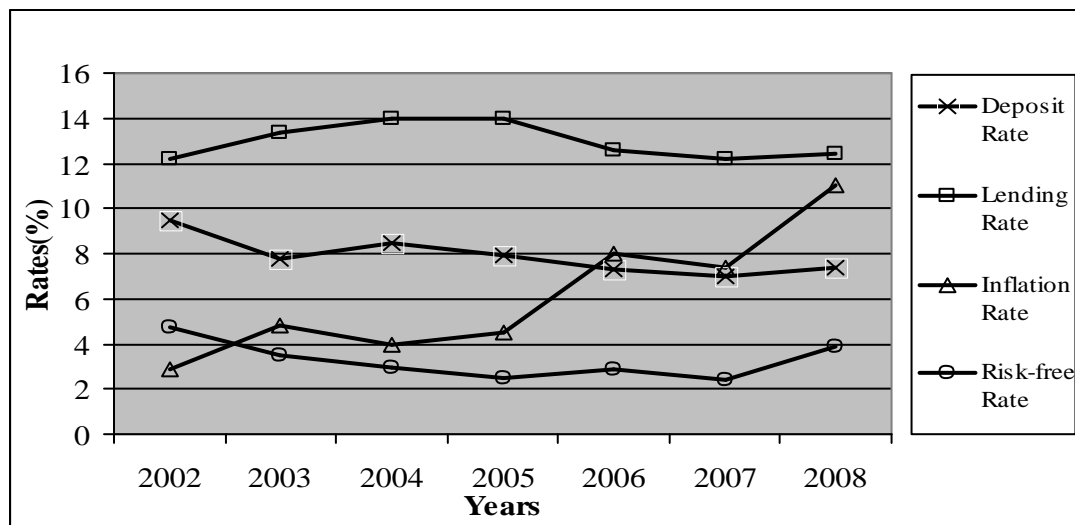
Table 4.13 depicts data of Peoples Finance Company Limited consisting of amount deposited, interest rate on deposit and interest rate on lending from fiscal year 2002 to

2008. This table also presents inflation and risk-free rate for same fiscal years. To show the relationship between variables various correlation coefficients are presented in table 4.14.

Table 4.14
Correlation Analysis of Peoples Finance Company Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r _{ab}	-0.7822	0.6118	2.8072	2.571	Significant
r _{bd}	0.1234	0.0152	0.2781	2.571	Insignificant
r _{cd}	-0.4536	0.2057	1.1381	2.571	Insignificant
r _{be}	-0.7669	0.5881	2.6719	2.571	Significant
r _{bf}	0.6471	0.4187	1.8978	2.571	Insignificant
r _{de}	-0.4213	0.1775	1.0387	2.571	Insignificant
r _{df}	-0.4203	0.1766	1.0357	2.571	Insignificant
Multiple Correlation Coefficient	R _{b.ad} = 0.8301		Coefficient of Multiple Determination	R ² _{b.ad} = 0.6891	
	R _{d.bc} = 0.5685			R ² _{d.bc} = 0.3232	
	R _{b.ef} = 0.9426			R ² _{b.ef} = 0.8885	
	R _{d.ef} = 0.6401			R ² _{d.ef} = 0.4097	

Figure 4.7
Relationship Between Rates of PECO



The correlation coefficient between interest rate on deposits and amount deposited r_{ab} , is -0.7822. This means that these two variables are highly negatively correlated. When supply of loanable fund (supply of deposit) increases; the interest rate on such deposit decreases. In general concept, interest rate on deposit, should be positively correlated means that higher rate attracts more deposit. But we have assumed that interest rate is dependent factor, which is determined by supply of loanable fund. Hence the negative correlation between these two variables is not surprising. The coefficient of determination between these variables, r^2_{ab} is 0.6118 which means that 61.18 percent of total variation in interest rate on deposit has been explained by independent variable i.e. amount of collected and remaining is due to the effect of other factors in the economy. T-statistics for testing the significance of the correlation is 2.8072. Since the tabulated t-value at 5 percent level of significance for 5 degree of freedom (2.571) is less than the calculated value, correlation coefficient is significant. This means that the variable mentioned (interest rate on deposit and amount deposited) of PFCO are significantly correlated and an increase (decrease) in the amount of deposit brings a decrement (increment) in interest rate on deposit.

The correlation coefficient between amount of loan advanced and interest rate on lending, r_{cd} , is -0.4536, which means that there is moderate degree of negative correlation between them. According to the assumption of the study interest rate is dependent variable and there should be positive correlation between these two variables, which means that increase demand of loanable fund also causes increment in the interest rate. But this negative correlation of coefficient between these variables tells that more loans are demanded at lower rate i.e. demand is dependent on interest rate. The coefficient of determination, r^2_{cd} , is 0.2057 means that 20.57% of total variation in interest rate on lending is due to the volume of lending and remaining is the effect of other factors. T-

value for testing the significance of the correlation coefficient between variables c and d is 1.1381. Since the correlated t-value 1.1381 is smaller than the tabulated t-value at 5% level of significance for 5 degree of freedom (2.571), correlation coefficient is not significant which means that the variables (interest rate on lending and amount loaned) are not significantly correlated. An increase (decrease) in interest rate on lending does not bring the decrement (increment) in amount loaned by PFCO, which means that interest rate on lending of PFCO is not affected by amount loaned.

Similarly, the correlation coefficient between interest rate on lending and interest rate on deposit, r_{bd} , is 0.1234, which means that these two variables are positively correlated. The coefficient of determination between these variables, r^2_{bd} , is 0.0152 which means that 1.52% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (interest rate on deposit) and remaining variance is due to the other factors in the economy. T-statistics for testing the significance of the correlation coefficient is 0.2781 which is less than tabulated value. Since the calculated t-value is less than the tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant, which indicates that the lending rate and the deposit rate are not correlated significantly.

The correlation coefficient between interest rate on deposit and inflation rate, r_{be} , is -0.7669 which means that these two variables are negatively correlated. According to the theories, there must be positive correlation between interest rate on deposit and inflation. But in our context, such theories do not apply in practical field. The coefficient of determination, r_{be} , is 0.5881, it means only 58.81% of total variation in dependent variable (i.e. interest rate on deposit) is explained due to independent variable (i.e. inflation) and remaining is due to the external factors in the economy. T-value for testing

the significance of correlation coefficient is 2.6719, which is greater than the tabulated t-value for 5 degree of freedom at 5% level of significance 2.571. Since the calculated value is greater than the tabulated value, the correlation coefficient is significant which means that the interest rate on deposit of PFCO is correlated with inflation rate and the movement in inflation rate does affect the interest rate on deposit significantly.

Another variable in the economy, which is considered to be affecting factor of interest rate in financial market, is the risk-free rate. The correlation coefficient between interest rate on deposit of PFCO and the risk-free rate (rate on 91days Treasury bill) r_{bf} , is 0.6471, which shows that the variables are moderately positively correlate. The change in risk-free rate leads the change in interest rate in same direction. The coefficient of determination r_{bf}^2 is 0.4187, which means 41.87% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 1.8978, which is smaller than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is smaller than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of PFCO is not correlated with risk-free rate and the movement in risk-free rate does not affect the interest rate on deposit significantly.

Similarly the relationship of interest rate on lending of PFCO with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending r_{de} is -0.4213, which shows that the variables are negatively correlated. Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between those variables r_{de}^2 is 0.1775, which means that 17.75% of total variation in dependent variables (interest rate on lending) has been

explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 1.0387. Since the calculated t-value is lower than the tabulated for 5 degree of freedom at 5% level of significance (2.571) the variables are not significantly correlated. This means that the lending rate of PFCO is not significantly correlated with inflation rate.

The effect of risk-free rate of interest on lending of PFCO has also been examined through the analysis of correlation between these variables. The coefficient of correlation between these variables r_{df} is -0.4203. This means that there is negative relationship between these variables. The movement of risk-free rate leads the movement in interest rate on lending in opposite direction. The coefficient of determination between these variables is 0.1766 which indicates that 17.66% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 1.0357; since the calculated t-value is smaller than tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of PFCO is not significantly affected by the risk-free rate.

Combined effect of independent variables at once on dependent variable has been analyzed through multiple correlations. The coefficient of multiple determination assuming interest rate on deposit as dependent and interest rate on lending and amount deposited as independent, $R^2_{b.ad}$, is 0.6891 which means that 68.91% of total variation in dependent variables is the effect of other two independent variables. Similarly the coefficient of multiple determination assuming interest rate on deposit as dependent factor and inflation and risk-free rate as independent variables $R^2_{b.ef}$ is 0.8885 which

means that 88.85% of total variation in dependent variables has been explained by two independent variables.

The coefficient of multiple determination assuming interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R^2_{d.bc}$, is 0.3232 which shows that 32.32% of total variation in dependent variable is explained by two independent variables. Similarly, the coefficient of multiple determination taking interest rate on lending as dependent and inflation and risk-free rate as independent variables, $R^2_{d.ef}$ is 0.4097 which means that two independent variables are responsible to the total variation in dependent variable by 40.97%.

4.2.8 Kathmandu Finance Limited (KAFL)

Table 4.15
Amount of Deposit and Lending, Interest Rate on Deposit and Lending of KAFL
and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	234.70	8.94	236.60	14.00	2.90	4.71
2003	239.80	8.39	248.00	13.17	4.80	3.48
2004	246.00	7.83	236.70	12.50	4.00	2.93
2005	248.30	7.75	246.60	11.17	4.50	2.46
2006	305.02	7.13	244.08	10.75	8.00	2.84
2007	316.72	7.18	284.15	10.83	7.38	2.42
2008	326.39	7.84	273.93	11.78	11.03	3.85

Source: Annual reports of KAFL and various banking & financial statistics published by

NRB.

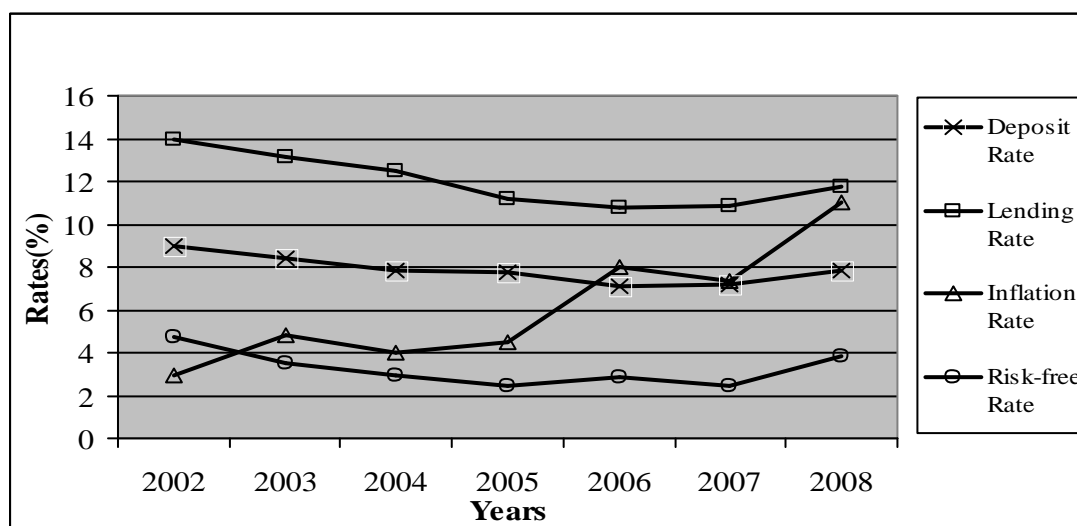
Table 4.15 shows amount of deposit collected, interest rate on such deposit, amount loaned and interest rate on loan of Kathmandu Finance Limited for seven fiscal years from 2002 to 2008. Inflation and risk-free rate for same periods has also been presented. Simple and multiple correlation coefficients, coefficients of determination and t-values are presented in table 4.16.

Table 4.16
Correlation Analysis of Kathmandu Finance Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.6921	0.4790	2.1440	2.571	Insignificant
r_{bd}	0.9574	0.9166	7.4130	2.571	Significant
r_{cd}	-0.5126	0.2627	1.3349	2.571	Insignificant
r_{be}	-0.5748	0.3304	1.5710	2.571	Insignificant
r_{bf}	0.8324	0.6929	3.3587	2.571	Significant
r_{de}	-0.5940	0.3528	1.6510	2.571	Insignificant
r_{df}	0.8138	0.6623	3.1314	2.571	Significant
Multiple Correlation Coefficient	$R_{b.ad} = 0.9577$		Coefficient of Multiple Determination	$R^2_{b.ad} = 0.9172$	
	$R_{d.bc} = 0.9593$			$R^2_{d.bc} = 0.9202$	
	$R_{b.ef} = 0.9540$			$R^2_{b.ef} = 0.9101$	
	$R_{d.ef} = 0.9489$			$R^2_{d.ef} = 0.9004$	

Figure 4.8

Relationship between Rates of KAFL



Deposit amount and interest rate on deposit are negatively correlated ($r_{ab} = -0.6921$) which shows that when amount deposited increases; interest rate on deposit will decrease and vice-versa. The coefficient of correlation is statistically insignificant because calculated value is smaller than tabulated value for 5 degree of freedom at 5% level of significance. Thus, interest rate on deposit of KAFL is not affected by the amount of deposit collected. The correlation coefficient between interest rate on lending and amount loaned is also negative ($r_{cd} = -0.5126$) which shows that when interest rate on lending decreases, the amount loan will increase and vice-versa. But the coefficient is not statistically significant as the calculated t-value, 0.2627, is smaller than tabulated value, 2.571. This means that amount loaned and interest on loan is not significantly correlated i.e. interest rate on lending does not affect the amount loaned. 26.27% of total variation in interest rate on lending is the effect of amount loaned as expressed by the coefficient of determination, r^2_{cd} . And remaining variation is due to the effect of other factors in the economy.

Similarly, the correlation coefficient between interest rate on deposit and interest rate on lending is highly positive ($r_{bd} = 0.9574$). Increment (decrement) in interest rate on deposit also leads the increment (decrement) in interest rate on lending. The coefficient is statistically significant since calculated t-value is greater than tabulated value (7.4130 \gg 2.5701). This means that both the rates are significantly correlated and interest rate on deposit also brings change in interest rate on lending in the same direction. The coefficient of determination between both the rates is 0.9166 which means 91.66% of variation in interest rate on lending has been explained by interest rate on deposit and remaining is due to the effect of other factor in the economy.

The correlation coefficient between interest rate on deposit and inflation rate, r_{be} is -0.5748 which means that these two variables are negatively correlated. Increment (decrement) in inflation rate leads the decrement (increment) in interest rate on deposit. The coefficient of determination, r^2_{be} is 0.3304, it means that only 33.04% of the total variation in dependent variable (interest rate on deposit) is explained by independent variable (inflation) and remaining variation is due to the external factors in the economy. T-value for testing the significance of correlation coefficient is 1.571 which is less than the tabulated value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is less than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of KAFL is not correlated with inflation.

Another variable in the economy, which is considered to be affecting factor of interest rate in financial market is the risk-free rate. The correlation coefficient between interest rate on deposit of KAFL and risk-free rate (rate on 91 days Treasury bill) r_{bf} is 0.8324, which shows the variables are highly positively correlated. The change in risk-free rate leads the change in interest rate in same direction at high proportion. The coefficient of determination r^2_{bf} is 0.6929, which means that 69.29% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 3.3587, which is greater than the tabulated t-value for 5 degree of freedom at 5% level of significance 2.571. Since the calculated value is greater than the tabulated value the correlation coefficient is significant which means that the interest on deposit of KAFL is correlated with risk-free rate and the movement in risk-free rate affects the interest rate on deposit significantly in the same direction.

The relationship of interest rate on lending of KAFL with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending r_{de} is -0.5940, which shows that the variables are moderately negatively correlated.

Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between these variables r_{de}^2 is 0.3528, which means that 35.28% of total variation in dependent variables (interest rate on lending) has been explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 1.6510. Since the calculated t-value is lower than the tabulated t-value for 5 degree of freedom at 5% level of significance (2.571), the variables are not correlated significantly. This means that the lending rate of KAFL is not significantly correlated with inflation rate.

The coefficient of correlation between risk-free rate and interest on lending of KAFL, r_{df} , is 0.8138. This means that there is high positive relationship between these variables.

Since interest rate is dependent on risk-free rate; the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between these variables is 0.6623, which indicates that 66.23% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 3.1314. Since the calculated t-value is greater than tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is significant. This means that the interest rate on lending of KAFL is significantly affected by the risk-free rate.

The coefficient of multiple determination assuming interest rate on deposit as dependent and interest rate on lending and amount deposited as independent, $R_{b.ad}^2$, is 0.9172 which

means that 91.72% of total variation in dependent variables has been explained by two independent variables. On the other hand, the coefficient of multiple determination assuming interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R^2_{d.bc}$, is 0.9202 which shows that effect of two independent variables on the total variation in dependent variable is 92.02%. Similarly, the coefficient of multiple determination, $R^2_{d.ef}$ is 0.9004 assuming interest rate on lending as dependent and inflation and risk-free rate as independent variables means that 90.04% of total variation in dependent variable has been explained by two independent variables. The coefficient of multiple determination assuming interest rate on deposit as dependent factor and inflation and risk-free rate as independent variables, $R^2_{b.ef}$ is 0.9101 which means that 91.01% of total variation in dependent variables has been explained by two independent variables.

4.2.9 National Finance Company Limited (NFCO)

Table 4.17

Amount of Deposit and Lending, Interest Rate on Deposit and Lending of NFCO and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	530.00	7.92	439.90	13.18	2.90	4.71
2003	531.80	5.96	390.30	12.61	4.80	3.48
2004	530.00	5.71	429.80	12.23	4.00	2.93
2005	571.90	5.71	492.30	11.09	4.50	2.46
2006	621.80	5.71	509.70	10.84	8.00	2.84
2007	629.50	5.71	549.30	10.32	7.38	2.42
2008	651.00	7.37	742.10	10.43	11.03	3.85

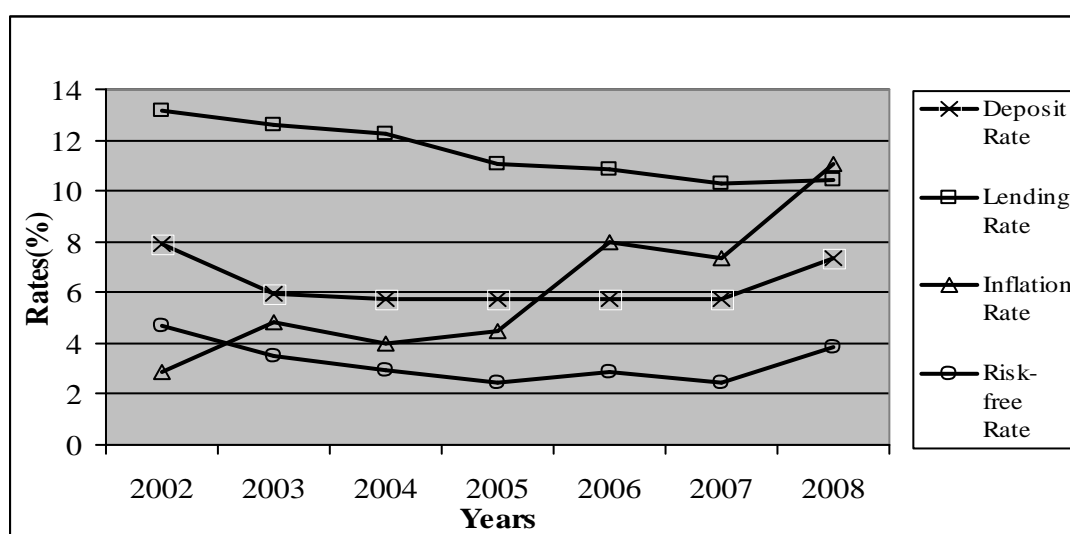
Source: Annual reports of NFCO and various banking & financial statistics published by NRB.

Table 4.17 shows the total amount deposited, interest rate on such deposit, interest on loan and amount loaned by NFCO for seven fiscal years from 2002 to 2008. It also consists of inflation rate and risk-free rate of interest for same fiscal years. Simple and multiple correlation coefficients between variables are presented in Table No. 4.18.

Table 4.18
Correlation Analysis of National Finance Company Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.0277	0.0008	0.06209	2.571	Insignificant
r_{bd}	0.3284	0.1078	0.7774	2.571	Insignificant
r_{cd}	-0.7518	0.5652	2.5494	2.571	Insignificant
r_{be}	0.05265	0.0028	0.1179	2.571	Insignificant
r_{bf}	0.9242	0.8541	5.4103	2.571	Significant
r_{de}	-0.8134	0.6616	3.1266	2.571	Significant
r_{df}	0.6036	0.3643	1.6928	2.571	Insignificant
Multiple Correlation Coefficient		$R_{b.ad} = 0.8175$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.6683$
		$R_{d.bc} = 0.9627$			$R^2_{d.bc} = 0.9268$
		$R_{b.ef} = 0.9415$			$R^2_{b.ef} = 0.8864$
		$R_{d.ef} = 0.9536$			$R^2_{d.ef} = 0.9093$

Figure 4.9
Relationship Between Rates of NFCO



The correlation coefficient between interest rate on deposit and amount deposited, r_{ab} , is -0.0277. This means that these two variables are negatively correlated. When supply of loanable fund increases; interest rate on such deposit decreases. The coefficient of determination between these two variables r_{ab}^2 is 0.0008 which means only 0.08% of total variation in interest rate on deposit is explained by independent variable (i.e. supply of loanable fund) and remaining 99.92% is due to the effect of other factors in the economy. T-statistics for testing the significance of the correlation is 0.06209. Since the tabulated t-value at 5% level of significance for 5 degree of freedom (2.571) is greater than the calculated value, the correlation coefficient is insignificant. This means that the variables mentioned (interest rate on deposit and amount deposited) of NFCO are not significantly correlated.

The correlation coefficient between interest rate on lending and amount loan advanced, r_{cd} , is -0.7518, which means there is high degree of negative correlation between them. According to the assumption of the study interest rate is dependent variable and there should be positive correlation between these two variables, which means that increased demand of loanable fund also causes increment in the interest rate. But this negative correlation of coefficient between these variables tells that more loans are demanded at lower rates i.e. demand is dependent on interest rate. The coefficient of determination, r_{cd}^2 , is 0.5652 which means that 56.52% of total variation in interest rate on lending is due to the volume of lending and remaining is the effect of other factors. T-value for testing the significance of the correlation coefficient is 2.5494, which is lower than the tabulated value at 5% level of significance for 5 degree of freedom (2.571), the variables are not correlated significantly. This means that lending amount of NFCO is not significantly correlated with the interest rate on lending.

Similarly the correlation coefficient between interest rate on deposit and interest rate on lending, r_{bd} is 0.3284, which means that these two variables are moderately positively correlated. The coefficient of determination between these variables, r^2_{bd} is 0.1078, which means that 10.78% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (interest rate on deposit) and remaining variation is due to the other factors in the economy. T-statistics for testing the significance of the correlation coefficient is 0.7774 which is less than tabulated value. Since the calculated t-value is less than the tabulated value at 5% level of significance for 5 degree of freedom (2.7238), which indicates that the lending rate and the deposit rate are not correlated significantly.

The correlation coefficient between interest rate on deposit and inflation rate r_{be} is 0.05265 which means that these two variables are positively correlated. That is when inflation rate increases (decreases); interest rate on deposit also increases (decreases). The coefficient of determination, r^2_{be} , is 0.0028, it means only 0.28% of total variation in dependent variable (i.e. interest rate on deposit) is explained by independent variable (i.e. inflation) and remaining (99.72%) variation is due to the external factors in the economy. T-value for testing the significance of correlation coefficient is 0.1179 which is less than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is less than the tabulated value, the correlation coefficient is not significant which means that the interest rate on deposit of NFCO is not correlated with inflation rate and the movement in inflation rate does not affect the interest rate on deposit significantly.

Another variable in the economy, which is considered to be affecting factor of interest rate in financial market is the risk-free rate. The correlation coefficient between interest rate on deposit of NFCO and the risk-free rate (rate on 91 days Treasury bill) r_{bf} is 0.9242, which shows that the variables are highly positively correlated. The change in risk-free rate leads the change in interest rate in same direction. The coefficient of determination r^2_{bf} is 0.8541, which means that 85.41% of total variation in interest rate on deposit is due to the effect of the variation in independent variable (risk-free rate) and remaining is the effect of other factors. T-value for testing the significance of correlation coefficient is 5.4103, which is greater than the tabulated t-value for 5 degree of freedom at 5% level of significance, 2.571. Since the calculated value is greater than the tabulated value, the correlation coefficient is significant which means that the interest rate on deposit of NFCO is correlated with risk-free rate and the movement in risk-free rate affects the interest rate on deposit significantly in the same direction.

Similarly the relationship of interest rate on lending of NFCO with inflation has also been examined. The coefficient of correlation between inflation and interest rate on lending r_{de} is -0.8134, which shows that the variables are highly negatively correlated. Movement in inflation rate leads movement in interest rate on lending in opposite direction. The coefficient of determination between these variables r^2_{de} is 0.6616, which means that 66.16% of total variation in dependent variable (interest rate on lending) has been explained by the variation in independent variable (inflation rate) and remaining is due to the effect of other factors. The t-value for testing the significance of correlation coefficient is 3.1266. Since the calculated t-value for 5 degree of freedom at 5% level of significance (2.571), the variables are correlated significantly. This means that the lending rate of NFCO is significantly correlated with inflation rate.

The coefficient of correlation between risk-free rate and interest rate on lending r_{df} is 0.6036. This means that there is positive relationship between these variables. Since interest rate is dependent on risk-free rate, the variation in risk-free rate brings the variation in interest rate on lending in the same direction. The coefficient of determination between these variables is 0.3643 which indicates that 36.43% of total variation in interest rate on lending is explained by the variation in risk-free rate and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient is 1.6928. Since the calculated t-value is smaller than tabulated value at 5% level of significance for 5 degree of freedom (2.571), the correlation coefficient is not significant. This means that the interest rate on lending of NFCO is not significantly affected by the risk-free rate.

To examine the combined effect of two factors in interest at once multiple correlation coefficients has also been computed. The multiple correlation coefficients taking interest rate on deposit as dependent variable and amount deposited and interest rate on lending as independent variables $R_{b,ad}$ is 0.8175. The coefficient of multiple determinations, $R^2_{b,ad}$ is 0.6683 which means that 66.83% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficients assuming interest rate on deposit as dependent and inflation and risk-free rate as independent, $R_{b,ef}$ is 0.9415. The coefficient of multiple determinations $R^2_{b,ef}$ is 0.8864, which means that 88.64% of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficients taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d,bc}$, is 0.9627. The coefficient of multiple determination, $R^2_{d,bc}$, is 0.9268, which means that total variation in dependent variables has been explained by two independent variables to the extent of 92.68% and remaining is the effect of other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.9536. The coefficient of multiple determination, $R^2_{d,ef}$ is 0.9093 has meaning that 90.93% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.2.10 Premier Finance Company Limited (Pre. FCO):

Table 4.19

Amount of Deposit and Lending, Interest Rate on Deposit and Lending of Pre. FCO and Inflation Rate and Risk Free Rate

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	122.20	10.33	117.20	13.75	2.90	4.71
2003	158.10	9.34	151.30	14.13	4.80	3.48
2004	247.10	7.83	189.20	12.17	4.00	2.93
2005	244.30	6.65	215.30	11.58	4.50	2.46
2006	215.40	6.65	250.20	11.58	8.00	2.84
2007	252.99	6.60	292.58	10.00	7.38	2.42
2008	389.83	7.41	450.19	12.50	11.03	3.85

Source: Annual reports of Pre.FCO and various banking & financial statistics published by NRB.

Table 4.19 shows amount of deposit collected, interest rate on such deposits, amount loaned and interest rate on loan of Premier finance company limited (Pre. FCO) for seven fiscal years from 2002 to 2008. Inflation rate and risk-free rate for the same period has also been presented. Simple and multiple correlation coefficients of determination and t-values are presented in table 4.20.

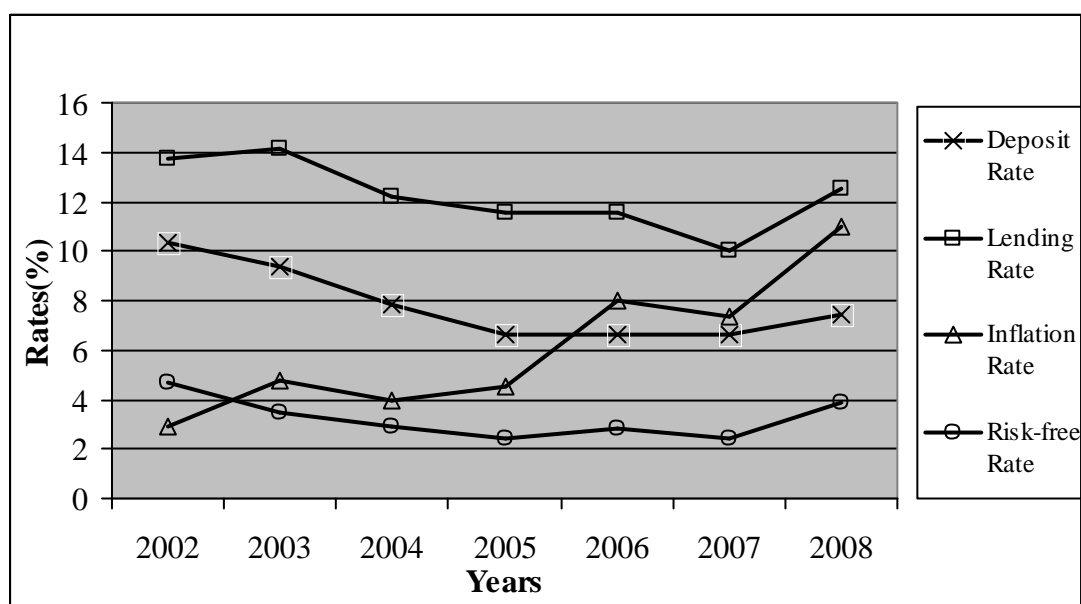
Table 4.20

Correlation Analysis of Premier Finance Company Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.6289	0.3955	1.8087	2.571	Insignificant
r_{bd}	0.8740	0.7639	4.022	2.571	Significant
r_{cd}	-0.4335	0.1879	1.0754	2.571	Insignificant
r_{be}	-0.5563	0.3094	1.4968	2.571	Insignificant
r_{bf}	0.8437	0.71183	3.5144	2.571	Significant
r_{de}	-0.3731	0.1392	0.8992	2.571	Insignificant
r_{df}	0.7831	0.6132	2.8155	2.571	Significant
Multiple Correlation Coefficient		$R_{b.ad} = 0.9173$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.8414$
		$R_{d.bc} = 0.8801$			$R^2_{d.bc} = 0.7746$
		$R_{b.ef} = 0.9542$			$R^2_{b.ef} = 0.9105$
		$R_{d.ef} = 0.8281$			$R^2_{d.ef} = 0.6857$

Figure 4.10

Relationship Between Rates of Pre. FCO



Deposit amount and interest rate on deposit are negatively correlated ($r_{ab} = -0.6289$) which shows that when amount deposited increases, interest rate on deposit will decrease and vice-versa. The coefficient of correlation is statistically insignificant because calculated t-value is smaller than tabulated value for 5 degree of freedom at 5% level of significance. Thus, the interest rate on deposit of Pre FCO is not affected by the amount of deposit collected. The coefficient of determination between these two variables r^2_{ab} is 0.3955 which means that 39.55% of total variation in interest rate on deposit is explained by independent variable (i.e. supply of loanable fund) and remaining is due to the effect of other factors in the economy. The correlation coefficient between interest rate on lending and amount loaned is also negative ($r_{cd} = -0.4335$) which shows that when interest rate on lending decreases, the amount loaned will increase and vice-versa. The coefficient is statistically insignificant as the calculated t-value, 1.0754, is smaller than tabulated value, 2.571. This means that amount loaned and interest on loan are insignificantly correlated i.e. interest rate on lending does not affect the amount loaned. 18.79% of total

variation in amount loaned is the effect of interest rate on lending as expressed by the coefficient of determination, r_{cd}^2 .

But the correlation coefficient between interest rate on deposit and lending is positive ($r_{bd} = 0.8740$). The direction and proportion of movement of both rates is same i.e. if interest rate on deposit increases, the interest rate on lending also increases in almost same proportion and vice-versa. The coefficient is statistically significant since calculated t-value is greater than tabulated value ($4.022 > 2.571$). This means that both the rates are significantly correlated. Change in interest rate on deposit also brings change in interest rate on lending in the same direction. The coefficient of determination between both rates is 0.7639 which means 76.39% of variation in interest rate on lending has been explained by interest rate on deposit.

The relationship of inflation with interest rate on deposit, r_{be} and with interest rate on lending, r_{de} , is negative i.e. -0.5563 and -0.3731 respectively. An increment in inflation brings decrement in interest rate on deposit and vice-versa. Likewise, an increment in inflation rate also brings decrement in interest rate on lending and vice-versa. The correlation coefficient r_{be} , and r_{de} are statistically insignificant since calculated t-value are less than tabulated value (1.4968 and $0.8992 < 2.571$). Hence, it can be said that interest rate on deposit and lending of Pre FCO are not influenced by inflation and there does not exist direct relationship between these variables. In other words, interest rate on deposit and interest rate on lending are not affected by inflation. The coefficient of determination, r_{be}^2 is 0.3094 which shows that 30.94% of total variation in interest rate on deposit is the effect of inflation. The coefficient of determination r_{de}^2 is 0.1392, which shows that 13.92% of total variation in interest on lending is the effect of inflation. Hence, it can be concluded that interest rate on lending and deposit charged and offered by Pre. FCO are

not affected by inflation. In other words, inflation has no any significance influence on interest rate on deposit and interest rate charged on lending by Pre FCO.

On the other hand, the relationship of risk-free rate on deposit rate and lending rate is highly positive ($r_{bf} = 0.8437$ and $r_{df} = 0.7831$) which shows that the change in risk-free rate leads the change in the interest rate on deposit and interest rate on lending in same direction. Both the correlation coefficients are statistically significant because their calculated t-values are greater than tabulated value (3.5144 and $2.8155 > 2.571$). This means that, interest rate charged and offered by Pre FCO on deposit and lending are affected by the risk-free rate. The coefficient of determination, r_{bf}^2 is 0.71183 which shows that 71.18% of total variation in interest rate on deposit is the effect of risk-free rate. The coefficient of determination r_{df}^2 , is 0.6132 which shows that 61.32% of total variation in interest rate on lending is the effect of risk-free rate, and remaining is due to the effect of other factors in the economy.

The coefficient of multiple determination assuming interest rate on deposit as dependent and interest rate on lending and amount deposited as independent, $R_{b.ad}^2$, is 0.8414 , which means that 84.14% of total variation in dependent variable has been explained by two independent variables. On the other hand, the coefficient of multiple determination assuming interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d.bc}^2$, is 0.7746 which means that effect of two independent variables on the total variation in dependent variable is 77.46%. Similarly, the coefficient of multiple determination, $R_{d.ef}^2$ is 0.6857 assuming interest rate on lending as dependent and inflation and risk-free rate as independent variables means that 68.57% of total variation in dependent variable has been explained by two independent variables. The coefficient of multiple determination assuming interest rate on deposit as dependent

factor and inflation and risk-free rate as independent variables, $R^2_{b,ef}$ is 0.9105 which means that 91.05% of total variation in dependent variables has been explained by two independent variables.

4.2.11 Union Finance Company Limited (UFCO)

Table 4.21

**Amount of Deposit and Lending, Interest Rate on Deposit and Lending of UFCO
and Inflation Rate and Risk Free Rate**

Fiscal Year	Deposit amount (Rs. In million) (a)	Deposit Rate (%) (b)	Loan amount (Rs. In million) (c)	lending rate (%) (d)	Inflation rate (%) (e)	Risk-free rate (%) (f)
2002	303.50	7.50	288.10	15.25	2.90	4.71
2003	308.40	7.25	245.80	13.80	4.80	3.48
2004	518.78	6.00	213.48	13.70	4.00	2.93
2005	538.73	5.60	243.60	14.95	4.50	2.46
2006	594.69	4.92	407.09	14.65	8.00	2.84
2007	669.98	5.80	599.55	14.30	7.38	2.42
2008	720.90	7.34	722.23	13.50	11.03	3.85

Source: Annual reports of UFCO and various banking & financial statistics published by NRB.

Table 4.21 depicts data of Union Finance Company Limited (UFCO) consisting of amount deposited, interest rate on deposit, amount loaned and interest rate on loan) for seven fiscal years from 2002 to 2008. This table also presents inflation rate and risk-free rate for same period. To show the relationship between variables various correlation coefficients are presented in table 4.22.

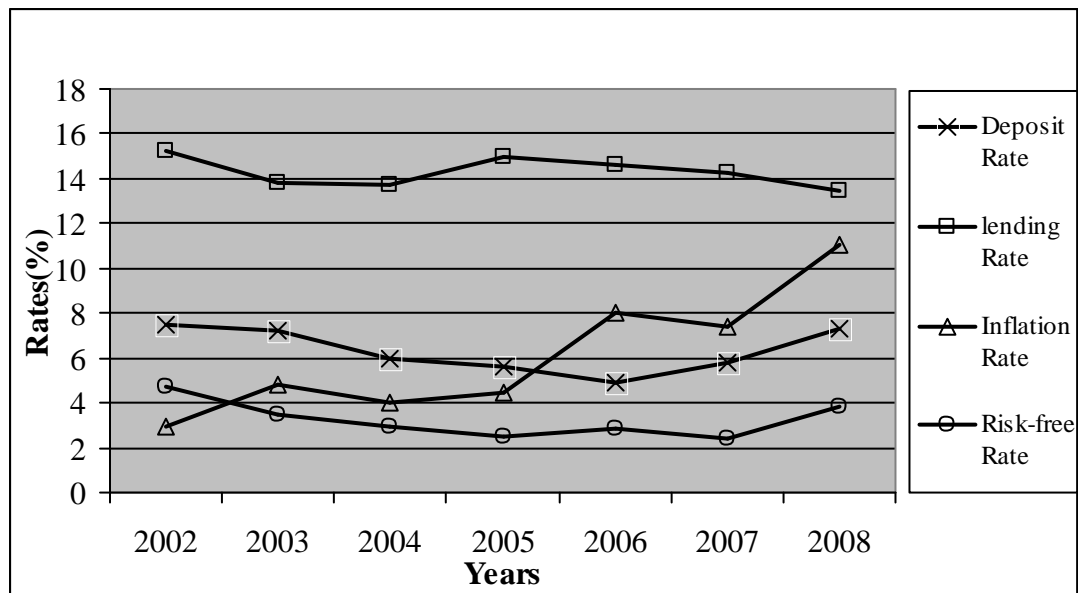
Table 4.22

Correlation Analysis of Union Finance Company Limited

Variables	Coefficient of Correlation	Coefficient of Determination	t-statistics	Table value	Remarks
r_{ab}	-0.4467	0.1995	1.1164	2.571	Insignificant
r_{bd}	-0.2279	0.0519	0.5234	2.571	Significant
r_{cd}	-0.3416	0.1167	0.8127	2.571	Insignificant
r_{be}	-0.1525	0.0233	0.3450	2.571	Insignificant
r_{bf}	0.8395	0.7047	3.4544	2.571	Significant
r_{de}	-0.4769	0.2274	1.2132	2.571	Insignificant
r_{df}	0.0980	0.0096	0.2202	2.571	Significant
Multiple Correlation Coefficient		$R_{b.ad} = 0.6009$	Coefficient of Multiple Determination		$R^2_{b.ad} = 0.3611$
		$R_{d.bc} = 0.3940$			$R^2_{d.bc} = 0.1552$
		$R_{b.ef} = 0.8404$			$R^2_{b.ef} = 0.7063$
		$R_{d.ef} = 0.4780$			$R^2_{d.ef} = 0.2285$

Figure 4.11

Relationship Between Rates of UFCO



Deposit amount and interest rate on deposit are negatively correlated ($r_{ab} = -0.4467$)

which shows that when amount deposited increases, interest rate on deposit will decrease

and vice-versa. The coefficient of correlation is statistically insignificant because calculated t-value is smaller than tabulated value for 5 degree of freedom at 5% level of significance (i.e. $1.1164 < 2.571$). Thus, the interest rate on deposit of UFCO is not affected by the amount of deposit collected. 19.95% of total variation in interest rate on deposit has been explained by amount deposited as shown by the coefficient of determination. In the same way amount loaned and interest rate on loan are also negatively correlated ($r_{cd} = -0.3416$) and it is not statistically significant because calculated t-value is smaller than tabulated value ($0.8127 < 2.571$). This means that interest rate on loan of UFCO is not affected by amount loaned. Of the total variation in interest rate on loan, 11.67% is the effect of amount loaned as shown by coefficient of determination, r_{cd}^2 .

Interest rate on deposit and lending are also negatively correlated and degree of relationship is low ($r_{bd} = -0.2279$). The coefficient of correlation is statistically insignificant because calculated t-value is significantly lower than tabulated value at 5% level of significance for 5 degree of freedom ($0.5234 < 2.571$). This means that these two rates are uncorrelated and change in interest rate on deposit does not affect interest rate on lending. 5.19% of total variation in interest rate on lending is the effect of interest rate on deposit as shown by the coefficient of determination, r_{bd}^2 . The relationship of inflation with interest rate on deposit and that on lending is negative ($r_{be} = -0.1525$ and $r_{de} = -0.4769$). This means that increased inflation brings decrement in both the interest rates and vice-versa. Test of significance for correlation coefficient between deposit rate and inflation rate, and lending rate and inflation rate are statistically insignificant because the calculated t-values of both variables r_{be} and r_{de} are smaller than tabulated values (i.e. 0.3450 and $1.2132 < 2.571$). Hence, it can be said that interest rate on deposit and lending

of UFCO are not affected by inflation. In other words, inflation has no significance influence on interest rate on deposit and interest charged on lending by UFCO. The coefficient of determination, r_{be}^2 is 0.0233 which shows that 2.33% of total variation in interest rate on deposit is the effect of inflation. The coefficient of determination r_{de}^2 is 0.2274, which shows that 22.74% of total variation in interest on lending is the effect of inflation.

The correlation coefficient of risk-free rate on deposit rate and lending rate is positive ($r_{bf} = 0.8395$ and $r_{df} = 0.0980$). This shows that an increment in risk-free rate brings increments in both the interest rates and vice-versa. The coefficient of correlation r_{bf} is statistically significant because the calculated t-value is significantly greater than the tabulated value (i.e. $3.4544 > 2.571$). Whereas the coefficient of correlation between risk-free rate and lending rate, r_{df} , are statistically insignificant because the calculated t-value is significantly lower than the tabulated value (i.e. $0.2202 < 2.571$). This means that interest rate on deposit of UFCO is affected by risk-free rate but the lending rate of UFCO is not affected by risk-free rate.

To examine the combined effect of two factors in interest at once multiple correlation coefficients has been computed. The multiple correlation coefficient taking interest rate on deposit as dependent and amount deposited and interest rate on lending as independent, $R_{b.ad}$, is 0.6009. The coefficient of multiple determination, $R_{b.ad}^2$ is 0.3611 which means that 36.11% of total variation in interest rate on deposit has been explained by two independent variables a and d (i.e. deposit amount and interest rate on lending) and remaining is the effect of other factors. Similarly, the multiple correlation coefficient assuming interest rate on deposit as dependent and inflation and risk-free rate as

independent, $R_{b,ef}$ is 0.8404. The coefficient of multiple determination $R^2_{b,ef}$ is 0.7063, which means that 70.63% of total variation in dependent variable (interest rate on deposit) has been explained by other two independent variables (inflation and risk-free rate) and remaining variation has been explained by other variables.

On the other hand, the multiple correlation coefficient taking interest rate on lending as dependent and amount loaned and interest rate on deposit as independent, $R_{d,bc}$, is 0.3940. The coefficient of multiple determination, $R^2_{d,bc}$, is 0.1552, which means that total variation in dependent variable has been explained by two independent variables to the extent of 15.52% and remaining is the effect of other factors. The multiple correlation coefficient assuming interest rate on lending as dependent and inflation and risk-free rate as independent, $R_{d,ef}$, is 0.4780. The coefficient of multiple determination, $R^2_{d,ef}$ is 0.2285 has meaning that 22.85% of total variation in dependent variable (interest rate on lending) is the effect of inflation and risk-free rate and remaining is due to the effect of other factors.

4.3 Qualitative (Primary Data) Analysis

There are various qualitative factors that affect interest rates of Nepalese banks and finance companies rather than responding demand and supply. A questionnaire (qualitative analysis tool) was made including the factors considered to be affecting the interest rate of Nepalese banks and finance companies. Opinion and experience of various related persons from various financial institutions have been collected through questionnaire which is presented as below. (Questionnaire is shown in appendix-1)

4.3.1 Factors Determining Interest Rate

Though it is assumed deposit increases as interest increases but interest is affected by numerous factors. In real world, different banking and finance companies quotes different interest rates. It means that the same type of instrument carries different interest rate. So, there is presence of interest spread. For this difference, there are numbers of factors influencing the difference in interest rates such as credit or default risk, marketability or liquidity risk, call or repayment risk, exchange rate risk, taxability, reinvestment risk, economic growth, money supply, budget deficit, inflation, cost of capital, competition, risk factors etc. Therefore, there are so many factors to be considered while determining the interest rate. When a question was asked, “What factors do you consider while determining the interest rate?” Respondents answer to this question is shown in the table below:

Table 4.23

Factors Determining Interest Rate

S.No.	Respondents	Total	Risk factor		Cost of capital		Competition		All of above	
		100%	No.	%	No.	%	No.	%	No.	%
1	Commercial bank	15	0	0	0	0	2	13.33	13	86.67
2	Development bank	3	0	0	1	33.33	1	33.33	1	33.33
3	Finance company	15	2	13.33	1	6.67	1	6.67	11	73.33
	Total	33	2	6.06	2	6.06	4	12.12	25	75.76

Source: Field Survey

From the analysis of the above table, 6.06% respondents consider risk factor while determining the interest rate, other 6.06% respondents consider cost of capital, 12.12% respondents consider competition and 75.76% respondents consider all of above factors. Therefore we can say that all the above factors should be considered while determining the interest rate.

When a supplementary question was asked, “Other, if any?” Many of the respondents do not respond. Few of the respondents answer to this question which is as follow:

- Economic growth
- Taxability
- Investment opportunity
- Liquidity risk
- Money supply

4.3.2 Methods of Charging Interest Rate on Lending

There are various methods to charge interest for lenders like add-on installment method, simple interest rate/lump sum method, discount method, simple or regular installment method etc. As per the questionnaire, most of the respondents do not understand about the various methods of interest calculation. From the questionnaire it is found that most of the organization uses EMI (Equated monthly installment) or simple/regular installment basis for calculation of interest and installment amount. Under this method loans are repaid in fixed interval of time i.e. monthly and each installment consist of some portion of principal and interest. Interest is charged on remaining balance of principal at quoted rate. From the direct interview with credit managers of different institutions it is found that installment might be monthly or quarterly, although they are using EMI basis and the duration of installment also depends upon the nature of loan i.e. it differs according to the sectors and borrowing party (individual business sector employee and institution).

4.3.3 Violence, Insecurity, Political Instability and its effect on Interest Rate

Political instability and violence is affecting the operations of Nepalese banking and finance companies. Frequently organized strikes, bandas reduce the working hours of the

Nepalese banking and finance companies. It adds the operating cost burden. In long run interest rate of such institutions is affected by the activities of political parties and violence. Such activities dampen the overall economy that's why business growth rate decreases and lending opportunities are curtailed. This results in decreased demand of loanable fund and interest rate also falls. Similarly, frequently changing governments are also affecting overall operation of Nepalese banking and finance companies including interest rate, through the decision of different government and governor of NRB regarding financial system of the country. Violence also reduces the investment opportunities of individuals. People are afraid to invest due to the lack of safety, security. And return from investment may be uncertain. When a question was asked, "In your experience, whether people deposit more or withdraw more in the situation of violence, insecurity and political instability?" respondents answer to this question is shown in the table below:

Table 4.24

Violence, Insecurity, Political Instability and its effect on Interest Rate

S.No.	Respondents	Total 100%	Deposit more		Withdraw more		No effect	
			No.	%	No.	%	No.	%
1	Commercial bank	15	14	93.33	1	6.67	0	0
2	Development bank	3	2	66.67	0	0	1	33.33
3	Finance company	15	12	80	1	6.67	2	13.33
	Total	33	28	84.85	2	6.06		9.1

Source: Field Survey

From the analysis of the above table, 84.85% respondents answer deposit more, 9.1% respondents answer no effect and 6.06% respondents answer withdraw more deposit in the situation of violence, insecurity and political instability. So, we can conclude that at the time of violence, insecurity, political instability people deposit more.

4.3.4 Competition and Interest Rates

Competition is the most important factor among the various factors affecting interest rate.

Competition occupies a major place for the development of Nepalese banking and finance companies with-in the financial system of Nepal. Interest rates charged and offered by Nepalese banking and finance companies compete within their group. Question was asked, “Does competition among the market participants put any influence on interest rate on lending and borrowing of this institution?” Following response was found:

Table 4.25

Competition and its impact on Interest Rate

S.No.	Respondents	Total 100%	Strong influence		Influence		Less influence		Not at all influence	
			No.	%	No.	%	No.	%	No.	%
1	Commercial bank	15	5	33.33	8	53.33	2	13.33	0	0
2	Development bank	3	1	33.33	0	0	2	66.67	0	0
3	Finance company	15	3	20	12	80	0	0	0	0
	Total	33	9	27.27	20	60.6	4	12.12	0	0

Source: Field Survey

From the above table, 60.60% respondents answer the interest rate is influenced by competition, 27.27% respondents answer the interest rate is strongly influenced by competition, and 12.12% respondents answer the interest rate is less influenced by competition. So, we can say that competition influences on lending and borrowing of the organization.

4.3.5 Maturity Period of Loan and Interest Rate

Theoretically, interest rate is affected by maturity period of loan. The longer the maturity period, higher the default risk (i.e. failure to repay to loan) and hence higher will be the risk-premium added to prime interest rate. In Nepalese context, generally, banking and

finance companies do not provide long-term loan rather they renew frequently according to the borrower's credit worthiness. Such banks and finance companies evaluate the borrowers' creditworthiness in terms of size of their business or project, cashflow, nature of loan, goodwill etc. When a question was asked, "Does interest rate differ according to maturity period of loan (time preference)? Following response was found for this question.

Table 4.26

Maturity Period of Loan and Interest Rate

S.No.	Respondents	Total 100%	Yes		No		Higher rate for longer maturity	Lower rate for longer maturity			
			No.	%	No.	%		No.	%		
1	Commercial bank	15	14	93.3	1	6.67	If yes	14	100	0	0
2	Development bank	3	3	100	0	0		3	100	0	0
3	Finance company	15	13	86.7	2	13.3		13	100	0	0
	Total	33	30	90.9	3	9.1		30	100	0	0

Source: Field Survey

From the analysis of above table, 90.9% respondents answer that the interest rates differ according to maturity period of loan. 9.1% respondents answer that the interest rates does not differ according to maturity period of loan. 100% respondents answer higher rate for longer maturity period of loan. So, we can say that in Nepalese banking and finance companies interest rate differs according to maturity period of loan and higher interest rate charged for longer maturity period of loan.

4.3.6 India's Bank Policy and Interest Rate

Nepal has long range of open border with India. Any economic activity in India directly affects Nepalese economy. More than 60% of total foreign trade (export and import) of

Nepal is with India. Therefore, question was asked, “Does India’s bank policy affect the interest rate on lending and deposit?” Following response was found;

Table 4.27

Impact of India’s Bank Policy on Interest Rate

S.No.	Respondents	Total 100%	Highly affecting		Affecting to some extent		Not affecting at all	
			No.	%	No.	%	No.	%
1	Commercial bank	15	3	20	10	66.67	2	13.33
2	Development bank	3	0	0	3	100	0	0
3	Finance company	15	2	13.33	9	60	4	26.67
	Total	33	5	15.15	22	66.67	6	18.18

Source: Field Survey

From the analysis of above table, 66.67% respondents answer interest rate is affecting to some extent by India’s bank policy. 18.18% respondents answer India’s bank policy does not affect interest rate on lending and borrowing. Whereas; 15.15% respondents answer India’s bank policy is highly affect interest rate on lending and borrowing. So, we can say that interest rate is affecting to some extent by India’s bank policy.

4.3.7 Seasonal Impact on Interest Rate

Most often Nepal suffers from natural disaster like landslides and roads get blocked even for a week or month in rainy season. Theoretically, trading and manufacturing business needs to keep more inventories for their regular operation in the situation. Our intuition was that businesses borrow more in the beginning of the rainy season to keep more inventories, which increases the demand of loan and interest rate on lending increases. But in reality our belief came false. No single organization from sample organizations has been experiencing such impact on interest. It is so because out of total lending of institution only small portion is occupied by working capital loan. Therefore, we can

conclude that there is no any seasonal impact on interest rate charged and offered by Nepalese banking and finance companies.

4.3.8 Impact of Treasury-Bill Rate on Interest Rate

The government fixes certain interest rate on the government securities i.e. Treasury bills, National saving certificates and development bonds. As usual issuance of government securities, repayments of principal & interest and secondary market transaction of such securities were done for the internal debt management. Interest rate on Treasury-bills issued on the basis of quotation increased. Treasury-bill may be 28 days, 91 days, 182 days and 364 days. Weighted average Treasury-bill (91 days) is risk-free rate. So, the Treasury bill rate (91 days) may be the indication for determination of interest rate in Nepalese banking and finance companies.

When a question was asked, “How far the Treasury bill rate is affecting interest rate charged and provided by your organization?” Respondents answer to this question is shown in Table below.

Table 4.28

Effect of Treasury-Bill Rate on Interest Rate

S.No.	Respondents	Total 100%	Highly affecting		Normally affecting		Affecting to some extent		Not affecting at all	
			No.	%	No.	%	No.	%	No.	%
1	Commercial bank	15	3	20	7	46.67	5	33.33	0	0
2	Development bank	3	0	0	2	66.67	1	33.33	0	0
3	Finance company	15	1	6.67	7	46.67	7	46.67	0	0
	Total	33	4	12.12	16	48.48	13	39.4	0	0

Source: Field Survey

From the analysis of above table, 48.48% respondents answer Treasury bill normally affect interest rate on lending and borrowing, 39.40% respondents answer Treasury bill affects interest rate to some extent and remaining 12.12% respondents answer Treasury bill highly affect interest rate charged and offered by Nepalese banking and finance companies. Thus, we can say that interest rate is normally affected by Treasury bill.

4.3.9 Deposit in a Particular Bank

When a question was asked, “What attracts you to deposit your saving in a particular bank?”. Following response was found:

Table 4.29
Deposit in a particular bank

S.No.	Respondents	Total 100%	Interest rate		Security		Reputation of the bank	
			No.	%	No.	%	No.	%
1	Commercial bank	15	5	33.33	9	60	1	6.67
2	Development bank	3	1	33.33	0	0	2	66.67
3	Finance company	15	3	20	10	66.67	2	13.33
	Total	33	9	27.27	19	57.57	5	15.15

Source: Field Survey

From the analysis of above table, 57.57% of respondents answer that security attracts them to deposit in a particular bank, 27.27% of respondents are attracted by interest rate and remaining 15.15% of respondents are attracted by reputation of the bank to deposit their saving.

4.3.10 Equity Capital and Interest Rate

To know the effect of equity capital on interest rate, a question was asked, “Do finance companies being smaller in terms of equity capital affect their interest rate?”

Respondents answer to this question is shown in the table below:

Table 4.30

Equity Capital and Interest Rate

S.No.	Respondents	Total 100%	Highly affecting		Normally affecting		Affecting to some extent		Not affecting at all	
			No.	%	No.	%	No.	%	No.	%
1	Commercial bank	15	0	0	7	46.67	8	53.33	0	0
2	Development bank	3	1	33.33	0	0	2	66.67	0	0
3	Finance company	15	1	6.67	5	33.33	6	48	3	20
	Total	33	2	6.06	12	36.36	16	48.48	3	9.09

Source: Field Survey

From the analysis of above table, 48.48% of respondents answer that smaller equity capital in finance company affect the interest rate to some extent. 36.36% of respondents answer that it normally affects interest rate. Similarly, 9.09% of respondents believe that it does not affect interest where as 6.06% of respondents agree that smaller equity capital in finance company do highly affect to interest rate. So, we can say that equity capital of finance company affect interest rate to some extent only.

4.3.11 Impact of Income Tax Rule on Interest Rate

One of the factors influencing the change in interest rate is taxability. The income from securities, interest or dividends and capital gains, are subject to taxation at the stipulated rate. Such tax treatment reduces the investors' real income. Income tax rule of Nepal affects interest rate charged and offered on security returns by banking and finance companies. There is negative impact of income tax rule of security returns on determinants of interest rates in Nepalese banking and finance companies. If the income from securities, interest or dividends and capital gain, is non-taxable there would be

positive impact of income tax. When a question was asked, “Does income tax rule of Nepal affect the interest rate charged and offered by Nepalese banking and finance companies? If so what is the impact of income tax on interest rate charged and provided by Nepalese banking and finance companies?”. Respondents answer to this question is shown in the table below:

Table 4.31
Impact of Income Tax Rule on Interest Rate

S.No.	Respondents	Total	No		Yes		Positive impact	Negative impact			
			No.	%	No.	%		No.	%		
		100%									
1	Commercial bank	15	0	0	15	100	If yes	1	6.67	14	93.33
2	Development bank	3	2	66.7	1	33.3		1	100	0	0
3	Finance company	15	0	0	15	100		1	6.67	14	93.33
	Total	33	2	6.06	31	93.94		3	9.67	28	90.32

From the analysis of the above table, 93.94% respondents answer ‘yes’ i.e. income tax rule of Nepal affects the interest rate charged and offered by Nepalese banking and finance companies. 90.32% respondents answer negative impact and 9.67% respondents answer positive impact of income tax .So, we can say that income tax rule of Nepal negatively affects the interest rate charged and offered by Nepalese banking and finance companies.

4.3.12 Relationship between the Price of Security and Interest Rate

The price of the security and its yield (rate of interest) has inverse relationship. It means that a rise in yield implies a decline in price. Conversely, a fall in yield is associated with a rise in the security’s price. Investing funds in financial assets can be viewed from two different perspectives, the borrowing and lending of money or the buying and selling of securities. Interest rate is determined equilibrium rate from demand for loanable funds

(borrowings) and supply of loanable funds (lending/saving). Interest rate and demand for loanable funds (borrowing) have inverse relation, i.e. rise in interest rate decrease the demand and vice-versa. Likewise, interest rate and supply of loanable funds (lending/saving) has positive relation. Security price is determined equilibrium demand for security (lending) and supply of securities (borrowings). Demand for loanable funds (borrowing) in interest rate determination is the supply of security (borrowings) in security price determination. Likewise, supply of loanable funds (lending) in interest rate determination is the demand for securities (lending) in security price determination. Therefore, the price of the security and its rate of interest (yield) have inverse relationship.

When a question was asked, “Is there any relation between interest rate and security price?”. Respondents answer to this question is shown in the table below:

Table 4.32

Relation between the Price of Security and Interest Rate

S.No.	Respondents	Total 100%	Positive relation		Negative relation		No relation	
			No.	%	No.	%	No.	%
1	Commercial bank	15	3	20	12	80	0	0
2	Development bank	3	1	33.3	1	33.3	1	33.33
3	Finance company	15	2	13.3	11	73.3	2	13.33
	Total	33	6	18.2	24	72.72	3	9.09

Source: Field Survey

From the analysis of the above table, 72.72% respondents answer there is negative relation between interest rate and security prices, 18.18% respondents answer positive relation and 9.09% respondents answer no relation between interest rate and security

prices. So, we can say that there is negative relation between interest rate and security prices.

4.3.13 Economic Recession and its Impact on Interest Rate

After the great depression of 1930, it has been observed that the current crisis has hit hard most of the advanced and newly industrial economies. The hard hit countries were those which have large exposure to the external banking system. In this context, it is worth looking at does the economic recession will affect Nepal's economy. When a question was asked, "Does the economic recession affect developing country like Nepal? If yes, what is the impact of economic recession on interest rate on interest rate charged and offered by your organization?" Following response was found.

Table 4.33

Economic Recession and its Impact on Interest Rate

S.No.	Respondents	Total 100%	Yes		No		If yes	Positive impact		Negative impact	
			No.	%	No.	%		No.	%	No.	%
1	Commercial bank	15	0	0	15	100		0	0	15	100
2	Development bank	3	3	100	0	0		0	0	0	0
3	Finance company	15	0	0	15	100		0	0	15	100
	Total	33	3	9.1	30	90.9		0	0	30	100

Source: Field Survey

From the analysis of above table, 9.1% respondents answer economic recession does not affect developing country like Nepal and 90.9% respondents answer economic recession does affect developing country like Nepal. Among the respondents who answer yes, 100% answer economic recession causes negative impact on interest rate charged and offered by the organization. Thus, we can say that global economic crisis not only affect economically advanced county, it also affect to the developing country like Nepal.

4.3.14 Inflation and Interest Rate

Theoretically, interest rate is caused by inflation. There is positive relation between interest rate and inflation. It means, increase in inflation increases the interest rate and vice-versa. When a question was asked, “Does the interest rate affect by inflation?”. All respondents answer that the interest rate is affected by inflation. For additional question, how your organization has adjusted interest rate with inflation? Only few respondents answer to the question. According to them the interest rate is adjusted by increasing interest rate as if inflation rate increases and vice-versa.

4.3.15 Other Factors Affecting Interest Rate on Lending and Borrowing

There are so many other factors that affect interest rate in Nepalese banking and finance companies. So, question was asked, “If there is any other factors affecting interest rates (charged and provided) in Nepalese banking and finance companies then please mention.”. Following response was found for this question from respondents which are as follows:

Interest Rate on Deposit:

- Ñ Cash Reserve Ratio
- Ñ Goodwill of the company
- Ñ Investment opportunities
- Ñ Remittance from foreign employments
- Ñ Liquidity in finance company

Interest Rate on Lending:

- Ñ Nature of business
- Ñ Volume of loan

- Ñ Cash flow power
- Ñ Performance of the borrowing company
- Ñ Reputation and goodwill of the borrowers collateral base
- Ñ Trustworthiness of customers
- Ñ Lending cost
- Ñ Government policy.

CHAPTER -V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter is the last part of the research study which includes 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 reviews of all four chapters are made viz. Introduction, Literature Review, Research Methodology and Analysis of data. Then conclusion is drawn following analysis part. Based on conclusion, necessary suggestions are presented in recommendation part i.e. various measures are recommended to concerned organization or authority involved in the matter of this study. Recommendation is made with the hope of improving present situation of Interest rates in Nepalese banking and finance companies.

5.1 Summary

After the liberalization policy various banks and finance companies came into existence to play important role in the development of financial system of the country.

Agriculturally dependent, Nepal is economically backward country despite being rich in natural resources. Natural resources are being remained unused due to the lack of financing and technical know-how. Circulation of money from savers to users is must for the economic development. Financial system, as an intermediary, facilitates the circulation of fund by collecting scattered fund from savers viz. household (individuals and family), business and government sector of the economy and provides the collected fund to users.

Banking and finance companies in Nepal, as an organized sector for capital mobilization, was started after the advent of NBL in 1994 B.S. as a joint venture between government and private sector. Till mid-July 2008, there are 25 “A” class commercial banks, 58 “B” class development banks, 78 “C” class finance companies, 12 “D” class micro-credit development banks, 16 saving and credit co-operatives and 46 Non-Government Organization taking license from NRB. Banking and finance companies survive by making profit. Major portion of profit is occupied by interest spread i.e. difference between interest received and interest charged. Interest is the payment made for the use of money and interest rate is the amount of interest paid per unit of time expressed as a percentage of the amount borrowed. What are the responsible factors that affect interest rate of listed Nepalese banking and finance companies was the main purpose of this study. Nepal Rastra Bank, as central bank is the authority to fix the interest rate on deposits and loans of banking and finance companies in Nepal since its establishment in 2013 B.S. After the restoration of democracy and liberal policy adopted by the government, many banking and finance companies have been established. NRB also gave freedom to fix the interest rate that they charge and offer. But NRB used to issue directives regarding overall performance of the banking and finance companies.

The Classical Theory of interest emphasizes saving and investment demand as interest determining forces, while the Liquidity Preference Theory points to the demand and supply of cash balances. Loanable Fund Theory views interest rate as determined by the total demand for and supply of credit, while the Rational Expectations Theory emphasizes the roles played by expectations regarding interest rate, economy and impact of new information on the movement of interest rates to a new equilibrium. Collectively the different theories of interest rates determination are examined in this study. Interest rate

movements affect the value of most banking and finance companies. Both the cost of funds to depository institutions and the interest received on same loans are affected by interest rate movements. The market value of securities (such as bonds) held by depository institutions or non-depository institutions are affected as well. Thus, managers of banking and finance companies must closely monitor interest rate movements. So, they can capitalize on favorable movements or reduce their institutions exposure to unfavorable movements.

The studies of sample organization are summarized as below:

- The correlation coefficient between interest rate on deposit and amount deposit (r_{ab}) of NABIL and NDBL are positively correlated. NDBL is statistically significant. Remaining sample organizations are negatively correlated. Among them PFCO is statistically significant. Whereas NSBIBL, NIBL, EBL, SCBNL, KAFL, NFCO, Pre. FCO and UFCO are statistically insignificant.
- The correlation coefficient between amount loaned and interest rate on lending (r_{cd}) of NDBL is highly positively correlated and is statistically significant. Remaining 10 sample organizations are negatively correlated. Among then NSBIBL, NABIL, EBL, SCBNL are statistically significant and NIBL, PFCO, KAFL, NFCO, Pre. FCO and UFCO are statistically insignificant.
- The correlation between interest rate on deposit and lending rate (r_{bd}) of NABIL and UFCO are found to be negatively correlated and are statistically insignificant. Other 9 sample organizations are found to be positively correlated. NIBL, EBL, NDBL, KAFL and Pre. FCO are statistically significant. But NSBIBL, SCBNL, PFCO and NFCO are found to be statistically insignificant.

- The correlation coefficient between interest rate on deposit and inflation rate (r_{be}) of NABIL and NFCO are positively correlated. The correlation coefficient of NABIL and NFCO are statistically insignificant. Remaining 9 sample organizations are found to be negatively correlated. The correlation coefficient of NDBL and PFCO are significantly correlated. The correlation coefficient of NSBIBL, NIBL, EBL, SCBNL, KAFL, Pre. FCO and UFCO are insignificantly correlated.
- The correlation between interest rate on deposit and risk-free rate (r_{bf}) of all sample organizations are found to be positive. NSBIBL, EBL, KAFL, NFCO, Pre. FCO and UFCO are statistically significant. Remaining sample organizations i.e. NABIL, NIBL, SCBNL, NDBL and PFCO are statistically insignificant.
- The correlation coefficient between inflation rate and interest rate on lending (r_{de}) of all sample organizations are found to be negatively correlated. The correlation coefficient of NSBIBL, EBL, SCBNL, NDBL and NFCO are statistically significantly correlated. Whereas NABIL, NIBL, PFCO, KAFL, Pre. FCO and UFCO are statistically insignificant.
- The correlation coefficient between risk-free rate and interest rate on lending (r_{df}) of all sample organizations except PFCO are found to be positive. Among them KAFL and Pre. FCO are statistically significant. Other sample organizations i.e. NSBIBL, NABIL, NIBL, EBL, SCBNL, NDBL, NFCO and UFCO are statistically insignificant.

statistically insignificant where as correlation coefficient of NDBL is statistically significant. Theoretically, there must be positive correlation meaning that higher interest rate on deposit attracts more deposit. But this study found that interest rate on deposit is not affected by amount deposited.

2. The correlation between amount loaned and interest rate on lending (r_{cd}) of NDBL is found to be highly positively correlated. Correlation coefficient of NDBL is statistically significant which indicates that when amount of loan increases, interest rate on lending also increases. Remaining 10 sample organizations are negatively correlated ranges from -0.9426 to -0.3416. Negative correlation coefficients (r_{cd}) of sample organizations means that more lending amounts are demanded at lower interest rate. Correlation coefficients of NIBL, PFCO, KAFL, NFCO, Pre. FCO and UFCO are statistically insignificant. And correlation coefficient of NSBIBL, NABIL, EBL, and SCBNL are statistically significant which means that when demand of loan increases interest rate on lending decreases and vice-versa. In general, there should be positive relationship between interest rate on lending and amount loaned. But the result shows that interest rate on lending of most sample organizations are not affected by amount loan.
3. The correlation between interest rate on deposit and interest rate on lending (r_{bd}) of NABIL and UFCO are negatively correlated. The t-statistics of negative correlation between interest rate on deposit and interest rate on lending is insignificant. It means that they have no relationship with each other. Remaining 9 sample organizations are found to be positively correlated. Among them NIBL, EBL, NDBL, KAFL and Pre. FCO are significantly correlated which means that an increment in interest rate on deposit brings increment in interest

rate on lending and vice-versa. Whereas NSBIBL, SCBNL, PFCO and NFCO are statistically insignificant which means that the change in interest rate on deposit does not affect on interest rate on lending for these organizations. Hence, from this study, we can say that interest rate on deposit of Nepalese banking and finance companies are positively affected by interest rate on lending.

4. The correlation between interest rate on deposit and inflation rate (r_{be}) of NABIL and NFCO are positively correlated. The correlation coefficient of NABIL and NFCO are statistically insignificant, which means that interest rate on deposit of NABIL and NFCO are not affect by inflation. Other 9 sample organizations are found to be negatively correlated. The correlation coefficient of NDBL and PFCO are statistically significant. It means that interest rate on deposit of these two sample organizations are affected by inflation. When inflation rate increases interest rate on deposit decreases and vice-versa. The correlation coefficient of NSBIBL, NIBL, EBL, SCBNL, KAFL, Pre. FCO and UFCO are statistically insignificant which means that the interest rate on deposit of these sample organizations are not correlated with inflation rate and the movement in inflation rate does not affect the interest rate on deposit. According to Fisher effect, there should be positive correlation between these two variables but the interest rate in Nepalese banking and finance company is affected by inflation rate to some extent only. In conclusion it can be said that, the Fisher effect is not properly applicable in Nepalese financial market.
5. The correlation between interest rate on deposit and risk-free rate (r_{bf}) of all sample organizations are positive. It ranges from 0.5522 to 0.9242. The correlation coefficients of NSBIBL, EBL, KAFL, NFCO, Pre. FCO and UFCO

are statistically significant which means that when risk-free rate increases, interest rate on deposit also increases and vice-versa. Remaining sample organizations i.e. NABIL, NIBL, SCBNL, NDBL and PFCO are statistically insignificant. Theoretically, there should be positive correlation between these two variables. From this study, we conclude that interest rate on deposit of sample organizations are positively affected by risk-free rate.

6. The relationship between interest rate on lending and inflation rate (r_{de}) of sample organizations are found to be negative. The correlation coefficient of NSBIBL, EBL, SCBNL, NDBL, and NFCO are statistically significant meaning that when inflation rate increases, interest rate on lending decreases and vice-versa. Further, the correlation coefficient of NABIL, NIBL, PFCO, KAFL, Pre. FCO and UFCO are statistically insignificant which means that there do not exist any relationship between interest rate on lending and inflation rate. Increase/decrease in interest rate on lending does not bring decrease/increase in inflation rate. It causes due to the other factors in the economy. Theoretically, there should be positive relationship between interest rate on lending and inflation rate. But the sample organizations have inverse relationship.
7. The relationship between interest rate on lending with risk-free rate (r_{df}) of sample organizations are found to be positive except PFCO. The correlation coefficient of KAFL and Pre. FCO are statistically significant. It means that an increment in risk-free rate also brings increment in interest rate on lending and vice-versa. But the correlation coefficients of NSBIBL, NABIL, NIBL, EBL, SCBNL, NDBL, NFCO and UFCO are statistically insignificant which means that the interest rate charged on lending is not affected by the risk-free rate.

Thus, we can say that interest rate on lending in Nepalese banking and finance companies are not affected by risk-free rate of interest.

8. Though there are various methods of charging interest rate on lending, EMI (Equated Monthly Installment) or simple/regular installment basis for calculation of interest rate and installment amount is popular in listed Nepalese banking and finance companies.
9. Violence, insecurity, and political instability greatly affects on interest rate charged and offered by Nepalese banking and finance company. At the time of violence, insecurity and political instability people prefer to deposit more.
10. Competition does influence interest rate on lending and borrowing of listed Nepalese banking and finance companies.
11. Maturity period of loan also affects the interest rate on lending in listed Nepalese banking and finance companies and higher interest rate charged for longer maturity period.
12. Interest rate on deposit and lending is affecting to some extent by India's bank policy.
13. There is no seasonal impact on interest rate in listed Nepalese banking and finance companies.
14. Interest rate charged and provided by listed Nepalese banking and finance companies are normally affected by risk-free rate i.e. Treasury bill rate.
15. Security of banks and finance companies is attracted by depositor to deposit their savings in a particular bank.
16. Finance companies being smaller in terms of equity capital affect interest rate to some extent only.

17. The relationship between price of security and interest rate is found to be negative. It means that a rise interest rate implies a decline in price of security and vice-versa.
18. Recently most of the nations are suffering from economic recession. In our country a rumor spread that economic recession does not affect. To clarify this rumor, a question was asked. According to the respondents, global economic crisis not only affects economically advanced countries, it also affects to the developing countries like Nepal. And the impact of economic recession on interest rate charged and offered by listed Nepalese banks and finance companies are found to be negative.
19. Interest rate is positively affected by inflation rate and the adjustment in interest rate is done by increasing the interest rate when inflation rate increases in most of the listed Nepalese banks and finance companies.
20. Other specific factors affecting interest rate on deposit are goodwill of the company, investment opportunity, cash reserve ratio, remittance from foreign employments, liquidity etc. Similarly, the other specific factors affecting interest rate on lending are nature of business, volume of loan, cash flow power, performance of the borrowing company, reputation and goodwill of the borrower, trustworthiness of customers, lending cost, government policy etc.

5.3 Recommendations

Based on the analysis, interpretation and conclusions, certain recommendation can be made here so that the concerned authorities, further researchers, academicians, bankers can get some insights on the present conditions on above topics. It is considered that this

research will be fruitful for them to improve the present condition as well as for further research. The major recommendations after this study are:

1. Nepalese banking and finance companies should reduce the interest spread i.e. difference between deposit interest rate and lending interest rate as minimum as possible:

The high spread between deposit interest rate and lending interest rate is the major factor to be considered. Higher spread merely increases the profit figures of the banks and finance companies but at the same time it reduces the deposit collection and investment in the country. Now, the interest rate became market determined phenomena after deregulation of interest rate and removal of spread by NRB. So, the listed Nepalese banking and finance companies are suggested to reduce the interest spread as minimum as possible.

2. Nepalese banking and finance company should quote one consistent lending rate rather than quoting on range:

The lending rate of commercial banks, development banks and financed companies on similar sector are found to be different i.e. quoted on range. The interest rate varies with the status of the clients. They charge less interest for regular customers whereas they charge more to others on the same lending and borrowing. These types of inconsistencies may bring misconception about the organization. So, banks and finance companies are suggested to quote one consistent rate than on range.

3. Nepalese banking and finance companies should set proper and practical interest rate policy:

As the key success for any organization and for good financial system in the country, capital and investment is essential. This is possible only by proper decision making of interest. So, listed Nepalese banking and finance companies are suggested to set proper and practical interest rate policy.

4. Nepalese banking and finance companies should charge high lending rate on unproductive sector than productive sector:

Comparatively high lending rate on interest should be charged to unproductive sector than productive sector. The investment on unproductive sectors such as construction of houses, luxurious goods, ornaments etc blocks the circulation of money in the economy as well as create unemployment situation in the country in long run.

5. Nepalese banking and finance companies should attract more customers:

The current financial potential of the banking sector is still not large enough to tap the country's economy. If the country received four or five major hydro and road projects, the deposit mobilization of the banking sector would fall short of what is required. So, listed Nepalese banking and finance companies are suggested to attract more customers.

6. NRB and government should promulgate suitable policies for money market as well as financial intermediaries:

NRB and government should promulgate suitable policies to foster the development of money market and motivate financial intermediaries.

7. NRB should provide clear-cut policy and control mechanism for Nepalese banking and finance companies:

NRB should provide clear-cut policies and control mechanisms for Nepalese banking and finance companies to build up public confidence.

8. NRB and other sample organizations should publish information in time so that depositors, lenders and other concern authorities to take decision correctly:

From the experience of collecting secondary data, it is suggested that NRB and other sample organizations should publish information timely and should increase its information dissemination activities to provide knowledge to the depositors; lenders and other concerned authorities so that they can make their decisions correctly. Untimely publication of such information may cause negative impact on the efficiency of those whose workings are based on this information.

9. The government should try to maintain political stability for development of the Nepalese banking and finance companies:

In market oriented economy, the role of government is to provide security and develop infrastructure. Our analysis showed that economic activities are slacking down due to the political activities in country. So, the investment opportunities (lending opportunities) of the financial intermediaries have been curtailed. Therefore, the government should try to maintain the political stability for the development of the Nepalese banking and finance companies.

10. Co-operate with researchers:

Sample organizations are also suggested to include their interest rate structure in their annual report as well as kindly requested for the co-operation and sincere support to the research students.

11. Further researchers are advice to consider other aspect of interest:

As this research is made by highlighting only factors affecting interest rate on listed Nepalese banking and finance companies, further researchers are advised to consider other aspects of interest.

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APPENDIX-3**Deposit Amount of Sample Commercial Banks****(Rs. In million)**

Year	NSBIBL	Nabil	NIBL	EBL	SCBNL
2002	5572.20	15370.60	4174.80	5461.10	15835.70
2003	6522.80	13437.70	7922.80	6694.90	18755.50
2004	7232.10	14098.00	11706.30	8064.00	21161.40
2005	8645.69	14586.80	14254.80	10097.80	19344.00
2006	10852.71	19348.40	18927.30	13802.45	23050.50
2007	11445.29	23342.28	24488.90	19097.77	24640.30
2008	13715.39	31915.05	34451.80	23976.30	29743.90

Source: *Annual Reports of sample commercial banks and various banking and financial statistics, Nepal Rastra Bank.*

Lending Amount of Sample Commercial Banks**(Rs. In million)**

Year	NSBIBL	Nabil	NIBL	EBL	SCBNL
2002	4593.90	7072.00	2715.70	3969.60	5787.90
2003	4766.10	8010.90	5949.20	5030.90	6080.70
2004	5552.50	8652.20	7290.20	6116.60	6729.60
2005	6765.10	11360.30	10490.40	7944.10	8527.10
2006	8250.80	13278.80	13171.50	10154.90	9206.30
2007	10064.40	15903.00	17769.10	14100.00	10790.00
2008	12742.60	21769.70	27529.30	18836.40	13964.40

Source: *Annual Reports of sample commercial banks and various banking and financial statistics, Nepal Rastra Bank.*

APPENDIX-4**Deposit Amount of Sample Development Bank****(Rs. In million)**

Year	NDBL
2002	1903.00
2003	1985.80
2004	1845.50
2005	1631.30
2006	1538.10
2007	1312.10
2008	457.50

Source: *Annual Reports of NDBL and various banking and financial statistics, Nepal Rastra Bank.*

Lending Amount of Sample Development Bank**(Rs. In million)**

Year	NDBL
2002	1605.70
2003	1443.90
2004	1532.80
2005	842.20
2006	623.70
2007	643.80
2008	445.80

Source: *Annual Reports of NDBL and various banking and financial statistics, Nepal Rastra Bank.*

APPENDIX-5**Deposit Amount of Sample Finance Companies****(Rs. In million)**

Year	PFCO	KAFL	NFCO	Pre. FCO	UFCL
2002	161.40	234.70	530.00	122.20	303.50
2003	142.20	239.80	531.80	158.10	308.40
2004	187.30	246.00	530.00	247.10	518.78
2005	337.60	248.30	571.90	244.30	538.73
2006	517.90	305.02	621.80	215.40	594.69
2007	529.20	316.72	629.50	252.99	669.98
2008	511.30	326.39	651.00	389.83	720.90

Source: *Annual Reports of sample finance companies and various banking and financial statistics, Nepal Rastra Bank.*

Lending Amount of Sample Finance Companies**(Rs. In million)**

Year	PFCO	KAFL	NFCO	Pre. FCO	UFCL
2002	140.20	236.60	439.90	117.20	288.10
2003	98.50	248.00	390.30	151.30	245.80
2004	181.80	236.70	429.80	189.20	213.48
2005	356.00	246.60	492.30	215.30	243.60
2006	529.30	244.08	509.70	250.20	407.09
2007	564.50	284.15	549.30	292.58	599.55
2008	566.50	273.93	742.10	450.19	722.23

Source: *Annual Reports of sample finance companies and various banking and financial statistics, Nepal Rastra Bank.*

APPENDIX-6

Interest Rate Structure of Deposit (Sample Commercial Banks)

Everest Bank Limited

Year	Savings		Special Savings		14 days		1 month		2 months		3 months		6 months	
	Limit	Avg.	Limit	Avg	Limit	Avg.	Limit	Avg	Limit	Avg	Limit	Avg	Limit	Avg
2002	5.25	5.25	0	0	3.5-4	3.75	4.5-5	4.75	0	0	4.75-5.25	5	5.5-6	5
2003	4-5	4.5	0	0	3	3	3.5	3.5	0	0	4	4	5	
2004	4.5	4.5	0	0	3	3	3.5	3.5	0	0	4	4	5	
2005	0.75-3.25	2	0	0	2.25	2.25	2.25	2.25	0	0	2.5	2.5	3	
2006	3.25	3.25	2.75	2.75	0	0	0	0	0	0	3	3	3.5	
2007	3	3	2.75	2.75	0	0	2.75	2.75	2.75	2.75	3	3	3.5	
2008	3	3	2.75-4	3.38	0	0	0	0	0	0	3	3	3.5	

Source: Annual Reports of EBL and various banking and financial statistics, Nepal Rastra Bank.

Nepal Investment Bank Limited

Year	Savings		Special Savings		14 days		1 month		3 months		6 months		1 year
	Limit	Avg.	Limit	Avg	Limit	Avg.	Limit	Avg	Limit	Avg	Limit	Avg	Limit
2002	5	5	0	0	3	3	4	4	5	5	5.5	5.5	6.5
2003	5	5	0	0	3	3	4	4	5	5	5.5	5.5	6.5
2004	5	5	0	0	3	3	4	4	5	5	5.5	5.5	6.5
2005	2.5-2.75	2.625	0	0	1.25	1.25	1.75	1.75	2.5-2.75	2.625	2.75-3	2.875	3.5-3.75
2006	2.5	2.5	2.75	2.75	1.25	1.25	1.75	1.75	2.5-2.75	2.625	2.75-3	2.875	3.5-3.75
2007	2.5	2.5	2.75	2.75	1.25	1.25	1.75	1.75	2.5-2.75	2.625	2.75-3	2.875	3.5-3.75
2008	2.5	2.5	2.75	2.75	1.25	1.25	1.75	1.75	2.5-2.75	2.625	2.75-3	2.875	5-5.5

Source: Annual Reports of NIBL and various banking and financial statistics, Nepal Rastra Bank.

Nepal SBI Bank Limited

Year	Savings		14 days		1 month		3 months		6 months		1 year		2 years/
	Limit	Avg.	Limit	Avg.	Limit	Avg	Limit	Avg	Limit	Avg	Limit	Avg	Limit
2002	5.25	5.25	2.5	2.5	3	3	4	4	5	5	6	6	6.25
2003	5.25	5.25	2.5	2.5	3	3	4	4	5	5	6	6	6.25
2004	3.5	3.5	0	0	2.75	2.75	3.25	3.25	3.75	3.75	4	4	4.5
2005	0.5-3.25	1.875	0	0	2.75	2.75	3.25	3.25	3.75	3.75	4	4	4.5
2006	3.25	3.25	0	0	2.75	2.75	3.25	3.25	3.75	3.75	4.5	4.5	4.5
2007	3.25	3.25	0	0	2.75	2.75	3.25	3.25	3.75	3.75	4	4	4
2008	3	3	0	0	2.75	2.75	3.25	3.25	4.5	4.5	4.75	4.75	4.75

Source: Annual Reports of NSBIBL and various banking and financial statistics, Nepal Rastra Bank.

Nabil Bank Limited

Year	Savings		Special Savings		14 days		1 month		3 months		6 months		1 year	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
2002	3	3	0	0	2	2	2.75	2.75	3.25	3.25	3.75	3.75	4.5	4.
2003	2.75	2.75	0	0	2	2	2.75	2.75	3.25	3.25	3.75	3.75	4.25	4.2
2004	2.5	2.5	0	0	1.75	1.75	2.25	2.25	2.75	2.75	3	3	3.5	3.
2005	2-3	2.5	0	0	2.5	2.5	3	3	3.25	3.25	3.5	3.5	4	4
2006	2	2	3-4	3.5	2.5	2.5	3	3	3.25	3.25	3.5	3.5	4	4
2007	2	2	3-4	3.5	1.75	1.75	2	2	2.75	2.75	3	3	3.5	3.
2008	2	2	3-4	3.5	3	3	3.5	3.5	6.75	6.75	6.75	6.75	5	5

Source: Annual Reports of Nabil Bank Limited and various banking and financial statistics, Nepal Rastra Bank.

Standard Chartered Bank Nepal Limited

Year	Savings		14 days		1 month		2 months		3 months		6 months		1 year	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
2002	2.5	2.5	1.5-2.5	2	2-3	2.5	0	0	2-3	2.5	2.5-3.5	3	3.5-4.5	4
2003	2.5	2.5	1.5-2.5	2	2-3	2.5	0	0	2-3	2.5	2.5-3.5	3	3-4	3.
2004	2	2	1	1	0	0	0	0	1.5	1.5	0	0	2.25	2.2
2005	1.75	1.75	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.75	1.75	2.25	2.2
2006	2	2	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.75	1.75	2.25	2.2
2007	2	2	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.75	1.75	2.25	2.2
2008	2	2	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.75	1.75	2.5	2.

Source: Annual Reports of SCBNL and various banking and financial statistics, Nepal Rastra Bank.

APPENDIX-7

Interest Rate Structure of Lending (Sample Commercial Banks)
Everest Bank Limited

S.No	Sectors	2002		2003		2004		2005		Limit
		Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	
1	Overdraft	11.25-13.5	12.38	10.25-12.5	11.38	10.25-12.5	11.38	9-11.5	10.25	8-11
2	Export credit	9.5-10.5	10	9-12	10.5	9-10	9.5	7.5-8.5	8	7-8
3	Import L/C	9.5-11.75	10.63	9-11.75	10.38	9-11.75	10.38	7.5-10	8.75	6.75-10
4	Against FDR	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.25-2
5	Against GON Bond	7.5-8	7.75	7.5-8	7.75	7.5-8	7.75	5.5-6.5	6	5-6
6	Against BG/CG	10-11	10.5	9.5-10.5	10	9.5-10.5	10	7.5-8.5	8	7.5-8
7	Industrial loan	9.5-13.5	11.5	9-13	11	9-13	11	8.5-12	10.25	8-11
8	Commercial Loan	9.5-13.5	11.5	9-12.5	10.75	9-12.5	10.75	8.5-11.5	10	8-11
9	Priority sector	12.5-13.5	13	12-13	12.5	12-13	12.5	11-12	11.5	10
10	Poorer sector	11	11	10-11	10.5	11.0-13.5	10.5	10-11	10.5	4.5-11
11	Term Loan	12.5-13.5	13	11-13.5	12.25	11-13.5	12.25	10-12	11	8-11
12	Working capital	11.25-13.5	12.38	9-12.5	10.75	9-12.5	10.75	7.5-10.5	9	8-11
13	Hire purchase	12.5-13.5	13	11.5-13	12.25	11.5-13	12.25	10.5-12	11.25	6-7
14	Others							4.0-12.0	8	4.5-11
	Average Rate		10.6		10.14		10.07		8.86	

Source: Annual Reports of EBL and various banking and financial statistics, Nepal Rastra Bank.

Nepal Investment Bank Limited

Sectors	2002		2003		2004		2005		2006		2007	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
Overdraft	12.5-13.5	13	12.5-13.5	13	12.5-13.5	13	9.75-12	10.88	9.75-12	10.88	9.75-12	10.88
Export credit	11-12	11.5	11-12	11.5	11-12	11.5	8.25-10.5	9.38	8.25-10.5	9.38	8.25-10.5	9.38
Import L/C	10.5-13.5	12	10.5-13.5	12	10.5-13.5	12						
Against FDR	2	2	2	2	2	2	7-8	7.5	7-8	7.5	7-8	7.5
Against GON Bond	9	9	9	9	9	9	7	7	7	7	7	7
Against BG/CG	11	11	11	11	11	11	8	8	8	8	8	8
Industrial loan	12.5-13.5	13	12.5-13.5	13	12.5-13.5	13						
Commercial Loan	9-16	12.5	9-16	12.5	9-16	12.5						
Priority sector	14.5	14.5	14.5	14.5	14.5	14.5	4-12	8	4-12	8	4-12	8
Poorer sector	12	12	12	12	12	12	4-9	6.5	4-9	6.5	4-9	6.5
Term loan							11-12	11.5	11-12	11.5	11-12	11.5
Working capital	12.5-13.5	13	12.5-13.5	13	12.5-13.5	13	10-12	11	10-12	11	10-12	11
Hire purchase							9-12	10	9-12	10	9-12	10
Others	10-16	13	10-16	13	10-16	13	6.5-13	9.75	6.5-13	9.75	6.5-13	9.75

Age Rate		11.38		11.38		11.38		9.05		9.05		9.05

Source: Annual Reports of NIBL and various banking and financial statistics, Nepal Rastra Bank.

Nepal SBI Bank Limited

Sectors	2002		2003		2004		2005		2006		2007	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
Draft	11.25-14	12.63	11-13.5	12.25	10-12.5	11.25	10-12.5	11.25	10-12.5	11.25	8.5-11	9.75
Short credit	8.5-11	9.75	8.5-11	9.75	8-10.5	9.25	8-10.5	9.25	8-10.5	9.25	6.5-9	7.75
Trade L/C	9.0-13.5	11.25	9.0-13	11								
Fixed FDR	1.0-3.0	2	1.0-2.0	1.5	1.0-2.0	1.5	1.0-2.0	1.5	1.0-2.0	1.5	1.0-2.0	1.5
Fixed GON Bond	7.0-9.0	8.25	7.0-9.0	8.25	6.0-7.0	6.75	6.5-7	6.75	6.5-7	6.75	6.5-7	6.75
Fixed BG/CG	9.0-9.5	9.25	9.0-9.5	9.25	8.5-9.5	9	8.5-9.5	9	8.5-9.5	9	7.5-9.5	8.5
Fixed other guarantee	2.0-3.0	2.5	2.0-3.0	2.5								
Commercial loan	8.5-14	11.25	13-14	13.5								
Commercial Loan	8.5-14	11.25	8.5-13.5	11	8.5-13.5	11						
Industry sector	12-12.5	12.25	12-12.5	12.25	11.5-12	11.75	11.5-12	11.75	11.5-12	11.75	9.5-11	10.25
Service sector	7.0-9.0	8	7.0-9.0	8	7.0-9.0	8	7.0-9.0	8	7.0-9.0	8	7.0-9.0	8
Loan	11.5-14	12.75	11.5-14	12.75	11.0-12.5	11.75	11-12.5	11.75	11-12.5	11.75	8.5-11	9.75
Investing capital												
Share purchase	12-13.5	12.75	11-12.75	11.75	9.5-10.5	10	9.5-10.5	10	9.5-10.5	10	8.5-9.5	9
Dividends	8.0-14.0	11	8.0-13.5	10.75	7.0-12.5	9.75	7.0-12.5	9.75	7.0-12.5	9.75	6.25-11	8.625
Age Rate		9.63		9.61		9.09		8.9		8.9		8

Source: Annual Reports of NSBIBL and various banking and financial statistics, Nepal Rastra Bank.

Nabil Bank Limited

Sectors	2002	2003	2004	2005	2006	2007
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	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
inst other guarantee	10.5	10.5	10	10	10	10	10	10	10	10	8.5	8.5
draft	12.5	12.5										
ort credit	9.25-11.25	10.25	4-11	7.5	4.0-11.0	7.5	4.0-11.0	7.5	9.0-11.0	10	7-10.5	8.75
ort L/C	9.5-11.5	10.5	8.5-11	9.75	8.5-11	9.75	8.5-11	9.75	8.5-11	9.75	7-10.5	8.75
inst FDR	3	3	7	7	7	7	7	7	7	7	7	7
inst GON Bond	7.5-8	7.75	6.5-7.5	7	6.5-7.5	7	7-7.5	7.25	7-7.5	7.25	7-7.5	7.25
inst BG/CG	9.5	9.5	9	9	9	9	9	9	9	9	7.5	7.5
urity sector	12.5-13.5	13	4-13	8.5	12.0-13.0	12.5	11-12	11.5	11-12	11.5	9.5-11	10.25
er sector	7.0-9.0	8	7-9	8	7.0-9.0	8	6.0-9.0	7.5	6.0-9.0	7.5	4.5-9	6.75
m Loan	11-13.25	12.13	11-13	12	11.0-13.0	12	11-13	12	11-13	12	9-12	10.5
rking capital	10.5-12.5	11.5	10-12	11	10.0-12.0	11	10-12	11	11-12	11	8-11.5	9.75
e purchase	12.0-13.0	12.5	10.5-12.5	11.5	10.5-12.5	11.5	7-12.5	9.75	7-12	9.5	6.5-12	9.25
ers	4.0-13.5	8.75	7-13	10	7.0-13.0	10	7.0-13.0	10	7-13	10	6.5-12	9.25
Average Rate		9.99		9.27		9.60		9.35		8.54		8.625

Source: Annual Reports of Nabil Bank Limited and various banking and financial statistics, Nepal Rastra Bank.

Standard Chartered Bank Nepal Limited

Sectors	2002		2003		2004		2005		2006		2007	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
draft	0	0	0	0	0	0	6.5	6.5	6.5	6.5	6.5	6.5
ort credit	6.5-12	9.25	6.5-12	9.25	6.5-12	9.25	6.5-12	9.25	6.5-11.5	9	6.5-11.5	9
ort L/C	9.5-11.5	10.5	9-11	10	8.5-11	9.75	8.5-11	9.75	7.5-9	8.25	7.5-9	8.25
inst FDR	2-3	2.5	2-3	2.5	2-3	2.5	2.0-3	2.5	2-3	2.5	2-3	2.5
inst GON Bond	8-9.5	8.75	8-9.5	8.75	7.5-9.5	8.5	7.5-9.5	8.5	6.5-8	7.25	6.5-8	7.25
inst BG/CG	9-13.5	11.25	9-10.5	9.75	9-10.5	9.75	9-10.5	9.75	8.5-9.5	9	8.5-9.5	9
inst other guarantee	9-10.5	9.75	11.5-13.5	12.5	11.5-13	12.25	11.5-13	12.25	10-11	10.5	10-11	10.5
ustrial loan	9.5-14	11.75	11.5-13.5	12.5	8.5-13.5	11	8.5-13.5	11	10-11.5	10.75	10-11.5	10.75
mmercial Loan	10-14.5	12.25	12-14	13	9-14	11.5	9-14	11.5	11-11.5	11.25	11-11.5	11.25
urity sector	0	0	0	0	0	0	0	0	0	0	0	0
er sector	10	10	10	10	10	10	10	10	7.5	7.5	7.5	7.50
n Loan	12.5-14.5	13.5	10-14	12	11.5-14	12.75	11.5-14	12.75	10.0-11.5	10.75	10-11.5	10.75
rking capital	12-13.5	12.75	11.5-13	12.25	11.5-13	12.25	11.5-13	12.25	9-10	9.5	9-10	9.5
urchase	11	11	9	9	9	9	9	9	7-9.5	8.25	7-9.5	8.25
ers	7.5-14.5	11	6.5-14.5	10.5	6.5-14.5	10.5	6.5-14.5	10.5	6.5-13	9.75	6.5-13	9.75
Average Rate		10.33		10.15		9.92		9.68		8.63		8.63

Source: *Annual Reports of SCBNL and various banking and financial statistics, Nepal Rastra Bank*

APPENDIX-8

Interest Rate Structure of Deposit (Sample Development Bank)

Nepal Development Bank Limited

Year	Saving A/C		Corporate FDR		US\$ A/C		3 months		6 months		9 months		1 year		2 years/above		Av
	Limit	Avg.	Limit	Avg	Limit	Avg.	Limit	Avg	Limit	Avg	Limit	Avg	Limit	Avg	Limit	Avg	
2002	6	6					5	5	5.5	5.5	5.75	5.75	6.25	6.25	6.75	6.75	5
2003	5.5	5.5					4.5	4.5	5	5	5.25	5.25	5.75	5.75	6.25	6.25	5
2004	5	5					4.5	4.5	4.75	4.75	5	5	5.25	5.25	5.5	5.5	
2005	5	5					4.5	4.5	4.75	4.75	5	5	5.25	5.25	5.5	5.5	
2006	5	5					4.5	4.5	4.75	4.75	5	5	5.25	5.25	5.5	5.5	
2007	5	5					4.5	4.5	4.75	4.75	5	5	5.25	5.25	5.5	5.5	
2008	5	5	2.5	2.5	3	3	5	5	5.25	5.25			5.5	5.5	5.75	5.75	4

Source: Annual Reports of NDBL and various banking and financial statistics, Nepal Rastra Bank.

APPENDIX-9

**Interest Rate Structure of Lending (Sample Development Bank)
Nepal Development Bank Limited:**

Sectors	2002		2003		2004		2005		2006		2007	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
Financing/Term loans	12.5-13.5	13	12.5-13.5	13	12.5-13.5	13	11.5-13	12.5	11.5-13	12.5	11.5-13	12.5
Capital Loan	13-14	13.5	13-14	13.5	13-14	13.5	12.5-13.5	13	12.5-13.5	13	12.5-13.5	13
	12-13	12.5	12-13	12.5	12-13	12.5	11-12.5	11.75	11-12.5	11.75	11-12.5	11.75
	12.5-13.5	13	12.5-13.5	13	12.5-13.5	13	12-13	12.5	12-13	12.5	12-13	12.5
Project Financing	12	12	12	12	12	12	11.5	11.5	11.5	11.5	11.5	11.5
Comomers	11.5	11.5	0	0	0	0	0	0	0	0	0	0
	11-12	11.5	11-12	11.5	11-12	11.5	10-11	10.5	10-11	10.5	10-11	10.5
Loan	12.5	12.5	12.5	12.5	12.5	12.5	12	12	12	12	12	12
Equity shares	13	13	13	13	13	13	12	12	12	12	12	12
Finance	12.5-14	13.25	12.5-14	13.25	12.5-14	13.25	12-13.5	12.75	12-13.5	12.75	12-13.5	12.75
	15-16	15.5	15-16	15.5	15-16	15.5	14-15	14.5	14-15	14.5	14-15	14.5
Case Loan	12.5-14	13.25	12.5-14	13.25	12.5-14	13.25	12-13	12.5	12-13	12.5	12-13	12.5
Govt. Bonds	9	9	9	9	9	9	8	8	8	8	8	8
Bank Guarantee												
Bank Guarantee.	10	10	10	10	10	10	9.5	9.5	9.5	9.5	9.5	9.5
Guarantee	11	11	11	11	11	11	10.5	10.5	10.5	10.5	10.5	10.5
Fixed deposit	2	2	2	2	2	2	2	2	2	2	2	2
	0	0	0	0	0	0	10-13	12	10-13	12	10-13	12
Short term loan	0	0	0	0	0	0	10-12	11	10-12	11	10-12	11
Rate		11.66		11.67		11.67		11.07		11.07		11.07

Source: Annual Reports of NDBL and various banking and financial statistics, Nepal Rastra Bank.

2002	7.5	8	10-10.38	10.19	10.5-11.52	11.01	11-12.83	11.92	11.5-14.35	12.93	12-16.12	14.06	7	10.3
2003	6.5	7	9-9.31	9.16	9.5-10.33	9.92	10-11.5	10.75	10.5-12.84	11.67	11-14.41	12.71	7	9.34
2004	5.25	5.5	8-8.24	8.12	8.25-8.87	8.56	8.5-9.57	9.04	8.75-10.34	9.55	9-11.21	10.11	6.5	7.83
2005	5	5.25	6.5-6.66	6.58	6.75-7.16	6.96	7-7.71	7.36	7.25-8.32	7.79	7.5-9	8.25	6	6.65
2006	5	5.25	6.5-6.66	6.58	6.75-7.16	6.96	7-7.71	7.36	7.25-8.32	7.79	7.5-9.0	8.25	6	6.65
2007	6	6.5	7-7.19	7.1	7.25-7.73	7.5							5.88	6.6
2008	6.5	7	8.25-8.5	8.4	8.5-8.75	8.625							6.5	7.41

Source: Annual Reports of Pre. FCO

APPENDIX-11

Interest Rate Structure of Lending (Sample Finance Companies)

Peoples Finance Company Limited

Year	Home Loan		Loan against Share & Bond	Commercial	Industrial	Foreign Employment	Education	Against PDR	Health	Tourism	Agriculture
	Limit	Avg.									
2005	12	12	14	15	15			2			
2005.5	12.5	12.5	14	15.5	15.5	15.5	15.5	2			
2005.5	15	15	14	15.5	15.5	15	15	3	14.5	15	14
2005	15	15	14	14.5	14.5	15	15	2.5	14.5	15	14
2004	14	14	12.5	13.5	13.5	14	14	2	13.5	14	13
2004	12.5-14	13.25	11.5	12.5	13	13	13.5	2	13.5	14	13
2004	13.5-14	13.75	12.5	13.5	13.5	13.5	13.5	2	13.5	13.5	13

Source: Annual Reports of PFCO

Kathmandu Finance Limited

(Rate in percentage)

Year	Hire Purchase		Home Loan	Loan against share		Commercial	Agriculture	Against PDR	Other Loan	Average Rate
	Limit	Avg.		Limit	Avg.					
2002	16-17	16.5	17	14-15	14.5		17	2	17	14
2003	15-16	15.5	16	13-14	13.5		16	2	16	13.17
2004	14-15	14.5	15	13-14	13.5		15	2	15	12.5
2005	12	12	14	12	12		13	2	14	11.17
2006	12	12	13	10.5	10.5		13	2	14	10.75
2007	12	12	13	11	11		13	2	14	10.83
2008	14	14	14	12.5	12.5	12	13	2	15	11.78

Source: Annual Reports of KAFI

National Finance Company Limited

Sectors	2002		2003		2004		2005		2006		2007	
	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.
Hire Purchase	14-17	15.5	13.75-16.25	15	13.75-15.75	14.75	10-13.5	11.75	10-13.5	11.75	10-13	11.17
Home Loan	17	17	16.25	16.25	16	16	16	16	11-16	13.5	10-16	13.17
Commercial	15-17	16	14.5-16.5	15.5	14-16	15	12-15.75	13.88	12-15.75	13.88	10-15.75	12.83
Industrial	14.75-15.5	15.25	14.5-15.5	15	14.25-15.25	14.75	12-14.5	13.25	12-14.5	13.25	10-13.5	11.78
Export	14.5-15.5	15	14.25-15.25	14.75	13.75-14.75	14.25	11-14	12.5	11-14	12.5	10-13	11.17
Import & Export	13.5-14.5	14	13-13.75	13.38	12.5-13.5	13	12-13	12.5	12-13	12.5		
Services	13.25-14.25	13.75	12.5-13.5	13	12.0-13.0	12.5	10-11	10.5	10-11	10.5	10-13	11.17
Against PDR	3	3	3	3	2	2	2	2	2	2	2	2
Against Share & Bond	13.5	13.5	12.5	12.5	12.5	12.5	11	11	11	11	9-11	10.17
Against GON Bond	8.5-9	8.75	7.5-8	7.75	7.5	7.5	7.5	7.5	7.5	7.5	7.5-10	8.75
Average Rate		13.18		12.23		12.23		11.09		10.84		10.33

Source: Annual Reports of NFCO

Premier Finance Company Limited

Sectors	2002	2003	2004	2005	2006	2007
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(Rate

	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	Limit	Avg.	L
aire Purchase	15-17	16	15-17	16	12.5-15.5	14	12.0-15	13.5	12.0-15	13.5	10	10	12
ommercial	14-17	15.5	15-17	16	13-15	14	12.0-15	13.5	12.0-15	13.5	10	10	12
onstruction loan	15-17	16	14-17	15.5	13-15	14	12.0-15	13.5	12.0-15	13.5	10	10	12
ustrial	15-17	16	14.5-17	15.75	13-15	14	12.0-15	13.5	12.0-15	13.5	10	10	12
an Against Share	15-17	16	17-20	18.5	13-15	14	12.0-15	13.5	12.0-15	13.5	10	10	12
gainst FDR	3	3	3	3	3	3	2	2	2	2			
ducation											10	10	12
verdraft													12
Average Rate		13.75		14.13		12.17		11.58		11.58		10	

Source: Annual Reports of Pre. FCO

APPENDIX-12

National Urban Consumer Price Index
Base Year 1995/96 = 100
CPI Inflation Rate

(Annual Average)

Fiscal Year	Food & Beverage		Non-food & services		Overall Index	
	Index	% change	Index	% change	Index	% change
1996/97	108.2	8.2	108	8	108.1	8.1
1997/98	116.6	7.8	117.8	9.1	117.1	8.3
1998/99	135.5	16.2	124.6	5.8	130.4	11.4
1999/00	136.1	0.4	133.4	7.1	134.9	3.5
2000/01	133	-2.3	144.2	8.1	138.1	2.4
2001/02	137.9	3.7	147.2	2.1	142.1	2.9
2002/03	144	4.4	154.6	5	148.9	4.8
2003/04	148.8	3.3	161.8	4.7	154.8	4
2004/05	154.7	3.9	170.1	5.1	161.8	4.5
2005/06	170.9	10.5	189.5	11.4	174.7	8
2006/07	180.8	5.8	195.4	3.1	187.6	7.38
2007/08	200.4	10.9	212.9	9	208.3	11.03

Source:

- Quarterly Economic Bulletin (mid-July, 2008), NRB, Baluwatar, Kathmandu.
- Monetary Policy (2008), NRB, Baluwatar, Kathmandu.
- NRB Research Department.

APPENDIX-13

Weighted Average Treasury Bills Rate (91-days)

F.Y.	Mid-Month												(Annualized)
	Aug.	Sept	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Annual Average
1991/92	8.43	8.78	8.84	8.7	8.82	8.93	9.33	9.56	9.6	9.64	9.59	9.64	9.24
1992/93	10.17	10.45	12.17	11.68	12.03	12.36	12.57	12.43	11.3	9.56	11.28	11.92	11.34
1993/94	8.49	5.94	7.24	8.74	6.05	3.93	7.57	7.56	6.38	4.93	5.31	6.01	6.5
1994/95	6.36	6.26	6.54	7.02	6.91	6.99	7.38	7.97	8.12	7.94	7.89	8.33	7.35
1995/96	8.34	8.61	8.78	9.14	9.69	11.83	12.68	12.21	10.93	12.7	12.88	12.66	10.93
1996/97	12.18	11.75	11.43	11.63	11.51	11.47	11.62	10.99	9.77	8.51	6.03	5.62	10.22
1997/98	4.87	3.36	3.81	3.36	2.63	2.71	3.9	4	4.17	3.44	3.24	2.87	3.52
1998/99	1.61	0.9	0.85	2.88	3.24	3.29	1.61	1.21	2.16	3.09	3.35	3.32	2.33
1999/00	3.4	2.9	3.41	4.09	3.99	4.44	5.16	5.6	5.46	5.73	5.46	5.36	4.66
2000/01	5.43	5.22	4.87	5.24	5.3	5.26	5.17	4.55	3.87	4.67	4.94	4.95	4.96
2001/02	4.78	3.78	4.66	4.96	4.95	4.85	5.19	5.39	5.05	4.86	4.52	3.78	4.71
2002/03	3.42	3.49	3.6	4.03	3.75	4.1	4.01	3.91	4.06	2.91	1.67	2.98	3.48
2003/04	4.03	3.66	3.7	3.68	3.85	3.95	3.94	3.81	1.7	0.7	0.82	1.47	2.93
2004/05	0.62	0.63	1.34	1.97	2.4	2.38	2.38	2.94	3.11	3.7	3.82	3.94	2.46
2005/06	2.26	3.38	3.1	2.69	2.2	2.46	2.2	2.65	2.89	3.63	3.31	3.25	2.84
2006/07	2.99	2.78	2.54	2.11	1.98	2.67	2.6	2.36	1.85	2.43	2.17	2.77	2.42
2007/08	4.25	2.14	2.35	3.03	3.59	3.86	5.79	5.54	4.07				3.85

Source: Monetary Policy (April, 2008), NRB, Baluwatar, Kathmandu.