INTEREST RATE DETERMINATION AND ITS IMPACT ON COMMERCIAL BANK INVESTMENT DECISION

A THESIS

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VIVA - VOCE SHEET

We have conducted the viva-voce examination of the thesis presented by
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Entitled:
And found the thesis to be the original work of the student and written according to the prescribed format.
We recommend the thesis to be accepted as partial fulfillment for the degree of
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DECLARATION

I hereby declare that the work reported in this thesis entitled "Interest Rate Determination and Its Impact on Commercial Bank Investment Decision" submitted to office of the Dean, Faculty of Management, Tribhuwan University is my original work done in the form of partial fulfillment of the requirement of Masters of Business Studies (M.B.S) under the guidance and supervision of Prof. Shankar Thapa , Dean of MBS Department, St.Xaviers College.

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RoopLata Sethia

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ABBREVIATION

ATM	:	Any Time Money
AMT	:	Amount
BOK	:	Bank of Kathmandu
d.f.	:	Degree of Freedom
DEP	:	Deposit
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
HBL	:	Himalayan Bank Ltd
$	:	American Dollar
Int	:	Interest
LTD	:	Limited
NB	:	Nepal Bank Ltd.
NABIL	:	Nepal Arab Bank Ltd
NRB	:	Nepal Rastra Bank
NIBL	:	Nepal Investment Bank Ltd
Rs	:	Nepalese Rupees
RF	:	Risk Free
SCBL	:	Standard Chartered Bank Ltd
TU	:	Tribhuwan University

CHAPTER - I

INTRODUCTION

1.1 Background of Study

Nepal lying on the laps of Himalayas, is a small, naturally beautiful, democratic and jurisprudence country. It's developing country and is on the path of development. Full phase of development is needed in the areas of education, health, social development, industries, employment, infrastructure, utilization of resources etc. The main development sectors are industries and rural development. There is needed economic support.

In the nation, economy plays the vital role for development. Nepal has lot of raw, natural and cultural resources but they are not utilized due to the technical and financial problem. The economic sources of Nepal are agriculture, import, export, and tourism and remittance generation. The main occupation of Nepalese people is agriculture but this contribution of the sectors to gross domestic product is only 40%. Another sector of GDP is export, import, service and remittance collection. Nepalese per capita income is average US Dollar 380 per person per annum, which is very low in comparison to other countries. More than 31% Nepalese are under poverty line and more peoples are living in hand to mouth problem. Only few of the people are highly richest amount hundreds of thousands.

Now, Nepal is depending on foreign aid and loan. Near about 50% budget is dependable upon foreign aid and loan. The reason behind this is insufficient fund to develop in current phase. Financial position is a most important factor for a nation. A financial feedback plays the vital role to utilize the resources, develop the technological improvement and produce goods and services in competitive situation. So, capital is based upon organization. It helps financial markets to generate the required funds on productive and business sector.

Banks and other financial sector play an important role while collecting funds from unproductive sector with the objective of investment in productive sector.

Nepal Rastra Bank (NRB) is the central bank of Nepal. It is the controlling and monitoring its subordinates while developing economic sector. Developing banks, commercial banks, agricultural development banks and other financial companies are co-operating with each other on support of financial growth of the Nepal's economy.

1.1.1 Commercial Banks

Every commercial bank are performing it's all kind of banking transactions by accepting deposits , advancing loans , credit creation and agency function, They provide short-term loan and long-term loan for trade and industrial promotion. They are also operating off balance sheet function such as issuing guarantee, bonds, letter of credit etc.

As per Bank and financial institutions Institution Act.2063 B.S., "A commercial bank means the bank which deals in exchanging currency accepting deposit, giving loans and doing commercial transaction."

Keeping above act in mind, we can say that the commercial banks play an important role on growth of Nepalese economy. Nepal bank ltd. Is the first commercial bank of Nepal, established in 1937A.D in private sector participation. The government owned Nepal Banijya Bank is also established in 1966 A.D. and this bank is spread over most of the rural and urban areas of Nepal.

In 1980's government introduced financial sector reforms, which facilitated the established of joint venture banks. Government of Nepal (GoN) has initiated the established of joint venture banks especially foreign banks were implemented to bring the modern technological management as well as foreign capital in banking industry. The first joint venture banks are Nepal Arab Bank Ltd. and other famous banks are Standard Chartered Bank, Himalayan Bank and Everest Bank, NB Bank etc.

The main function of commercial banks is accepting the deposit and lending it in the productive industries and service sector .They are implementing loan and services to draw the interest of the consumers. The function of commercial banks is to collect funds for lending loan, open letter of credit, bank guarantee, payment of bills, collects the remittance to generate the interest and commission.

1.1.2. Function of Commercial Bank

The function of commercial banks is given below:

1. To accept the deposit

- Current a/c --- No interest rate provided
- Saving a/c --- Interest rate fluctuates
- Fixed a/c --- Fixed interest rate

2. To provide the loans

- The loan provides to party and people for short-term and long-term. It provides the loan by accepting the security of debtors.

3. Agency function

As per commercial banks, act as an agency

- Banks make the payment of customer cheque, draft and bill of exchange presented by the customer.
- A bank on the request of its customer, transfers money from one place to another place by change transfer.
- Buying and selling of share and government security

4. General Utility Function

- Foreign currency transaction and exchange
- Issuing the travelling cheque
- Loan provided
- Economic and professional advices
- Collect information from the custom

5. Overseas Trading services

- Help to export and import in factory organization.

6. Information and other services

- Regular Bulletin, special reports published within is very useful to customs.

1.1.3 Performance of Commercial Banks

NRB properly monitors and evaluates the performance of commercial banks. There are 28 commercial banks established and operating in country.

The total assets of commercial banks increased to Rs 888878.8 .million there is loan and advance part is 611762.8 of total assets. Deposits liabilities held amount two third of total liabilities. Deposit reached to 528621 Million, borrowing accounted only 5.2% of total liabilities in mid July 2009. It expanded with an annual growth rate is 22.9%.over the past five years .Loan and advances reached 293718.80 million in mid July 2009 major portion of the loan portfolio of the banking system was distributed to productive sector 35.95% wholesale and retail business sector 19.83%, agriculture sector was able to tap only 3.58% of total credit in this period. There are other service industries 9.95% construction 8.57% and transportation , communication and public services 7.61%.The banks are reached in priority sector credit reached 6.7% deprived sector credit increased in by 3.97% of total credit .

The commercial banks are free to determine to calculate the interest rate. So, banks are using own strategy and competition through the interest rate. They are able to attract the customers day to day. They are performing rapidly growth in this sector. But some had bad loans provide in industries going to bearing the risk in the Nepalese situation. The commercial banks are strictly monitoring and controlling by NRB.

Table No 1.1

List of Commercial Banks in Nepal

S. No	Commercial Bank's Name	Head Office	Operation Date
1	Nepal Bank Limited	Dharmapath, Kathmandu	11/15/37
2	Rastriya Banijya Bank	Singhdarbar Plaza,Kathmandu	01/23/66
3	NABIL Bank Limited	Kantipath, Kathmandu	07/16/84
4	Nepal Investment Bank Limited	Durbar Marg, Kathmandu	02/27/86
5	Standard Chartered Bank Nepal Limited	Naya Baneshwor, Kathmandu	01/30/87
6	Himalayan Bank Limited	Thamel, Kathmandu	01/18/93
7	Nepal SBI Bank Limited	Hattisar, Kathmandu	07/07/93
8	Nepal Bangladesh Bank limited	Naya Baneshwor, Kathmandu	06/05/93
9	Everest Bank Limited	Lazimpat, Kathmandu	10/18/94
10	Bank of Kathmandu Limited	Kamaladi, Kathmandu	03/12/95
11	Nepal Credit and Commerce Bank Limited	Siddharthanagar, Rupandehi	10/14/96
12	Lumbini Bank Limited	Narayangadh, Chitwan	07/17/98
13	Nepal Industrial and Commercial Bank Limited	Biratnagar, Morang	07/21/98
14	Machhapuchhre Bank Limited	Prithvichowk, Pokhara	10/03/00

15	Kumari Bank Limited	Putali Sadak,Kathmandu	04/03/01
16	Laxmi Bank Limited	Adarshanagar, Birgunj	04/03/02
17	Siddhartha Bank Limited	Kamaladi, Kathmandu	12/24/02
18	Agricultural Development Bank Limited	Ramshahapath, Kathmandu	03/16/06
19	Global Bank Limited	Birgunj, Parsa	01/02/07
20	Citizens Bank International Limited	Kamaladi, Kathmandu	06/21/07
21	Prime Commercial Bank Limited	Newroad, Kathmandu	09/24/07
22	Sunrise Bank Limited	Gairidhara Crossing, Kathmandu	10/12/07
23	Bank of Asia Nepal Limited	Tripureshwor, Kathmandu	10/12/07
24	Development Credit Bank Limited	Kamaladi, Kathmandu	01/23/01
25	NMB Bank Limited	Babarmahal,Kathmandu	11/26/96
26	Kist Bank Limited	Anam Nagar, Kathmandu	02/21/03
27	Janta Bank Limited	Naya Baneshwor, Kathmandu	2010
28	Megha Bank Limited	Jamal ,Kathmandu	2010

1.1.2. Brief introduction of sample Commercial Banks

1. Nepal SBI Bank Limited

Nepal SBI Bank Limited (NSBL) is the 1st Nepal – Indo joint venture bank in Nepal .It is sponsored by three Institutional promoters, namely, State Bank of India, Karmacharya Sanchay Kosh (Employees Provident Fund) and Agricultural Development bank of Nepal. NSBL became operational on July 1993.

The bank was registered on 2050/01/16 (28.04.1993) in the department of Industry ,HMG/N under the company Act 2021 and commercial Bank Act 2031.The equity composition of the bank is SBI 50% ,employment provident fund 15% , ADB 5% , and general public 30%.

2. Bank of Kathmandu Ltd. (BOK)

It was established in 1993 in collaboration with SIAM Commercial bank, Thailand under the company act. The major objective of the bank is to operate commercial banking activities throughout the country with the approval of NRB. The SIAM commercial bank diluted its holdings to the Nepalese citizens in 1998.Hence, Nepalese public hold 97.72% of the equity shares of BOK and remaining share are held by financial institutions (0.9%) and organized institutions (1.38%).BOK is one of the modern banks in Nepal. This bank accepts the deposit and provides the loan in various sectors. The current interest rate of bank in deposit is 10% in average and lending rate is 13 % in average.

3. Nabil Bank Limited (Nepal Arab Bank Limited)

NABIL bank limited (Nepal Arab Bank Limited was incorporated in the year 1984 A.D.(2041 BS). It commenced its operation on July 1984 as the first joint venture bank in exchange in the year 1986A.D. (081/09/042 B.S).Emirate Bank International Ltd., Dubai was the first joint venture partner of NABIL .Warranty, NB(International) Ltd., Ireland is the foreign partner. NABIL Bank Limited had the official name Nepal Arab Bank Ltd. Till 31st December 2001.The equity composition of Nepal Arab Bank Limited is NB (International) Ltd. Ireland 50%, Nepal Industrial Development Corporation (NIDC 10%, Rastriya Beena Sansthan 9.67%, Nepal Stock Exchange Limited 0.33% and General Public 30%.

NABIL Bank is the pioneer in introducing many innovative banking services and marketing services in banking sector of Nepal. It operates its activities through 15 branches and 2 counters. It is the only bank having presence in the Tribhuwan International Airport. Some of the services provided by NABIL Bank Limited are accounts deposits, documentary credit, guarantees, collection, credit cards, tele banking safe deposit lockers ,fund transfer etc.

4. Standard Chartered Bank Nepal Limited

Standard Chartered Bank Nepal Limited, formerly known as Nepal Grind Lays Bank Limited was in corporate in the year 1985 and has been in operation since 1987. On 31st July 2000, Standard Chartered Bank concluded the acquisition of ANZ grind lays Bank from the Australia and New Zealand

Banking Group Limited with this acquisition, 50% shares of Nepal Grindlays Bank Ltd.(NGBL) previously owned by ANZ grindlays are now owned by Standard Chartered Grindlays Bank Ltd..Leading to the name change of the Bank to Standard Chartered Bank Nepal Limited with effective from July 16, 2001. The equity composition of Standard Chartered Bank Limited 33%, General Public 17%.

The Bank Focuses mainly on corporate ,consumer and commercial banking, providing services for international firms, as well as embassies , aid agencies, airlines, hotels and government corporations.

5. Himalayan Bank Limited (HBL)

Himalayan Bank Limited was established in 1992 by the distinguished business personalities of Nepal in partnership with Habib Limited, on of the largest commercial bank of Pakistan. Bank operations were commenced from January 1993.It is the first commercial bank of Nepal with maximum shareholding by Nepalese private sector. Besides commercial activities, the bank also offers industrial and merchant banking facilities. The bank at present has the five branches in Kathmandu valley and seven branches outside the valley. The bank is also operating a counter in the premise of the Royal Palace. The bank has a very aggressive plan of establishing more branches in different part of the country in the near future. The bank‘s policy is to extend quality and personalized services to its customers as promptly as possible. The bank, as far as possible, offers tailor made facilities to its clients, based on the unique needs and requirements to extend more effective services to its customers. Himalayan Bank has been adopting of new technology.HBL has listed on Nepal Stock Exchange in July 5, 1993.The share participation of the bank is public and 20% Habib Bank of Pakistan.

6. Nepal Investment Bank Ltd.

Nepal Investment Bank Ltd. (Nepal Indosuez Bank Ltd.) was established in 21st January 1986 as a third joint venture bank under the Company Act 1964.

Initially the bank is managed by “Barque Indosuez” Paris in accordance with Joint venture and technical services. Fifty percent of the share of Nepal Indosuez Bank Ltd. Held by credit Agricole Indosuez was sold to the Nepalese promoters on April 25, 2002 as per the transaction record of Nepal Stock Exchange. After this disinvestment of share by Nepalese owners, the name of the company was

changed to Nepal Investment Bank Ltd. by its 15th AGM held on Mayy 31st, 2002.Out of total equity shares of Nepal Investment Bank Ltd.., 50% shares are held by a group of companies, 15% by commercial banks, another 15% by financial Institutions and remaining 20% by general public. Authorized capital of NIBL is Rs.270 million and issued and paid up capital are Rs.1699845 respectively.

1.1.5 Interest Rate

The minimum required rate of return and minimum expenses for the uses of debt capital is the interest expenses. So, the interest is called cost of collected debt capital. Interest is the payment for the use of money. People must pay interest in borrowed money. Banks and financial institutions pay interest for borrowed money and they also charge interest to lender for investment amount .Interest bearing the cost of used money. Interest rate is a medium of collecting and lending money. It is the cost of holding period of a specific time. It is also called compensation for the use of borrowed funds.

1.1.6 Determination of Interest Rate

Interest rate plays a vital role in banking sector to collect the funds and investment. Depositor's saving amount for future security risk and gain good interest rate. Banker needs margin in mobilizing funds. The interest rate determined by commercial banks and financial institutions freely. The most important factors in determination of interest rate are demand and supply forces of fund. The other factors are also important in the determination of interest rate such as inflation rate, risk, time period of investment money.

National and International impacts and other tools and techniques are important in financial market.

In Nepalese contest the commercial banks and financial institution are free in determining of interest rate. Now a day, the banks are competing among each other in interest rate for attracting the valued customers. They are using the various strategies in determination of interest rate.

1.2 Statement of the Problem

The interest rate plays important role for the banking development. The favorable investment climate makes appropriate interest rate. We have seeing the commercial banks have to shoulder more risk and uncertainty in the investment. The banks gain some profits now as well as they have lot of risk on bad debts. They are facing the problems on refund of investment like government owned bank more but in another parts Joint venture and private bank were making good profit in competition each other. They are generating the new ideas and providing the various facilities to accuracy the bank customer.

The interest is a price of money. The interest rate is different in depositor and lender. That differences margin is the gain of bank. The interest rate charged and offered of financial institutions and commercial banks was regulated by central bank until before few years, But now these institutions are free to fix their interest rate.

Interest rate is the most important factor in the economy and organization. Most of the organizations are not calculator the true or effective interest rate. They are motivated in gaining profit. It is different on as per banks. They have own policy on determination. So this researcher has influenced to analyze that what factors affect interest rate and what are the methods used in the interest rate calculation. So this issue is important to study to solve some notify problems.

1. Interest rate is important factor in economy?

2. It is affected by various factors?

3. Is the market interest rate is affected by inflation rate and other factors?

4. Which method used in the commercial bank to calculate interest rate?

5. What are the major qualitative factors to determine the interest rate in Nepalese Commercial Banks?

6. What is the difference in interest rate theory in practice?

So many issues are the Finding parts of the Statement of The Problem.

1.3 Focus of the Study

Interest Rate and its determination is my focus study part. I am going to analyze the factors and environments of subject. The subject is very important in banking sector. In Nepalese context most of the banks are very modern they have gain public popularity. But some government owned banks are going on risk side in the reason of bad loan distribution. But in case of interest rate all are the difference in their own strategy .We know that Nepal is geographically country has differences in economically mobilization in rural and town. There is large farness in peoples in deposit use of banking system business areas.

1.4 Objective of the study

We know that interest rate is important in financial market in collecting the funds and lending the loans, so determination of interest rate is also important function in financial market. This study try to identify the determinations of the interest rate , appropriate rate methods to determine the interest rate in banking sector and environmental factor related to interest rate.

1. To study and analyze the determinant factors and methods of interest rate and its relation with the Investment decision.

2. To identify and evaluate the trend of deposit rate, lending rate, inflation and risk free rate.

3. To identify the relationship of interest rate with deposit, lending, interest rate, inflation and risk free rates

4. To analyze the environmental factors effecting the determination of interest rate of the concerned organizations.

5. To provide suggestions and recommendations studies to banks about interest rate on the basis of study findings.

1.5 Significance of the Study

Development of banking system is a vital issue for the growth of the economy. The economic development of any country depends up on the effective mobilization of the accumulated and mobilization of funds collection and lending strategy is effected by interest rate. Interest rate is the main factor of the commercial banks. It is also important in depositor and lenders.

Present study is important in the point of view of national economy. It is determining price of money, which is called interest rate, whose effects shows on financial system, economic growth in business sector and public sector.

Nepal is suffering a high inflation rate and it is important factor in the economy. It plays role in the determination of interest rate. The interest rate is different in commercial banks. They have own strategy to determine in rate. The rate of interest is one clue for competition in financial market. The reason of fluctuation in interest, these factors are affecting in rate default risk, political crisis, uncertainty, demand and supply, computation of financial market etc. these various factors are responsible in determination of interest rate.

The subject is important in national and international financial markets, person, parties, business holder's depositors etc. It is one key of business sector. It is also important to measure on running positions of economy so many reason and objectives it is significant in study.

1.6 Limitations of the Study

This study is conducted for a partial fulfillment of Masters Degree on student sector; there is lack of sufficient financial resources to deep and large-scale study. The topic is used in various financial sectors but this study limited in commercial banks. Most of the analysis is descriptive in present study. The study is based on some Fiscal years data of commercial banks and concerted in primary data research in field.

This topic area is very large and affecting factors are more but not all the factors are attempted so only determining factors interest rate are considered. This study will be based on data collected from some public sample bank magazine, books and published reports. The primary data based on public opinion and surveys. The study is more hypothetical. So data are affected of person's perception.

1.7 Organization of the Study

The study has been organized in to five different chapters. They are as follows:

1. Introduction

This introduction chapter contains the introduction part of the study, objectives of the study, statement of the problem, significance of the study, limitation of the study etc.

2. Review of Literature

The second chapter contains the review of literature about the interest rate of different commercial banks.

3. Research Methodology

The third chapter is research methodology consisting of research methodology, research design, nature of data, procedures of data collection etc.

4. Presentation and Analysis of Data

Under this chapter the analysis and interpretation of data has been presented.

5. Summary, Conclusion and Recommendations

This is the final chapter which summarizes the main conclusion of the previous chapter and offers suggestions for the improvement.

CHAPTER II
REVIEW OF LITERATURE

2.1 Introduction

In this chapter, the researcher shall review briefly about some of the earlier published articles and studies conducted abroad on determination of interest on commercial bank of Nepal and submitted thesis to Tribhuwan University in context of Nepal on the similar topic.

The purpose of reviewing the literature is to develop some expertise in one's area, to see what new contributions can be made, and to receive some ideas for developing research design.

The review of literature helps to the study to fulfill issues. The review of literature includes the reviews of previous writing and studies relevant to the problem being explored and with the framework of theory structure.

The review of literature is the process of locating, reading and evaluating the research literature in area of the students interest.**(Wolff & Pant , p:39)**

2.2 Meaning of Interest

Common parlance interest in payment for made by a borrower to the lender for the money borrowed and it is expressed a rate percent per year. But in economics widely different views have been put forth from the time to Aristotle to the present day. Aristotle recognized only annual husbandry and stock rising as two legitimate industries whose product could be lent and interest earned on them. **(Jhingan, p:621)**

According to carver “Interest is the income which goes to the owner of capital.”

According to Mill's “Interest is the remuneration for more abstinence.”

Interest is the amount paid to the creditor in return to a debt borrowed by a debtor for a fixed period of time. As the reward of their factors of production this market is also a reward this interest is also a reward paid to the capitalist for the use of capital. **(Joshi 2058 , p:384)**

Prof. Wicksell - "Interest is payment made by the borrower of capital by virtue of its productivity as a remain for his (capitalist's) abstinence"

Prof Meyer - "Interest is the price paid for the use of lovable funds"

Prof Seliqman - "Interest is the reward for parting with liquidity"

In this way there is different definition of interest. Even then the some conclusion may be drawn from all these definitions and the conclusion is that the interest is the amount of return paid for the use of capital.

Interest is the amount paid to the creditor in return to a debt borrowed by a debtor for a fixed period of time. As the reward of other factors of production this interest is also a reward paid to the capitalist for the use of capital. The system of borrowing loan and of paying the interest is very old. The economics of different times had hated the system of interest. Even the poor people were compelled to take loans and pay interests due to various reasons. Those days the loans were taken mostly for consumption purpose .But in the modern days, there are differences in the nature of loans. These days the loans are taken mostly by the businessmen and the industrialists and these loans are used for the purpose of production. The amount of loan is received from the fund of capital. The capital fund has a productive capacity. Therefore, the interest is paid for the use of capital. Various economists have defined interest differently as stated above.

2.3 Interest Rate Levels

Funds are allocated among borrowers by interest rate ,firms with the most profitable investment opportunities are willing and able to pay the most for the capital ,so they trend to attract it away from less efficient firms or from those whose products are not in demand .Of course ,our economy is not completely free in the sense of being influenced only by market forces ,thus ,the federal government has agencies that help designated individuals or groups obtain credit favorable terms among those eligible for this kind of assistance are small businesses ,certain minorities ,and firms willing to build plants in areas with high unemployment. Still, most capital in the use economy is allocated through the price system.

2.4 The Determinants of Market Interest Rates

In general, the quoted (or nominal) interest rate on a debt security is composed of a real risk free rate on interest, plus several premiums that reflect inflation. The riskiness of the security and the security's marketability. This relationship can be expressed as follows: (**Weston & Brigham, p: 45)**

Quoted Interest rate = k = k* + IP + DRP + LP + MRP
K = the quoted, nominal, rate of interest on a given security. There are many different securities; hence many different quoted interest rates.

K* = the real risk free rate of interest
The rate of interest that would exist on default – free U.S Treasury Securities if no inflation were expected.

IP = Inflation premium
A premium for expected inflation that investors add to the real risk free rate of return.

DRP = Default risk premium

The difference between the interest rate on a U.S Treasury bond and a corporate bond of equal maturity and marketability.

LP = Liquidity, or marketability, premium
A premium added to the rate on a security if the security cannot be converted to cash on short notice and at close to the original cost.

MRP = Maturity risk premium
A premium that reflects interest rate risk; bonds with longer maturities have greater interest rate risk.

2.5 Theory of Interest rate

2.5.1 Gross Interest and pure interest

In ordinary terms, the amount, to which we call interest, is the total interest in economics. The pure interest is also included in this total interest.
Pure or Net Interest: - The net interest is the net return paid only for the use of capital.
Insurance against risk: - Interest also includes reward for risk taking. While investing capital; a capitalist has to bear some risks. He includes some amount in the net interest for this risk the amount for insurance against risk. The additional amount is called the amount for insurance against risk. The capitalist bears two types of risk.
a. Personnel risk and
b. Trade risk

Reward for inconvenience
While investing capital, a capitalist has to face two kinds of inconvenience. The first inconvenienced is that after an investment is done, he cannot be able to use capital in his need. The second inconvenience is that when he receives back the amount he has invested, the golden opportunity to invest the capital elsewhere has already been cost. The amount over the net

interest due to the possibilities of these inconveniences is the reward for inconvenience.

Payment for management expenditure

While investing capital, the capitalist should also keep the account. In order to keep the account he has to spend a separate amount. If may also be possible that the creditors should knock the debtors door many times to receive back his amount. In this way, the creditors should spent some time among for the accounts keeping, Hiring employees ,visiting the debtors repeatedly etc. for all these difficulties the creditors charge some amount over the net interest against the borrowers and expenses are called the payments for management expenditure.**(Joshi ,p:385)**

Forces determining Interest Rate

The problem with the interest rates is that although interest rates are critical to every bank, bankers simply cannot control either the level of or the trend in market rates of interest. The rate of interest on any particular loan or security is ultimately determined by the financial market place where supplies of loanable funds (credit) interact with demands of loanable funds(credit) trends to settle at the point where the quantities of loanable funds demanded and supplied are equal.**(Rose,p:120)**

- Interest rate risk is one of the bankers greatest ALM Challenges
- The interest rate is one of the sources of revenue
- When interest rate changes in the financial marketplace, the bankers find that the change affects.
- Changing interest rate also change the market value of a bank's assets and liabilities.
- Interest rate impacts both a bank's balance sheet and its statement of income and expenses.

2.5.2 Loanable Funds Theory of Interest

The Loanable Funds Theory of Interest was propounded simply to remove the drawbacks of the Classical Theory of Interest. First of all, this theory was propounded by the famous Swedish economist Johan Gustav Knut Wicksell. Later on , the other Swedish economists, like Bertil Ohlin ,Erich Lyndahl ,Gunnar Myradah ,etc. and the British economist Sir Dennis Robertson ,

improved and developed the theory very much. These economists are of the neo-classical age. So this theory is also called the Neo -classical theory of interest. This theory shows that the rate of interest is determined by the interaction of the demand for and the supply of the loanable funds. In the demand for loanable funds, the investment for the production of the capital goods and the loans for consumption purpose are also included. And in the supply of loanable funds, the disposable income, the bank money or credit etc. are included. In this way, in the context to the determination of the rate of interest, both the monetary and real factors are involved. On the other hand, this theory is also called the periodic Analysis funds on the period of time .According to this theory, the demand for and the supply of the loanable funds are influenced by different factors. **(Joshi, p: 386).**

Demand for loanable funds

The classical theory on interest has mentioned that the capital is demanded only for the investment to produce the capital goods. But the demand for the loanable funds (capital) depends on the following factors:

I) Demand for the Investment: Generally the business firm's demand for the capital is to purchase the capital goods like buildings, machines, tools etc. and to conduct the productive activities. The amount to be paid to receive such loans is called the interest. The demand for such loans depends on the marginal revenue productivity of capital or on the expected net rate of return of capital. Therefore, the loanable funds are demanded only up to the point where the marginal revenue productivity of capital and rate of interest to be paid are equal to each other. If the rate of interest is low, the demand for capital or the loanable funds is high and if the rate of interest is high, the demand for capital or the loanable funds is low. Thus, the demand for loanable funds is interest- elastic and its curve slopes downwards from left to right.

II) Demand for Consumption: The loanable funds are also demanded for the consumption purposes. Generally, the loanable funds for consumption purposes are demanded for purchasing durable goods like houses, radios, T.V. Sets, motor cars, refrigerators etc. The people demand for the loanable funds especially at the time when their current incomes and idle cash resources are insufficient to buy the durable goods they desire. Such demand for loanable funds is called

the Dissaving. If the rate of interest is low, the demand for loanable funds for the consumption of such durable goods will be high and if the rate of interest is high, the demand for loanable funds for such purposes will be low. Therefore, the demand for loanable funds for consumption purposes is also interest – elastic and its curve also slopes downwards from left to right.

III) Demand for Hoarding: People are naturally liquidity – prefers. Therefore, they desire to keep some portions of their incomes in liquid -money or cash-money or idle-money. They do this by spending some percentages of their disposable income. The amount saved in this way is called the Hoarded money or hoarding. This hoarding may be used to buy shares, securities, capital goods and to provide loans to somebody else. Or this hoarding may be kept with one self in cash form or in the form of idle money. This act of hoarding is done for two objectives: a) the hoarded or cash money may be invested immediately when the rate of interest goes up in the market and the higher profits may be secured, b) the hoarded money may be invested to purchase share and securities when their prices are low and aim at selling them at higher prices in the future. Thus, people desire to hoard too much cash money at low rates of interest and desire to hoard less cash money at higher rates of interest. Therefore, the demand for loanable funds to hoard cash money also makes a supply of loanable funds.

Supply of Loanable Funds

The classical theory of interest tells us that the saving is formed out of current income and the capital is supplied from this saving. But accordingly to the loanable funds theory, the sources of supply of capital depend on the following factors.

I) Savings: The supply of loanable funds is made out of savings of individual persons, families, business concerns etc. According to Prof. Robertson, the amount of difference between the past income and the present consumption expenses is the amount of savings of a person of a family. This amount of savings depends upon the level of income of a person. But if we assume the level of income as constant, the amount of savings changes with a change in the rate of interest. The business firms also save some amount out of their incomes. These firms save aiming at not borrowing from the loan markets. Therefore, if the rate of interest is high in the market, they

save more and if the rate of interest is low, they save less. In fact, such business firms do not enter into the loan markets even the amount of their savings substitute for the loanable funds of the loan market. Therefore, the amount of this savings influences the rate of interest. Thus, the savings of all kinds are interest elastic. Or if the rate of interest is high, the volume of savings ids greater and if the rate of interest is low, the volume of savings is also low. Therefore, the savings curve slope upwards from left to right.

II) Dishoarding: People hoard some portions of their past income in the form of liquid or idle money. When such hoarded idle money is invested, then it is called Dishoarding. This is another important source of supply of the loanable funds. People invest a greater volume of such hoarded money when the rate of interest is high and when the prices of shares and securities is low in the market. Likewise, the investment of such hoarded money decreases when the rate of interest is low and when the price of shares and securities is high in the market. Thus, such hoarding is also interest-elastic and its curve also slopes upwards from left to right.

III) Disinvestment: If there is an economic havoc in the economy or if the current market rate of interest of capital is higher than the marginal revenue productivity of capital to be received or the expected net rate of return of capital, then the business firms start to disinvest their capital. The amount of such disinvestment may be found from both the fixed and the working capitals. The business firms keep some amounts in the form of capital consumption allowances or the depreciation charges for their fixed capital. Now, when they think not to continue or not to run the business, they make the amount of disinvestment received from the capital consumption allowances available in the market in the form of loanable funds. In the same way, the amount received from the sales of the firm's output may also be made slowly available in the market in the form of loanable funds. The volume of the amount of such disinvestment is greater at higher rates and smaller at lower interest rates. Therefore, the disinvestment is also interest-elastic and its curve also slopes upwards from left to right.

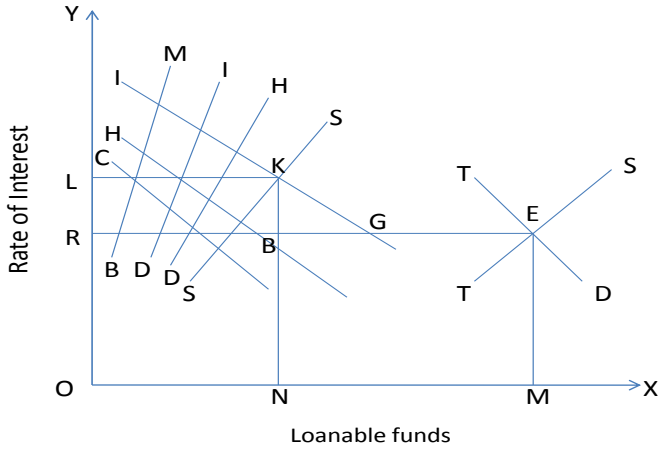
IV) Bank Money: The commercial banks create credit which is called bank money. The bank provides loans to the businessmen and the industrialists by means of credit or bank money created in this way. The commercial banks can also contract credit when necessary. These also

buy and sell securities. Thus, the commercial banks play an important role to supply the loanable funds. But Prof. Knut Wicksell was of the opinion that the bank money is interest inelastic. According to him, the bank money is influenced by the liquidity position of the bank not by the rate of interest. Therefore Prof. Wicksell opinioned that the curve of bank money is a vertical straight line or is parallel to OY axis. But the economists after Prof. Wicksell improved a lot on their ideas and argued that the bank money is not perfectly interest- inelastic but it is interest -elastic to some extent. These economists argue that the less the interest rate is, the less credits the bank creates and the higher the interest rate becomes, the more credits the bank creates. Therefore the curve of bank money also slopes upwards from left to right. We explained the different states of the demand for and the supply of the loanable funds. If we collect all the demand curves at one side and all the supply curves at the other side we get separately the total demand curve and the total supply curve.

Determination of the Rate of Interest

The rate of interest is determined by the interaction of the demand for and the supply of the loanable funds. The determination of the rate of interest is presented in figure 1. In the figure, CC, HH and II are consumption, hoarding and investment demand curves respectively. In the same way, BM, DI, DH and SS are bank money, disinvestment, dishoarding and savings supply curves respectively. TD is the total demand curve for loanable funds and this curve is sloping downwards from left to right while TS is the total supply curve of the loanable funds and this curve is sloping upwards from left to right. E is the interaction point of these two curves. Therefore, the rate of interest is determined at point E or when the demand for and the supply of capital are OM, the rate of interest is OR. Although the total demand for and the total supply of the loanable fund are equal at point E, the amounts of investment and of saving are not equal at this point. Here the amount of investment is RG and the amount of saving is RB or the amount of investment exceeds the amount of saving. Therefore, this is only the short-run state of equilibrium. For the volume of investment is greater than the volume of savings , the income of the people increases in the long-run and as a result, the savings also increases and finally the long-run rate of interest is determined at a point where both savings and investment are equal to each other.

Figure 2.1 Investment Demand Curve



In the context of the determination of the rate of interest, Prof. Wicksell has also mentioned the natural and the market rates of interest. Here, we once turn back to the classical theory of interest. According to this theory, the rate of interest is determined at a point where the demand for (investment) and the supply of (savings) are equal to each other. Therefore, while the investment and savings are equal to point to KN (OL). But Prof. Wicksell argues that this KN (OL) is the natural rate of interest and OR is the market rate of interest. Because, according to him, the natural rate of interest is determined by the interaction of the savings and the investment and the market rate of interest is determined by the interaction of the demand for and the supply of the loanable funds.

The process of the determination of the rate on interest of the Loanable Funds Theory may be specified by the use of pure savings (savings- dissavings), pure hoarding (hoarding-dishoarding) and pure investment (investment-disinvestment). Or the rate of interest is determined at a point where the pure investment and pure hoarding from the demand side and pure savings and bank money from the supply side are equal to each other.

Criticisms

The Loanable Funds Theory of Interest has included both the monetary and the real factors of the economy in the context of the determination of the rate of interest. Therefore, this theory is considered very much superior to the classical theory. Even then, this theory has been criticized on various grounds.

I) First of all, the loanable funds theory also has assumed the state of full employment. But the economists argue that the state of full employment may not be fund in the real world. According to Prof. Keynes, the state of equilibrium in an economy may be achieved only below the level of full employment.

II) This theory has attempted to curb the difficulties of the determination of the rate of interest seen in the classical theory by mixing the real and the monetary factors. But the cities of the theory opine that real factors like savings and investment indicate the flows of money while the monetary factors. But the cities of the theory opine that real factors like savings and investment indicate the flows of money while monetary factor like bank credit and liquidity indicate the changes in the stock of money and therefore the real and the monetary factors cannot be mixed in one place.

III) The theory sates that the rate of interest is determined by the loanable funds. But the loanable funds depend upon the rate of interest. Thus, according to Prof. Hansen, this theory involves us in such a circular reasoning that we cannot come out of it. Therefore, Prof. Hansen and other economists call this theory an indeterminate theory.

IV) This theory has assumed the level of income constant and states that a change in investment does no bring any change in the level of income. But this statement is not considered correct. Because when the rate of interest falls the amount of investment increased and an increase in the amount of investment rises up the level of income.

V) This theory has laid special emphasis on the fact that an increase in the rate of interest

increases the amount of savings. But in fact, it is an exaggeration. Sometimes, a change in the rate of interest may not have any influence on the amount of savings. Especially the saving of a very low income group of people is interest-elastic. In the same way, the people who care more for future may saving more than before although the rate of interest has not been increased. Therefore, the statement that a change in the rate of interest highly influences the amount of savings may not always and in all uses be proved true.

VI) Prof. Keynes has expressed his doubt on the concept of hoarding as used in the Loanable funds theory. Because, according to Keynes, the amount of hoarding may not change unless there is a change in the quantity of money, if the total quantity of money remains the same, the total amount of hoarding in the beginning and at the end of a period remains the same too. The smaller hoarding of money by person is compensated by a greater hoarding of money by another person. But Keynes's doubt on the concept of hoarding (Passive money) does not only depend on the total quantity of money but also depends on the velocity of the circulation of money. And this velocity of the circulation of money itself also depends upon the amount of hoarding of money. Thus, it influences the total supply of money.

VII) The critics have also criticized the theory on the ground that the Loanable funds theory is only a synthesis between the classical theory of interest and the Keynesian liquidity preference theory of interest. Because of this theory only incorporates the savings and investment demand of the classical theory and the liquidity preference of the Keynesian theory into one.

Thus, may critics have criticized the Loanable funds theory on various grounds. Even then, it is regarded superior to the classical theory because it has attempted to explain the determination of the rate of interest by amalgamating the real factors such as savings and investment and the monetary factors such as back money, liquidity preferences, etc Pro. H.G. Johnson has called this theory as dynamic and the Keynesian theory as static.

2.5.3 Liquidity Preference Theory of Interest

Prof. Lord John Maynard Keynes had propounded the Liquidity preference theory of interest. Therefore, this theory is also called the Keynesian Theory of Interest; Prof. Keynes has propounded this theory by criticizing the classical and the Loanable Funds theories of interest. According to Keynes, the rat of interest is calculated by means of money and the interest is a purely monetary phenomenon. Therefore, the Keynesian theory of interest is also called the monetary theory of interest according to this theory, the rate of interest is determined by the demand for money; Keynes has indicated the liquidity preference of the people. On the other hand, the supply of money indicates the total quantity of money available in a fixed period of time. This total quantity of money is changed by the central bank of country **(Joshi, P: 394).**

People spend fixed percentage of their income on consumption the basis of their propensity to consume. The remaining portion pf income after having been spent on consumption may be kept by the people in idle or liquid form or may also be invested to get an additional or extra income. That fact that how much of the income should be invested depends upon the liquidity preference of a Person. If the liquidity preference is greater, people will prefer a greater portion of income to keep in the form liquid money with them and if the liquidity preference is smaller, people will prefer a smaller poison of their income to keep in the form of liquid one with them and they will invest the remaining portion of their income to a place form where a extra income may be secured. But, by nature, people prefer to hold cash money they have invested. Or people desire to get remuneration for parting with their income even for a specified period. To the amount of remunerating received in this way, Prof. Keynes has called 'Interest'. According to Prof. Keynes, "Interest is the reward for parting with liquidity for specified period". Thus the liquidity preference of tee people may be bought by paying them the amount in the form of interest.

It is necessary to explain both, the demand and supply sides of money, separately on the basis of the Keynesian liquidity preference theory of interest.

Demand Side

People prefer to keep a fixed portion of their income in the form of cash or liquid money for the fulfillment of their different objectives. This preference (desire) of cash of liquid money has a great influence on the determination of the rate of interest. If the liquidity preference is greater, the rate of interest is also higher and if the liquidity preference is smaller, the rate of interest is also lower. In the same way, if the current rate of interest is higher is the market, people prefer less cash money to hold, and if the current rate of interest is lower, people prefer to much cash money to hold with them Prof. Keynes has divided the objectives or the preferences of the People to hold cash with them into three parts.

I) Transactions Motive

People hold a certain portion of their income in the form of cash for their daily transactions. Prof. Keynes has again divided this transactions motive into two parts.

a) Income Motive:-

There is a certain period for the people to receive income. The period may be once a month (monthly), twice a month (bi-monthly), once a year (annually), etc. but each person should spend a certain amount of money for their daily consumption. Due to these necessities, people hold a certain portion of their income in the form of cash or liquid money. The preference to hold cash money depends on the form of cash or liquid money. The preference to hold cash money depends on the level of income, duration of receiving income, methods o payment. Etc.

b) Business Motive:

As the individual desire to hold a certain percentage of their income in the form of cash, the businessmen and industrialists also do the same because these businessmen and the industrialists need a certain fund to pay salaries to their employees to pay wages t the laborers, to pay for transportation charges, to pay for raw materials, etc. in the amen way, the banks create a certain cash reserve fund to fulfill the daily demons for cash of their customers, how much percentage of their income does these businessmen, industrialists, banks, etc, hold in the form of cash depends upon the mount of their daily transactions.

II) Precautionary Motive:

The future is uncertain of dark. Nobody can certainly predict the future incidents or the future problems. Therefore, people prefer to hold a certain percentage of their future. To fall ill (sick), to come into accidents, to be unemployed, etc, may be such incidents (events). Keeping objectives to be free from all these sudden uncertainties people hold some cash balances with them. This objective is called the precautionary motive. The demand for cash balances for this precautionary motive depends upon the level of income of the people, standards of living, habit, nature, circumstances, etc.

III) Speculative Motive:

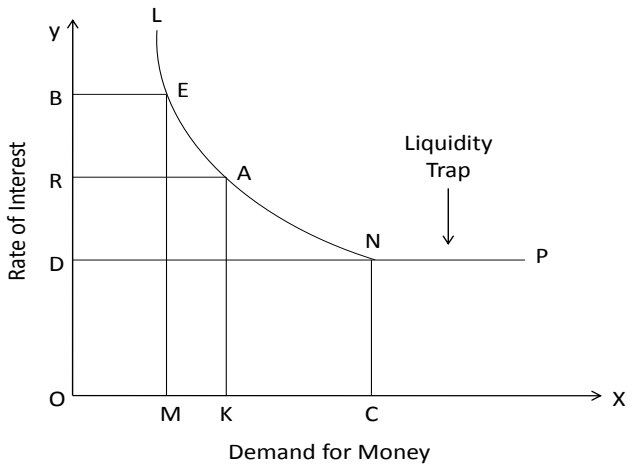
The idea of speculative motive is an original idea of Prof. Keynes. The objective of holding cash to earn more income in future on the basis of a change in the prices of bonds and the rate of interest is called speculative motive. The security paper as well as such other papers which provide a fixed rate of interest in a fixed period of time is called the bond papers. As the cash money held for precautionary motive, the cash money held also for speculative motive acts as a store of value. The cash money held for tee precautionary motive makes people away from the speculative motive helps people earn more profits in the future. In the speculative motive the sales and purchases of bonds and the rate of interest are included. There is an inverse relationship between the prices of bonds and the rate of interest. Or if the prices of bonds raises the tare of interest falls and if the rate of interest rises the price offends falls. People hold cash money with them to earn more profits in future through the changes in the prices of bonds and the rate of interest. if there is a possibility of rising price soft bonds or falling the rate of interest, people prefer to hold less cash with them prices of bonds or falling the rate of interest, people prefer to hold less cash with them and they want to invest a higher percentage of their income in bonds. The businessmen purchase bonds a low price now and sell them at higher prices in the future. The difference between the prices of sales and buys of the bonds becomes the profit of the businessman. Country to it, if the prices of bonds are expected to fall and the rate of interest is expected to rise, the businessmen start selling the bonds they possess and they hold much cash balances to earn more profits in the future when the rate of interest is expected still to rise. Thus, there is an inverse but direct relationship between the rate of interest and the cash balances, can

earn more profits.

We have explained above the demand for liquidity preferences for transactions motive. According to Prof. Keynes, the rate of interest does not have any influence on the demand for cash balances kept for both these objectives. Therefore, he argues that the demand for such cash balance is interest-inelastic. Both these cash balances remain constant and they can be changed only on the basis of the level of income. Therefore, the demand curve of cash balances for both these objectives slopes upwards being parallel of OY axis.

The other side is the portion of income held in the form of cash balances for speculative motive. Due to the reason, the desire for cash balances increases when the rate of interest falls and the desire for cash balances decreases when the rate of interest rises, this cash balance becomes interest-elastic. Finally, when the rate of interest is lowest, the cash balance of this situation (only) becomes horizontal being parallel to OX axis. Before this situation is reached, the cash balances demand curve for speculative motive slopes downwards form left to right. The cash balances demand curve of this situation is presented in figure 2.2.

Figure 2.2. Liquidity preference curve



For example, when the rate interest is OB, the demand of liquid money is OM and when the rate of interest is OR the demand for liquid money is OK and in this way, when the rate of interest is OD the demand for liquid money is OC. Till the rate of interest reaches OD the demand for liquid money is already perfectly elastic. So, after then point N, the curve becomes horizontal and proceeds up. The economists have called the liquidity trap to the portion of the curve after the point N. the people's demand for liquid money is influenced much more by the future expectations of the rate of interest than by the current rate of interest.

Supply Side

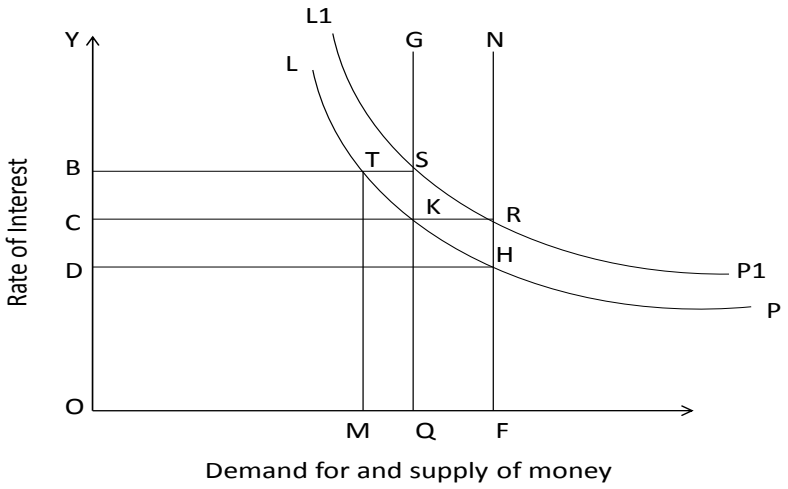
The total supply of money is composed of the total coins, total notes (paper money) and the total bank money available in a country. In fact there is a special difference between the supply of goods and the supply of money. The supply of goods refers to a production and a continuous consumption of it. Therefore, the supply of goods is a flow. But the Central Bank makes the supply of money is a stock. Therefore, Prof. Keynes has considered the supply of money as constant and the supply curve of money is a vertical straight line. A change in the rate of interest does not have any influences the rate of interest and it also directly influences the liquidity preference of the people through changes in the rate of interest. The more the supply of money is, the lower the rate of interest becomes and the less the supply of money is, the higher the rate of interest becomes. But if both the supply f and the demand for money have been increased simultaneously, there will be no increase in the rate interest. For the supply of money, If the monetary authority of the Central Bank increased the supply of money any time the supply curve of money shifts to the right than the previous one.

Determination of the Rate of Interest

According to Prof. Keynes the rate of interest is determined by the interaction of the total demand for liquid money and total supply of money. The total demand for liquid money includes the demand for liquid money for transactions, precautionary and speculative motives. Prof. Keynes has given the name M1 to the demand for cash balances for the first and the

second motives and M2 to the demand for cash balances for the third motive. M1 completely depends upon the level of income and M2 completely depends upon the rate of interest. The total of M11 and M2 to the total demand for money of a country and Keynes has named as M. the total demand for money (M) is interest-elastic or a change in the rate of interest influences it. On the other hand, the total supply of money depends upon the rules and regulations of the government of the Central Bank of the country. The total supply of money is interest inelastic or a change in the rate of interest does not influence it any more. The rate of interest is determined at a point where the liquid money demand curve (Liquidity preference curve) and the money supply curve meet each other. The process of the determination of the rate of interest is presented in figure 2.3

Figure 2.3 liquidity preference curves



In the figure, LP curve represents the total demand for cash balances. This LP curve slopes downwards form left to right fort the demand for the cash balances is interest-elastic. QG curve represents the total supply of money and this curve goes upwards straight being parallel to OY axis because the total supply of moneys controlled by the government or the Central Bank. OX axis measures the total demand for the total supply of money and OY axis measures the rate of interest. At the outset, OC rate of interest is determined because here the demand for money and the supply of money are equal at point K or OC is the equilibrium rate of interest. In this

situation both the demand for and the supply of money are equal to OQ. Now, let us suppose that by any reason the central bank increased the supply of money and the supply curve shifts to the right form QG to FN, but the demand curve of cash balances (LP) is the same. In this situation, the equilibrium rate of interest becomes OD because the constant cash balance demand curve LP and the new supply curve FN meet at the point H. thus, when the demand for cash blackness is constant and only the supply of money is increased, the rate of interest falls. In his situation also, the total demand for and the total supply of money becomes equal. On the other hand when the demand for money is constant and the supply of money decreases to OM, then the demand for and supply of money become equal at point T and the equilibrium rate of interest is determined equal to OB, on the contrary, even when the supply of money is constant and the demand for cash balances changes, the rate of interest also changes. It happens when the level of income changes or there is an expectation of a change in the rate of interest in the future. If the demand for cash balances increase, the LP curve thefts upwards to the right and if the demand for cash balances increases, the LP curve shifts downwards to the left and on this ground the equilibrium rate of interest is determined. For example, if the demand for cash balances increased and its curve shifts form LP to L1P1, the new equilibrium rate of interest reaches form OC to OB. Thus, on the one hand, the demand for cash balances influences the rate of interest, on the other hand, the demand for cash balances influences the rate of interest, on the other hand, also the rate of interest influences the demand for cash balances. Prof. Keynes has assumed M1 (the demand for cash balances for the transactions and the precautionary motives) constant and M2 (the demand for cash balances for speculative motive) variable. Therefore, when we talk about the changes in the demand for cash balances, it indicated only M2.

Whatever might have been told above, if the central bank changes the supply of money in the same proportion as there is a change in the demand for cash balances of the people or if there is a change in the demand for cash balances of the people in the same proportion as there is a change in the supply of money, the rate of interest remains constant.

According to Prof. Keynes, the supply of money refers to the total of money people hold or desire with them. The rate of interest is determined by the interaction of this supply of money

and demand for cash balances. Therefore, according to Keynes, the rate of interest is not the result of savings, thrift, abstinence, etc. rather it is the result of parting with liquid money. The rate of interest may be equal to the marginal revenue productivity of capital but the marginal revenue productivity of capital cannot determine the rate of interest. In the same way, according to Keynes, it is not the rate of interest but a change i8n the level o income which brings equality between the saving an the investment. Thus, Prof. Keynes has explained the determination of the rate of interest on the basis of the purely monetary activities (pure demand for and supply of money). Therefore, this theory is also called the monetary theory of interest.

Criticisms

Prof. Keynes propounded his theory of interest criticizing the classical and the neo-classical theories of interest. He has presented his new concept to interest in his famous book “The General Theory of Employment, Interest and Money." In fact, the Keynesian theory of interest is an original theory and it becomes successful to provide a new contribution to the economic world. By leaving aside both the purely real phenomenon of the classical theory Prof. Keynes has attempted to explain the determination of the rate of interest only on the ground of purely monetary phenomenon. Thus, although the Keynesian theory of interest is an original theory, different economists have criticized this theory on various grounds.

I) Prof. Keynes has expressed in his theory that money is demanded due to the preferences of liquidity for speculative purpose. In the same way, he has also expressed that money is supplied by the Central Bank or other monetary units of a country. He opines that the supply of money is independent of the rate of interest and the government, the Central Bank and the monetary authorities have control over it. Therefore, the supply of money is considered as constant and the supply curve of money is a vertical straight line being parallel to OY axis. Prof. J.R. Hicks has surely criticized this statement. According to Prof. Hicks also, the supply of money is influenced by the rate of interest or the supply of money may not remain independent of a change in the rate of interest. But because Prof. Keynes has assumed the supply of money as fixed and has laid a great emphasis only on the demand for liquid money, the Keynesian theory

to the determination of the rate of interest is considered as one sided theory.

II) According to the classical theory of interest, the rate of interest is completely determined by the real factors like saving, investment, etc. Prof. Keynes criticized the classical theory on this very ground and propounded a theory which tells us that the rate of interest is determined by the purely monetary factors like the demand for and the supply of money. But because the demand for cash balances depends upon the productivity o capital, investment, the propensities to save and consume, etc, in reality, the determination of the rate of interest may not be separated from the real factors. In this context, the world of the Swedish economist Prof. Knot Wicksell is worth mentioning. He says that any theory which does not include the monetary and the real factors in relation to the determination of the rate of interest may not be considered as a complete theory. Therefore, the Keynesian theory while being a purely monetary theory connote explain the determination of the rate of interest.

III) All the economic theories of Prof. Keynes are based on the short-run explanations. Therefore, also this theory of Keynes explains only how the rate of interest is determined in the short-run. This theory is unable to mention how the rate of interest is determined in the long-run.

IV) The Keynesian theory is not considered successful even in explaining the determination of the rate of interest on the short-run because, according to this theory, the rate of interest should be higher due to the higher liquidity preferences at this of depression. Bu in reality, he reality, the rate of interest is very low at times of depression. In the same way, the liquidity preference of the people is very low at times of boom. Therefore, according to Keynes, the rate of interest should be low at such times. But the reality is just reverse to it. Due to, at times of boom although the liquidity preference is low, the rate of interest is rising due to industrial progresses, therefore, the Keynesian theory of the determination of the irate of interest is considered completely wrong in the context of depression and boom.

V) According to Prof. Keynes, interest is reward for parting with liquidity, not the return for saving and waiting (abstinence). But Keynes could not remember that saving and waiting

(abstinence) are the compulsory factors for getting loanable funds. According to Prof. Jacob Vainer, there is no possibility of parting with liquidity without savings and the rate of interest is the reward for savings without the parting with liquidity.

VI) Prof. Keynes has stressed that the people demand for cash balances due to changes in the price of bonds and the rate of interest. But people get both the interest and the cash balances by depositing their funds in the savings and current accounts in the banks and by investing their funds in the short-run treasury bills. In such situations, the Keynesian concept of holding cash balances for speculative motives may disappear and it makes the Keynesian theory controversial.

VII) Prof. Keynes has criticized the classical and the neo-classical theories as indeterminate. According to Keynes, the rate of interest is determined byte demand for cash balances and the supply of money. But the Keynesian theory itself is indeterminate because the demand for cash balances depends up-on the level of income and the level income upon the rate of interest. Because, unless we know the rate of interest, we may not know the level of income and unless we know the level o income we may not know the amount of demand for cash balances. Therefore, also the Keynesian theory of interest is uncertain and indeterminate as the classical and the neo-classical theories are.

VIII) According to some critics, people demand for cash balances due to other different objectives apart from the three motives presented by Keynes. But they argue, the interest is not revived for parting with these cash balances (liquidity). They again opine that the interest is received for the productivity of capital.

In this way, different economists have criticized the Keynesian theory of the rate of interest on various grounds. Even then, the importance of liquidity preference presented by Keynes should be considered correct and this sis his originality, too. Although the liquidity preference is glimpsed through the explanation of hoarding and disc hoarding in the neo-classical theory, too, this neo-classical theory is unsuccessful to explain it in details.

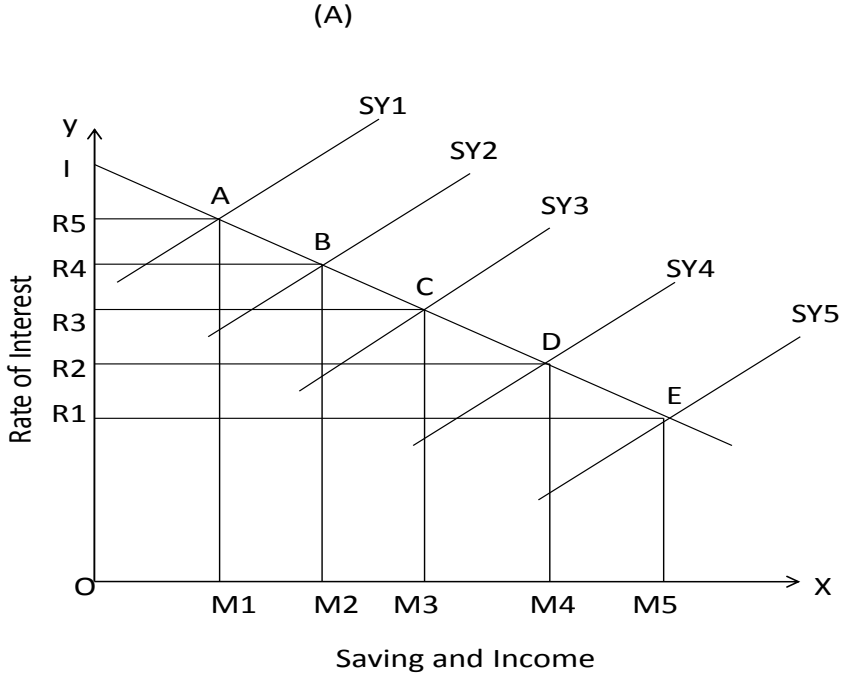
2.5.4 The Modern Theory of Interest

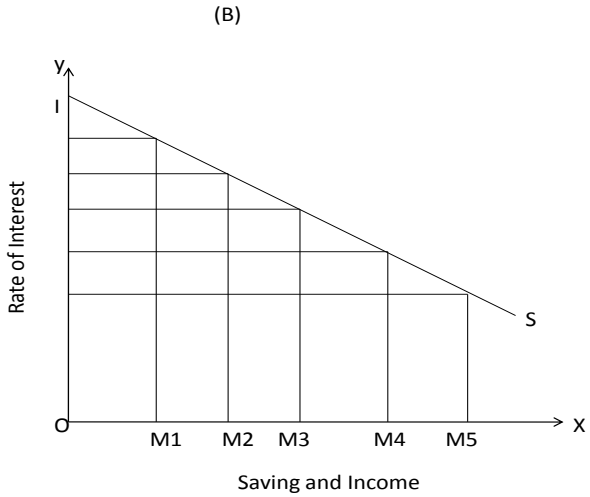
All the theories of the rate of interest appeared till today are uncertain and indeterminate. For example, the classical theory has laid a greed emphasis on the role of real factors in determining the rate of interest. The Loanable funds theory has included both the real and the monetary factors in this work, but it has not been succeeded in it. In the same way, Prof. Keynes has laid a special emphasis only on the monetary factors. Thus, not any theory has been able to present a satisfactory explanation in relation to the determination of the rate of interest. Therefore, Prof. Hicks and Hansen have propounded a separate theory about it. This theory is called the modern theory of interest. This theory is also called determinate theory of interest. Profs. Hicks and Hansen have opined that there is only a difference n the concept of savings between the classical and the Loanable Funds theories and in all other things they are same. Therefore, these economists have attempted to mix form the one side the classical an the neo-classical theories and from the other side the Keynesian theory of interest in their modern theory of interest. Or in this modern theory attempts have been made to mix both the real and the monetary factors. In fact, in the determination of wages, both the real factors of the classical theory and the monetary factors of the Keynesian theory are logical. Therefore, these modern economists have presented a satisfactory explanation o fat determination of the rate o interest by mixing both these factors. According to this modem theory, (i) saving function, (ii) investment faction, (iii) liquidity preference function and (iv) supply function are included in the determination of the rate of interest. The theory may be brought into at complete form also by including the level of income in these four factors. To present a combination of these different factors, Prof, hicks has constructed an IS curve. This IS curve states a situation o fan equilibrium established in the real sector. On the other hand, Prof. Hansen has constructed an LM curve to present the same combination. This LM curve expresses a situation of an equilibrium established in the monetary sector. According to the modern theory of the rate of interest, the rate o interest is determined at a point where these two curves intersect each other. Now, let us explain the construction of the IS and LM curves in short.

Construction of IS curve

In a society, there are people of various income levels. The amount of savings is as much higher as the level of income is. The rate of interest is as much lower as mount of savings is high. On this ground, Loanable funds theory has presented us a group of loanable funds in different income level. This group of laonable funds amalgamating with the investment curve makes available to us a new curve which I scaled a Hicks Ian IS curve. The construction of an IS curve is presented in figure 2.4(A)(B)

Figure 2.4 (A) (B) IS curve

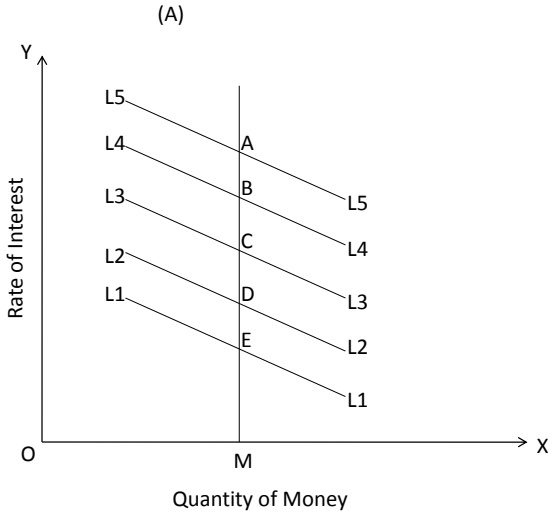


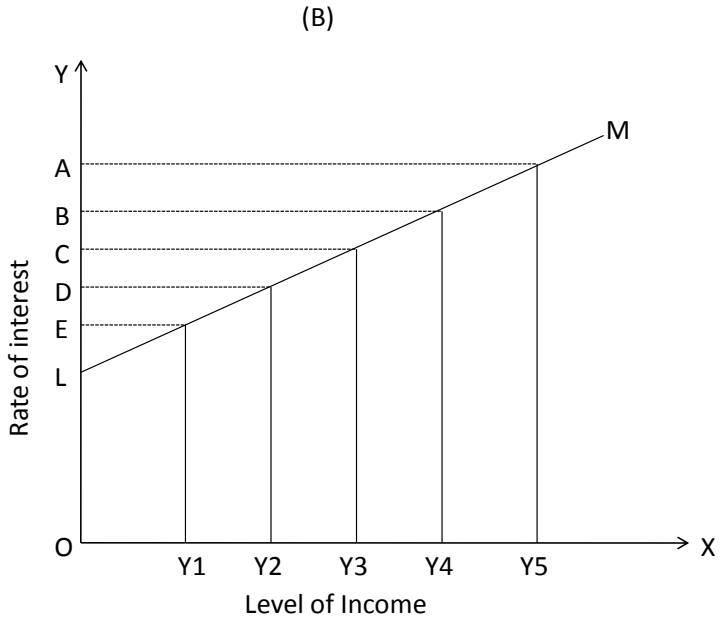


Here, the investment curve is assumed as constant. In the figure, OX axis measures the level of income and OY axis the rate of interest. It may clearly be seen in the figure that each increase in the level o income has increased the amount of savings and has reduced the rate o interest. For example, when the level of income was OM1 the savings and income curve was SY1 and the rate of interest was R5 Gradually when the level of income reaches OM5 the savings and income curve becomes SY5 and the rate of interest becomes R1. When we join all the points of savings and income curves recei8ved in this sway we get Hicksian IS curve which is shown in figure 5-B. the position of this IS curve depends upon the position of savings and investment. A change in savings and investment. A change in savings and investment also cause a change in the position of IS curve. Therefore, the IS curve slopes downwards to the eight in each increase in the level of income.

Construction of LM Curve

The liquidity preference of the people is different at the different at the different levels offense. When the level of income increases in the rate of interest. On this ground, the liquidity preference theory of Prof. Keynes provides us a group of liquidity preference curves. This group of the liquidity preference curves, along with the supply curve of money, provides us a new curve to which Prof. Hansen has named as LM curve. There supply curve of money is supposed to be constant because the supply curve of money, provides us a new curve to which prof. Hansen has named as LM curve. The supply curve of money is supposed to be constant because the supply of money I conducted by the Central bank or the monetary authority of a country. This LM curve maintains a site of equilibrium between the supplies of money received form various levels of income and the demand for the cash balances of the people and shows the rate of interest determined on this ground.





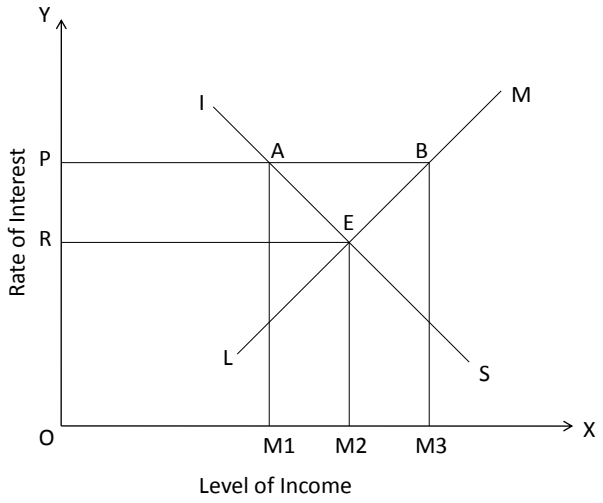
In figure 2.5(A) and 2.5 (B) a construction of Lm curve is presented. In the figure, MP is the supply curve of money which is constant at the OM quantity of money L1, L2, L3, L4 and L5 represent the demand for money at various levels of income respectively. A, B, C, D and E are the equilibrium points of demand of and the supply of money. If we draw straight lines form each point to reach the OY axis, we may clearly see the determination of the rate of interest by equilibrating the demand for and the supply of money at different levels of income. Thus, if we win the points of the rats of interest determined at various levels of income by equilibrating the demand for cash balances and the supply of money a new curve is constructed and this curve is called the Hansen's LM curve.

Determination of the Rate of interest

We have already presented a process of construction of IS curve. The IS curve is a joint curve of savings and investment. Or at his IS cure the investment and the savings have reached a state of equilibrium, according to the classical economists, the rate of interest is determined at the state

of equilibrium of these investment and d savings (real factors) on the other hand, we have also presented above process of construction of LM curve. This LM curve is joint curve of the demand for cash balances and the supply of money. Or at this LM curve, the demand for cash balances and the supply of money have reached a state of equilibrium. According to Prof. Keynes, the rate of interest is determined at the state o equilibrium o f this demand for cash balances and the supply of money (monetary factors). But both these processes of the determination of the rate of interest are one sided and according to profs. Hicks and Hansen the rate of interest is determined only by the interaction of these two processes. The process of the determination of the rate of interest according to the modern theory is presented in the figure 2.6

Figure no. 2.6, IS and LM joint curve



In this figure, OX axis measures the level of income and OY axis the rate of interest IS curve is sloping downwards form left to right. LM curve is sloping upwards from left to right, these two curves meet at points E. so or (EM1) rate of interest is determined. Apart from this, the point equilibrium also shows that the level of income is determined at OM. Thus, the modern theory of the determination of the rate of interest explains the determination of the rate of interest together with the determination of the level of income.

Thus the modern theory has included all the factors like the desire to save (propensity to save),

supply of money, investment, liquidity preference, etc. in the process of the interest rate determination and it also explains how a change in any factor among them affects the rate of interest and the level o income. Besides, the theory also explains how a change in nay factor among them affects the rate of interest and the level of income. Besides, the theory also explains how the government of a country influences the supply of money (LM curve) by changing her monetary policy and how the government influences the savings and the investment (IS curve) by changing the republic expenditures.

Criticisms

The economists like Hicks and Hansen have provided a new contribution to the economic world by propounding the modern theory of the rate of interest. This theory is also successful in coordination fiscal and monetary policies or the income determination and the monetary theories by integrating the classical he Keynesian theories of interest, even then, there are some weaknesses of this theory.

I) First of all, the theory of the determination of the rate of interest of Hicks and Hansen is based on the assumption that the rate of interest is perfectly variable. But the rate of interest is not always perfectly variable in practice. The central bank of a country can adopt a policy to control the rate of interest. This theory may not be applied if the rate of interest is not completely variable.

II) This theory is based on the assumption that the investment is interest-elastic. But it may not be said that the investment is always interest, elastic. This theory does not apply if the investment is interest inelastic any time.

III) According to Prof. Don Patenting and Prof. Milton Friedman, this theory is very much artificial and very much simple as well. According to them, to divide the economy into real and monetary sectors is itself an artificial and unreal. In fact, both these sectors are tied up together and they act and react to each other.

IV) According to Prof. Patenting, the factors like supply of money, savings, propensities to consume, investment, liquidity preference, etc. do not only 9influence the rate of interest and the level of income but they also influence the prices of the goods and services. The theory of determination of rate interest of Profs. Hicks and Hansen has not mentioned anything about it.

2.6. Review of Related studies

2.6.1 Review from Thesis

1. Kishore Kari Chatter's

Interest Rate structure and its relati*on with deposit, inflation and credits in Nepal 1980*

·To present a concrete picture of the interest rate and other economic variable like deposit, inflation and credit flow in Nepal.

· To analyze the impact and implementation the policy of interest rate of Nepal Rastray Bank.

· To provide suggestions and recommendation for improvement in the rate structure in Nepal.

·He concluded in his study.

· Deposit is affected through the factors of income, inflation and interest rate.

2. Narendra Bahadur Rajbhandry's

The interest Rate structure of commercial banks in Nepal 1978

· The Relation of interest rate with saving and fixed deposit with loans and advances and with interest earning.

· Deposits are positively and significantly correlated with the interest rate

· There is significant correlation between the saving deposits and the rate of interest.

· Negative correlation between loans and interest rate.

· Mean that loans decrease higher interest Rate and vice-versa.

· The net interest earning is depended upon interest convey.

3. Deepak Raj Bhandari 's

Mr. Deepak Raj Bhandari's study on Thesis, "A study on impact of interest rate structure on

investment portfolio of commercial banks".

· To cast a glance of the historical background

· Interest rate structure of commercial banks, policies, decisions an strategies regarding it and their impact.

· To access the impact of interest rate structure of commercial banks on their investment portfolio by analyzing their deposits, loan/advance, interest spread, investment and bills purchased and discounted.

The interest rate is important for amount of deposit collection of the commercial banks is incensement declining with the deposit rate. The depositors are very conscious. They increase their deposit, if higher deposits rate are offered.

Bhabdari, Deepak Raj (1998) A study on impact on interest rate structure on investment portfolio of commercial bank of Nepal" Master Degree Thesis submitted to Tribhuvan university center library.

4. Sachi Bhatta

Interest rate and its effect on Deposit and lending.

· Deposit Rate of all sample banks under study are in decreasing trend. Meaning that every year deposit rates of sample banks under study are also in decrease trend, men's that every year lending rates of samples banks under study have decreased.

· Analysis shows that interest rates on lading are for higher than deposit rates of sample banks.

· Ms. Bhatt going to find out the deposit rate and lending rate.

5. Mr. Jhabindra Pokhrel

Determinants of Interest Rate in Nepalese Financial Market

To show the relationship between the liquidity position and interest rate on deposit and lending.

·To identify the effect of inflection on interest rate changed and offered by various Nepalese Financial institution.

·To identify the different methods used by Nepalese Financial intuition to calculate interest on lending.

Mr. Pokharel is going to find out determination of interest rate in Nepalese Financial Markets banks, finance etc. he is going to find out the objectives Qualitative method and quantitative method. He found that correlation confection between interest rate on deposit and amount of deposit highly negative.

a) Lending rate and lending amount co-relation coefficient to be found negative.

b) Interest rate on deposit and inflation rate is little positive.

c) The relationship of interest rate on lending with risk free rate is both positive and negative

2.6.2 Review from International Articles

I). Determinants of the term structure of interest rates- approaches to combining arbitrage free models and monetary macro economics

DEUTSCHE BUNDESBANK

Monthly Report April 2008, 15

The term structure of interest rates represents the relationship between the maturities and the yields of bonds. While short-term interest rates are influenced crucially by monetary policy, longer-term interest rates mainly reflect market player's expectations of future macroeconomic developments interest rates of different maturities do not move independently of each other, however. Rather, they are linked by the condition of absence of arbitrage, which means that the term structure must not allow any trading strategy which means that the term structure must not allow any trading strategy which permits risk-free investment profits from investment in bonds of differing maturities. Modem term structure models link this key concept form the refinance literature to explanatory approaches form macro economics. This article presents the basic idea of such combined modeling using the germen term structure as an illustration. It identifies how the term structure reacts to inflationary and business cycle movements and calculates the level of the risk premiums constrained in bond yields. Basic concepts and shapes of the term structure over time the nominal term structure reflects the relationship between the maturities of a bond.

II). The Corresponding Rate of Interest

DEUTSCHEBUNDESBANK

Monthly Report April 2008, 16

1) The Securities issued by the Federal Government have maturities at issue ranging from six months to over 30 years. The term structure of Federal bonds is calculated and published by the Bundesbank on a daily basis.

2) At the beginning of April this year, the German term structure, as calculated by the Bundesbank, was somewhat flatter than its long-term average. The spread between the yields for ten-years and one-year bonds was somewhat more than0.9 percentage point; on 1 30-year bonds was somewhat more than 0.9 percentage point; on a 30-year long-term average, the spread between the long and short ends of the bond market amounted to 1.26 percentage points.

3) Accordingly, the mean term structure, I've, the average of the yield curves over a period of several years, slopes upward, besides this "normal" shape, which implies an annual, yield that increases with the time to maturity of the bonds, the curve may occasionally be inverted. This means that a lower annual yield prevails for longer maturities than for shorter ones; the spread between one-year and ten- year bonds becomes negative. For example, the monetary policy tightening the began in 1979 resulted in short=term interest rates rising to record levels, while the longer-term yields in the capital market did not entirely keep pack the market players assumed that the increase in short term rates would be temporary, with rates going back down in the longer term. In line with this, an inverted yield curve could be observed beginning in September 1979. With the decline in interest rates that began in autumn 1981. The interest rate differential gradually returned to "normal" again; form August 1982, the slope of the yield curve was positive. There were similar periods of high short-term interest rates from May 1989 to March 1990, and from November-current as at 7 April 2006% time to maturity in years 0 1 2 3 4 5 6 7 8 9 10 Term structure of German bond market interest rate *for maturities of one, three and six months: money market rates re[parted but Frankfurt bank. For maturities of one to ten years: interest rates for (Hypothetical) Zero-coupon bonds (Stevenson method), based on listed Federal securities. Deutshe Bundesbank 4.0 3.8 3.6 3.4 3.2 3.0 2.8 2.6 1 in this context, the term structure typically represents the yields of zero-coupon bonds. Such bonds are characterized by the fact that, while no payments are incurred until their maturity, their purchase price is lower

than the fixed amount to be paid back. The yield associated with such a bond corresponds to its return, i.e. the constant annual rate growth by which the invested capital finally increases up to the amount to be paid out. Unlike zero-coupon bonds, most traded bonds are characterized by the fact that payment (coupons) are paid to the creditor during the life of the bond at predetermined dates. Nevertheless, in principle, any coupon bond may be expressed as a portfolio of zero-coupon bonds. This means that the prices of every coupon bond can b calculated from the term structure of zero-coupon bonds 2 using a numerical procedure, the yield on "artificial" zero-coupon bonds are calculated for fixed times to maturity form the bonds traded on the market. A detailed account of the estimation technique and the data used may be found in Deutsche Bundesbank, Estimating the term structure of interest rates, Monthly report, October 1997, PP 61-66.3 The average was calculated from the month-end levels from January 1976 to march 2008. Term structure based on Federal Government issues Shapes of the term structure over time.

III) Approaches to explaining the shape and dynamics of the term structure of interest rate

DEUTSCHE BUNDES BANK

Monthly Report April 2007, 17

The determinants of interest rates of differing maturities and their behavior over time are of great interest to financial markets and central banks. For monetary policy, the term structure is of importance in two respects. First, it contains information not only on market expectations of future interest rate movements but also of future developments in inflation and the business cycle. Second the relationship between short-term and long-term interest rates is relevant to the monetary policy transmission mechanism; although monetary policy has crucial impact on the short end of the term structure, it is mainly longer-tem interest rates which influence decisions on investment, the acquisition of consumer durables or, say, purchasing owner-occupied housing. The expectations hypothesis is one of the oldest and most prominent approaches to explaining to explain the relationship between interest rates of differing maturities, in it's pure form, his hypothesis states that, in equilibrium, investment in long-term bond is equivalent to the expected return on successive short-term investment. Under this condition, the one year interest rate, for example, equals the average of the current interest rate and the 11 expected future one.

CHAPTER –III

RESEARCH METHODOLOGY

A research methodology helps to solve the research problem in a systemic way. This chapter has been designed and developed as a guideline or a plan for the achievement of objectives set and developed for the purpose of this study in the first chapter. Reliability and validity of research work is facilitate by research methodology and the basic objective of this chapter is to guide chapter four for data presentation, descriptive and empirical analysis of interest rate and its effect on deposits and landings. So, suitable research methodology as demanded by the study has been followed. It is intended to use simple and lucid research methodology.

3.1 Research Design

Research design is a plan, structure and strategy of investigation. It is a blue print for the collection measurement and analysis of data. Research design is the arrangement of conditions and analysis of data in a manner that aims to combine. Relevance to the research purpose with economy in procedure. This is an ex-post facto or historical research design. Research design is more analytical and less descriptive. The relevant and needed data has been collected from various publications of various commercial banks and publication of Nepal Rastray Bank. (Wolf and Pant, p:92)

3.2 Population and Sample of the study

The "Population" or universe for research means all the members of research study in which the research is based. Here the population or universe of the study comprises of all 18 commercial banks of Nepal. As the study only 6 banks are taken as sample. From population here the simplest method of sampling that is simple random sampling method is used. The sample banks are 1. Standard Chartered bank, 2. NABIL Bank Limited, 3. Nepal Investment Bank, 4. Bank of Kathmandu Limited, 5. Himalayan Bank Limited, 6. SBI Bank Limited.

For the Primary Research

Following table presents the detail of the respondents group of the selected sample.

1. Demographic Status

It shows the information relating to the respondents. The researcher designed the various demographic variables for study as shown below.

Table No- **3.1**

Age group of Respondents

Age	Frequency	Percent	Valid Percent	Cumulative Percent
20-29 year	23	34.8	34.8	34.8
30-39 year	24	36.4	36.4	71.2
40-49 year	15	22.7	22.7	93.9
50-59 year	4	6.1	6.1	100.0
Total	66	100.0	100.0	

Table no 3.2

Profession of respondents

Profession	Frequency	Percent	Valid %`	Cumulative percent
Academicians	15	22.7	22.7	22.7
Officials (Banking & Finance)	34	51.5	51.5	74.2
Officials (govt. service	8	12.1	12.1	86.4
Official (Other sector)	4	6.1	6.1	100.0
Total	66	100.0	100.0	

Table no 3.3

Experience of respondents

Experience	Frequency	Percent	Valid percent	Cumulative percent
1-5 year	23	34.8	34.8	34.8
6-10 year	16	24.21	24.2	59.1
11-15 year	21	31.8	31.8	90.9
15 & above year	6	9.1	9.1	100.0
Total	66	100.0	100.0	

Table no 3.4

Profession Level of respondents

Profession Level	Frequency	Percent	Valid percent	Cumulative percent
Assistant Level	15	22.7	22.7	22.7
Officer level	32	48.5	48.5	71.2
Manager Level	13	19.7	19.7	90.9
Director Level	6	9.1	9.1	100.0
Total	66	100.0	100.0	

Table no 3.5

Gender group of respondents

Gender	Frequency	Percent	Valid percent	Cumulative percent
Male	45	68.2	68.2	68.2
Female	21	31.8	31.8	100.0

Total	66	100.0	100.0	

Table no 3.6

Education status of respondents

Formal Education	Frequency	Percent	Valid percent	Cumulative frequency
Bachelor Degree	23	34.8	34.8	34.8
Master Degree	42	63.6	63.6	98.5
Above master degree	1	1.5	1.5	100.0
Total	66	100.0	100.0	

3.3 Sources of Data

Basically this tidy is based on published sources of information. Thus, this study is based on secondary source o data to fulfill above-mentioned objectives. The secondary data are collected from various publications of commercial banks. Nepal Rasta Bank and even form websites of various banks, the primary data has been used in this study as the primary information regarding this tidy through the SPSS data processing. Data Processing and Analysis Techniques. Data obtained from various sources cannot be directly used in their original form when data will no be printed in understandable and easier way. Homogeneous data have been sorter din on table and similarly various tables have been prepared to keep required data. Using financial and statistical tools, the data have been analyzed and interpreted.

3.5 Tools for Data Analysis

As this study required more statistical tools rather than financial tools to attain the objectives set above various statistical tools have been used which as follows:

Arithmetic Mean: Arithmetic Mean of given set of observation is their sum divided by the number of observations. In such a case all the items are equally important. Simple arithmetic mean is used in this study as per the necessity for analysis.

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

Where,

∑x= sum of all values of the variable "X"

N= number of observations

X= Variable involved

Standard Deviation: The standard deviation usually denoted by the letter sigma (σ). Karl Pearson suffused it as a widely used measure of desperation and is defined as the positive square root of the arithmetic mean of the square deviation. 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.

$$\text{Standard Deviation } (\sigma) = \frac{\sum (X-X)2}{N}$$

The greater the standard deviation the greater will be the magnitude of the deviation of the values form mean vice versa.

Coefficient of Correlation: Correlation is a statistical tool, which studies the relationship between two variables, and correlation analysis involves methods techniques used for studying and measuring the extent of the relationship between the two variables. Two or more variables are said to be correlated if change in the value of one variable appears to be related or linked with the change in the other variables. When the r3elationship is of a quantitative nature, the appropriate statistical tool for discovering and the relationship and expressing it in brief formulas is correlation analysis (Gupta, p: 49)

$$\text{Correlation coefficient } (r) = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}}$$

Correlation may be positive or negative and ranges form –1 to +1, when r =+1, there is 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. Simple correlation between interest rate and deposit, between interest rate, inflation rate and deposit rate and lending is examined in this study.

Coefficient of Determination (r^2): the square of simple correlation co-efficient is called co-efficient of determination. It measures the percentage of total variation in dependent variable explained by independent variable.

Similarly multiple correlation coefficients between above mentioned variables also have been determined once assuming interest rate of deposit as dependent variable and other two variables (deposit amount and lending rate) as independent and then assuming interest rate on lending as dependent variable another two variables 9lending amount and deposit rate) as independent.

Where,

X and Y = tow variables, correlation between which is calculated

N = total number of observations

The multiple correlation is used for measure of degree of association between one variable and group of other variables as the independent variable, It lies between 0 and

1. The close it is to '1' the better the linear relationship between the variables. The closer it is to '0' the worse is the linear relationship.

Multiple Correlation coefficient; variable one as dependent and variables two and three is independent.

$$(R1.23) = \sqrt{\frac{r12^2 + r13^2 - 2r12r13r23}{1-r23^2}}$$

Where,

r12 = correlation coefficient between variable one and two

r13 = correlation coefficient between variable one and three

r23 = correlation coefficient between variable two and three

Coefficient of Multiple Determinations: The Square of multiple correlation coefficients is called coefficient of multiple determination and it is very useful in interpreting the value of multiple correlation coefficient. The main significance of 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. Co-efficient of multiple determination measures the percentage of total variation in dependent variable. The significance of it is to represent the proportion of total variations in the dependent variable which is explained by the independent variables.

Coefficient of multiple determination = $R_{1.23}^2$

T-test for Significance of Correlation Coefficient:

T-distribution is commonly called student's t-distribution and is used when the sample size is less than 30, given a random sample form bi variety normal population. When hypothesis is tested that the correlation coefficient of the population is zero, i.e., the variables in population are uncorrelated, the following t- test is applied; which is applied in this study

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

Here,'t' follows t-distribution with (n-2) degree of freedom (d.f.) 'n' being the number of sample. If calculated value of't' exceeds t0.05 d.f ; we say that the values of 'r' is significant at 5% level. If't' < t0.05 the data are consistent with the hypothesis of and uncorrelated population.

3.7 Variables

Variables are the characteristics of persons, things, groups, programme etc. A variable is thus a symbol OT which numerals or values are assigned. Deposit rate, lending rate, deposit amount, lending amount, inflation etc are variables of this study.

CHAPTER –4

PRESENTATION AND ANALYSIS OF DATA

Presentation and analysis of data is the major part of this research study. Using the various financial variables and statistical tools discussed in 'Research Methodology' we analyze the data to achieve our objective of the study.

4.1 Appropriate Model to Determine the Interest Rate

Interest Rate is cost of money. It is determined for bearing the various costs like, insurance against Risk, Reward for inconveniences and payment for management expenditure etc. the determinants of interest rate if the composition of risk free rate risk factor, inflation rate, time period etc.

The classical theory the determinant of infest rate is determined by the financial market place where supplies of loan able funds inters twitch demands of loan able funds trends to settle at the point where the quantities of liable funds demanded and supplied are equal.

The loan able funds show that the rate of interest is determined by the interaction of the demand and supply. In the demand for loan able funds, the investment of the production of the capital goods and the loans for consumption purpose are also included.

The liquidity preference theory of interest, the interest rate of interest is determined by the demand money. Keynes has indicated the liquidity preference of the people. On the other hand, the supply of money indicates the total quantity of money available in a fixed period of time. This total quantity of money is changed by the central bank of country.

According to professor Keynes the rate of inters is determined by the interaction of the total demand of liquid money and the total supply of money. The total demand for liquid money includes the demand for liquid money transaction precautionary and speculative motives.

The modern theory explanation of the determination of the rate of interest by mixing classical theory and monetary factors, saving function, investment function, liquidity preference function and supply function are included in the determination of rate of interest.

Above presentation various model are use for determinate of inters rate the modern theory is more suitable in practice.

Interest Rate Determination Methods

The methods of charging interest on lending as follows.

- Add on installment method
- Simple interest/collect basis
- Discounted method
- Simple or regular installment method
- Flat method

i) Add on installment Method

Add on installment Method interest on whole principle is added to principle amount and the sum is the divided by the number of payments to fix the size of installment. This method used in finance companies.

ii) Simple interest/collect basis/lump sum method

This method calculates installment might be monthly, quarterly and even daily. Duration of installments depends upon the nature of loan i.e. it differs according the sector and borrowing party. Most of the commercial bank uses this method.

iii) Discounted method

Under this method interest on whole amount is deducted form principle and remaining is provided to borrowers as proceeds.

iv) Simple or regular installment method

This simple method amount of principle and interest together is payable at the end of maturity.

v) Flat method

The flat method interest is charged on whole amount and payable in installment. Principle also payable in installment but interest is charged on whole principle amount even in remaining balance of principle is decreasing.

4.2 Presentation and Analysis of Data

4.2.1 Analysis of trend and relationship of deposit, lending, and various rates.

The analysis of trends and relationship between the various variables are presented in tables, calculation of correlation analysis, and presentation on figure and show the relationship, t-test and verification in static's tools and techniques.

Correlation analysis

Correlations analysis represents the statistical technique for identifying the degree of relationship between two variables. It is the tool generally used to analyze the nature and degree to which one variable is related to another. Karl Pearson's coefficient of correlation is a widely accepted method for the correlation analysis that finds the coefficient of correlation.

4.2.1.1 Standard Chartered Bank Ltd.

The Following table 4.1 presents the different information of standard chartered bank Ltd, related to yearly deposit amount, loan amount, interest rate on deposit and lending, inflation rate and risk free rate.

Table No-4.1

Position of deposit amount, lending amount, inflation rate and risk free rate

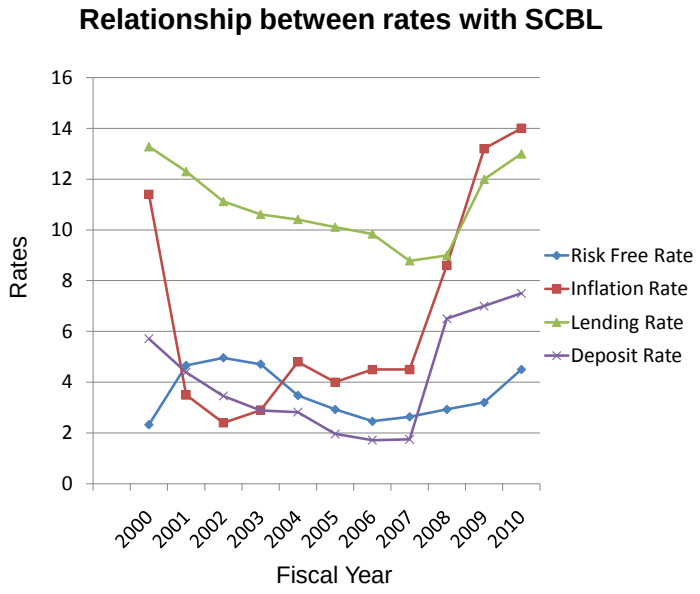
						(RS IN MILLION)
YEAR	**DEPOSIT (a)**	**INT DEP(b)**	**LOAN AMT (c)**	**INT LENDIG (d)**	**INFLATION (e)**	**RF RATE (f)**
2000	11160.8	5.71	4693.10	13.28	11.40	2.33
2001	12566.4	4.39	4957.50	12.30	3.50	4.66
2002	15430.1	3.46	5924.10	11.12	2.40	4.96
2003	15835.7	2.89	5787.90	10.61	2.90	4.71
2004	18755.5	2.82	6080.70	10.41	4.80	3.48
2005	21161.4	1.96	6729.60	10.11	4.00	2.93
2006	19444	1.72	8214.00	9.84	4.50	2.46
2007	23050.5	1.75	8905.00	8.78	4.50	2.64
2008	24640.3	6.5	10538.1	9.0	8.6	2.93
2009	29743.9	7.0	13355.0	12.0	13.2	3.2
2010	35871.8	7.5	13118.6	13.0	14	4.5

(Source: Banking and financial statistics 2000-2010)

Above 4.1 tables presents the details for calculation of various information. It helps to Identify the trend of deposit, lending interest rate and other factors .The main objectives of this table is also to identify the relationship between different rate through the calculation of correlation.

Figure 4.1

Trend of interest rate on deposit lending, inflation rate and risk free rate



This figure shows the relationship between standard chartered bank deposit rate, lending rate, inflation rate and risk-free rate. The figure shows the trend of rates. Every year interest on deposit and lending rate decrease continuously and then increases and inflation rate and risk free rate shows up and down in different year.

Table no-4.2

Correlation between different components of SCBL

Variables	Coefficient of correlation	Coefficient of determination	t-statistics	Table value	Remarks
Rab	-0.934	0.8723	6.4028	2.44	Significant
Rbd	0.968	0.9370	9.45	2.44	Significant
Red	-0.904	0.8172	5.1795	2.44	Significant
Rbe	0.609	0.3708	1.88	2.44	Not Significant

Rbf	0.183	0.033	0.5090	2.44	Not Significant
Rde	0.552	0.304	1.620	2.44	Not Significant
Rdf	0.202	0.040	0.5050	2.44	Not Significant

Table no 4.3

Multiple correlation coefficients and multiple determinations

Rb.ad	0.9680	R2b.ad	0.930
Rd.bc	0.9556	R2d.bc	0.9131
Rb.ef	0.9098	R2b.ef	0.827
Rd.ef	0.9165	R2d.ef	0.839

Standard Charted Bank Nepal Ltd. is one of the Joint Venture Commercial Bank in Nepal. We are analyzing about the bank correlation, the activities of deposit and lending rate.

The correlation coefficient between deposits and interest rate on deposit (rab) is –0.934. The coefficient of determination between the interest rate on deposit and two variables R2ab is 0.8723. T-statistics for testing significance of correlation is 6.40. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value. Correlation coefficient is significant.

The correlation coefficient between deposit rate and lending rate is rbd = 0.962 which is positive. The determination of coefficient between deposit rate and lending rate is r2bd = 0.9370 which is positive, T-value for the testing significance of correlation is 9.45. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is less than the calculated value correlation coefficient is significant.

The correlation coefficient between deposit rate and risk free rbf = 0.183 is positive. The coefficient determination (r2bf) =0.033 positive T-statistics for retesting significance of

correlation is 0.5091. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated clue, correlation coefficient is not significance.

The correlation coefficient between lending rate and inflation rate is red is 0.552 is positive and determination of correlation coefficient is r2dc = 0.304 is positive correlation. T-Statistics for retesting significance correlation is 1.620. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is significant.

The correlation between the lending rate and risk free rate red =0.202 is positive. The determination of correlation coefficient is r2df = 0.040. T-statistics for retesting significance of correlation is 0.5050. Since the tabulated T-clue at 5% level of significance for r5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

The multiple correlation coefficients on interest rate deposit depend on lending and deposit amount is 0.9680. The coefficient of multiple determinations r2ad is 0.09370. The multiple correlation coefficient lending rate amounts independent is 0.9556 , the coefficient of multiple determination R2dbc is 039131.

4.2.2.2 SBI Bank Ltd.

The following table 4.4 presents the different information of SBI bank related to yearly deposit amount, loan amount, interest rate on deposit and lending, inflation rate and risk free rate.

Table no 4.4

Position of deposit amount lending amount, inflation rate and risk free rate

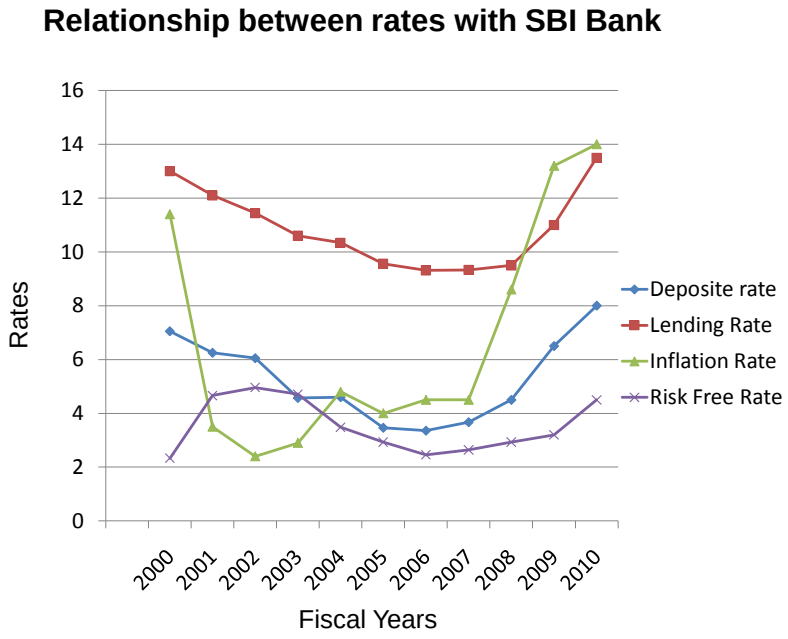
YEAR	DEPOSIT (a)	INT DEP (b)	LOAN AMT (c)	INT LENDIG (d)	INFLATION (e)	RF RATE (f)
2000	4362.2	7.05	2930.4	13	11.4	2.33
2001	4543.2	6.25	3560.1	12.1	3.5	4.66
2002	6618.4	6.05	4176.3	11.44	2.4	4.96
2003	5572.2	4.571	4593.9	10.6	2.9	4.71
2004	6522.8	4.6	4766.1	10.34	4.8	3.48
2005	7232.1	3.464	5552.5	9.56	4	2.93
2006	8645.8	3.355	6619	9.3315	4.5	2.46
2007	10852.7	3.67	8060	9.33	4.50	2.64
2008	11445.2	4.5	9846.7	9.5	8.6	2.93
2009	13715.4	6.5	12574.9	11	13.2	3.2
2010	27957.2	8.0	15465.2	13.5	14	4.5

(Source: Banking and financial statistics 2000-2010)

Above 4.4 table presents the details for calculation of various information. It helps to identify the trend of deposit, lending interest rate and other factors. The main objectives of this table are also to identify the relationship between different rates through the calculation of correlation.

Figure 4.2

Trend of interest rate on deposit lending, inflation rate and risk free rate



This figure shows the relationship between the SBI bank deposit rate, lending rate, inflation rate and risk-free rate. The figure shows the trend of rates. Every year interest on deposit and lending rate decrease continuously and has increased later and inflation rate and risk free rate shows up and down in different year.

Table no -4.5

Correlation between different components of SBI Bank

Variables	Coefficient of correlation	Coefficient of determination	t-statistics	Table value	Remarks
Rab	-0.772	0.5959	2.975	2.44	Significant
Rbd	0.987	0.9741	15.022	2.44	Significant
Rcd	-0.898	0.8064	4.9928	2.44	Significant
Rbe	0.442	0.1953	1.2054	2.44	Not significant
Rbf	0.353	0.124	0.9230	2.44	Not significant
Rde	0.503	0.2530	1.4239	2.44	Not significant

Rdf	0.302	0.0912	0.7750	2.44	Not significant

Table no 4.6

Multiple correlation coefficients and multiple determinations

Rb.ad	0.9834	R2.ad	0.9834
Rd.bc	0.9917	R2d.bc	0.9834
Rb.ef	0.9474	R2b.ef	0.8974
Rd.ef	0.9299	R2d.ef	0.8648

SBI bank is the one of commercial bank in Nepal. This bank permanence is going up good now the days.

The correlation between the deposit amount and interest on deposit (rab) it 0.772 which is negative correlation. The determination of two variables r2 abs 0.5959 I positive t-statistics for testing the significance of correlation is 2.975 since the tabulated t-value at 5% level of significance for degree of freedom 2.44 is less than calculated value correlation is significant.

The correlation between interest o deposit and interest in lending is (rbd) = 0.9741 which is positive correlation. The determination of correlation on coefficient r2bd = 0.9741 which is positive t-statistics for testing the significance of significance for 5 degree of freedom 2.44 is less than the calculated value calculated value correlation coefficient is significant.

The correlation coefficient between to interest rate on deposit and inflation rate is r= 0.442 which is positive correlation. The confiscate of declination between two variables rw be = 0.1953 which is positive. T=static for testing the significance of correlation is 1.2054. Since the tabulated value of freedom 2.44 is greater than calculated value correlation coefficient is not significant.

The correlation coefficient deposit and risk free rate is r bf=0.353 which is positive correlation the coefficient of determination of two variables r2 bf= 0.124. Which is positive correlation? T-statistics for testing the significance of correlation is 0.9230. Since the tabulated value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value. Correlation coefficient is not significant.

The correlation coefficient between the interest rate on lending and inflation rate r d e = 0.503 which is positive. The coefficient of determination two variables r2 d e = 0.2530. Which is positive? T-statistics for testing. The significance of correlation is 1.1239 since the tabulated t-value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value correlation coefficient is not significant.

The correlation coefficient between lending rate and risk free rate r d f = 0.302 which is positive. The defilations of two variables are 0.0912 which is positive t-spastics for testing the significance of correlation is 0.7750. since the tabulated value at 5% level of significance for 5 degree of freedom 2.44 is grater that the calculated value. Correlation is significance.

4.2.2.3 Nepal Investment Bank

The following table 4.7 percents the different information of NIBL bank related to yearly deposit amount, loan amount interest rate on deposit and lending, inflation rate and risk free rate.

Table no – 4.7

Position of deposit amount, lending amount, inflation rate and risk free rate

YEAR	DEPOSIT (a)	INT DEP (b)	LAON AMT (c)	INT LENDING (d)	INFLATION (e)	RF RATE (f)
2000	2438.9	6.25	1421.60	12.18	11.40	2.33

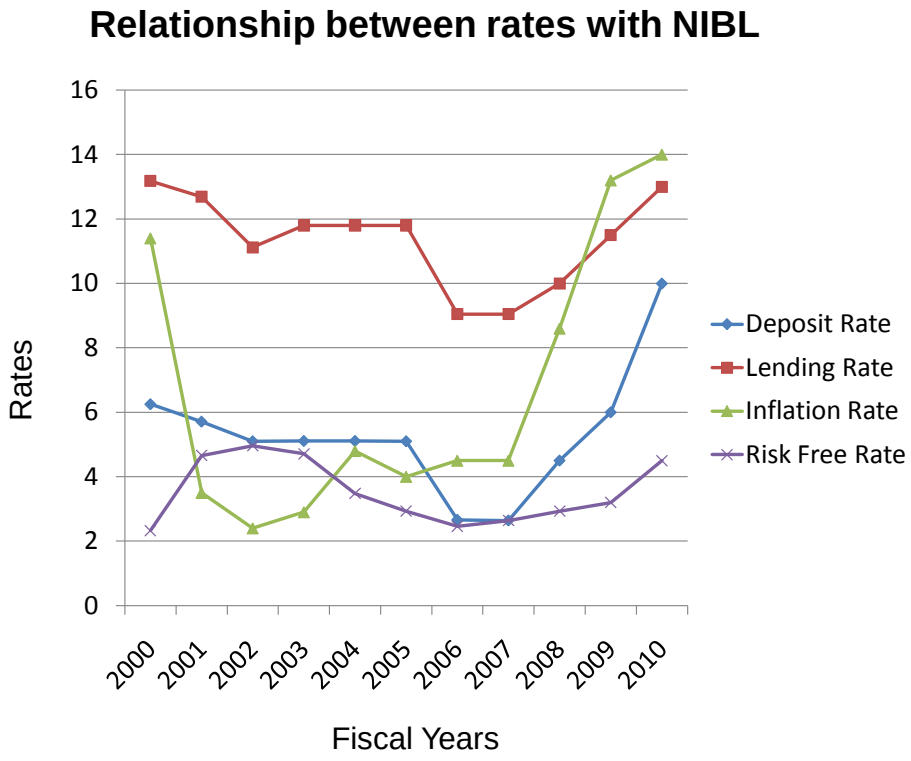
2001	2982.4	5.71	2071.30	12.69	3.50	4.66
2002	4256.2	2.10	2431.30	11.12	2.40	4.96
2003	4174.8	5.11	2715.70	11.80	4.80	3.48
2004	7922.8	5.11	5949.20	11.80	4.80	3.48
2005	11706.3	5.10	7290.20	11.80	4.00	2.93
2006	14254.8	2.66	10295.00	9.05	4.50	2.46
2007	18927.3	2.64	13007.00	9.05	4.50	2.64
2008	24488.9	4.5	17482.0	10	8.6	2.93
2009	34451.8	6	27145.5	11.5	13.2	3.2
2010	46697.9	10	36250.4	13	14	4.5

(Source: Banking and financial statistics 2000-2010)

Above 4.7 table presents the details for calculation various information. It helps to identify the trend of deposit, lending interest rate and other factors. The main objective of this table is also to identify the relationship between different rates through the calculation of correlation.

Figure 4.3

Trend of interest rate on deposit lending, inflation rate and risk free rate.



This figure shows the relationship between rates of NIBL, bank deposit rate, lending rate, inflation rate and risk-free rate. The figure show the trend of rates every year interest on deposit and lending rate decrease continuously and then increases and inflation rate and risk free rate shows up and down in different years

Table no – 4.8

Correlation between different components of NIBL

Variables	Coefficient of correlation	Coefficient of determination	t-statistics	Table value	Remarks
Rab	-0.895	0.8010	4.9152	2.44	Significant
Rbd	0.985	0.970	13.94	2.44	Significant
Rcd	-0.870	0.7569	4.322	2.44	Significant
Rbe	0.308	0.0948	0.7929	2.44	Not significant

Rbf	0.398	0.1584	1.062	2.44	Not significant
Rde	0.366	0.1339	0.9633	2.44	Not significant
Rdf	0.317	0.100	0.3170	2.44	Not significant

Table no 4.9

Multiple correlation coefficient and multiple determinations.

Rb.ad	0.9893	R2b.ad	0.9783
Rd.bc	0.9868	R2d.bc	0.9737
Rb.ef	0.8415	R2b.ef	0.7081
Rd.ef	0.8126	R2d.ef	0.6603

The correlation coefficient is between the deposit amount and deposit rate rab = -0.895 which is negative correlation. The determination two variables r2ab = 0.8010 which is positive-statistics for testing the significance of correlation is 4.9152. Since the tabulated value at %% level of significance for 5 degree of freedom 2.44 is than the calculated value correlation is significant.

The correlation coefficient is between the deposit rate and lending rate rbd is 0.985 which is positive. The determination of two variables r2bd = 0.970 which is positive. T-statics for testing the significance of correlation is 13.94. Since the tabulated positive value at 5% level f freedom 2.44 is less than the calculated value correlation is significant.

The correlation between loan Amount and lending rate red = -0.870 which is negative. The determination between two variables r2cd = 0.7569 which is positive correlation statistics for testing the significance of correlation is 4.322. Since the tabulated value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value correlation is significances.

The correlation coefficient between interest on deposit and risk free (rbf) = 0.938 which is positive. The determination between two variables r2bf = 0.1589 which is positive. The T-statistics for testing the significance of correlation is 1.062. Since the tabulated value at 5% lending significance for 5 degree of level freedom 2.44 is greater than the tabulated value correlation is significant.

The correlation coefficient between interest on lending and inflation rate rde = 0.366 which is positive. The determination of two variable r2ec = 0.1339. T-statistics for testing the significance of correlation is 0.9633. Since the tabulate value at 5% level of significance for 5 degree freedom 2.44 is greater than calculated value correlation is significant.

The correlation coefficient between lending rate and risk free rate (rdf) = 0.317 which is positive-statistics for testing the significance of correlation is 0.3170. Since the tabulated clue at 5% level of significance for 5 degree of freedom 2.44 greater than calculated value correlation is significant.

4.2.2.4 NABIL Bank Ltd.

The following table 4.10 presents the different information of NABIL ban related to yearly deposit amount, loan amount interest rate on deposit and lending, inflation rate and risk free rate.

Table – 4.10

Position of deposit amount, lending amount, inflation rate and risk free rate

YEAR	DEPOSIT(a)	INT DEP% (b)	LOAN AMT (c)	INT LENDING% (d)	INFLATION%(e)	RF RATE% (f)
2000	9464.4	6.75	5811.7	13.23	11.4	2.33
2001	12780.1	6.75	7323.6	13.09	3.5	4.6
2002	15838.9	4.64	8437.6	11.01	2.4	4.96
2003	15370.6	3.842	7328.2	10.4425	2.9	4.71
2004	13437.7	3.34	8267.8	9.25	4.8	3.48
2005	14098	2.8	8769.7	9.67	4	2.93
2006	14586	3.2	11078	9.354	4.5	2.46
2007	19348.4	2.77	13021	9.54	4.50	2.64

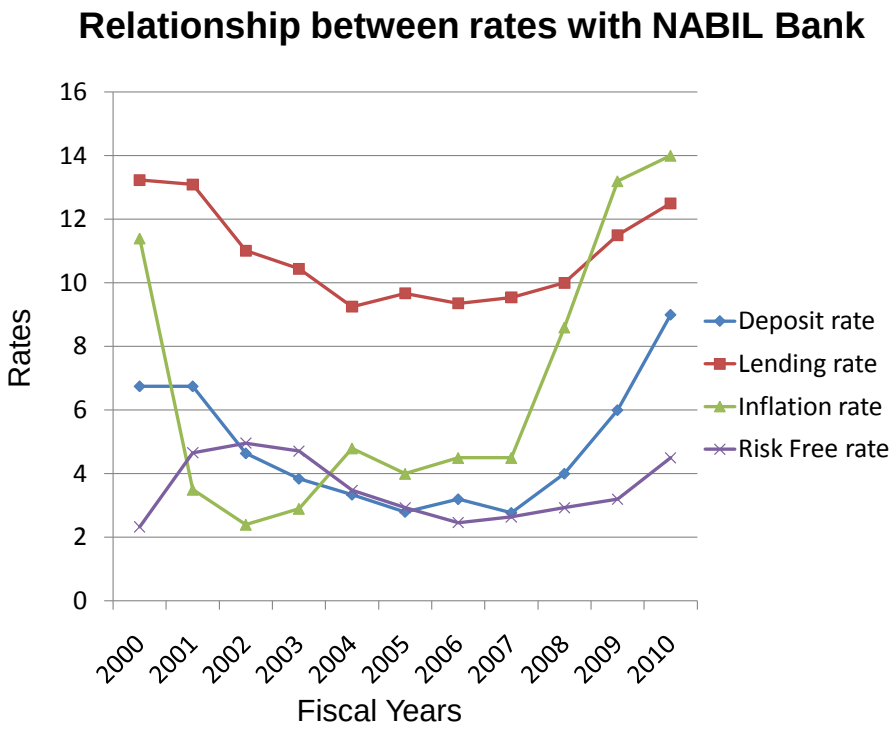
2008	23342.4	4	15657.1	10	8.6	2.93
2009	31915.0	6	21514.6	11.5	13.2	3.2
2010	37348.3	9	27816.6	12.5	14	4.5

(Source: Banking and financial statistics 2000-2010)

Above 4.10 table presents the details for calculation various inflammation. It helps to identify the trend of deposit, lending interest rate and other factor. The main objective of this table is also to identify the relationship between different rates through the calculation of correlation.

Figure 4.4

Trend of interest of deposit, lending, inflation rate and risk free rate



This figure shows the relationship between rates of NABIL ban deposit rate, lending rate, inflation rate and risk-free rate. The figure show the trend of rtes every year interest on deposit and lending rate

decrease continuously and then increases and inflation rate and risk free rate shows up and down in different years.

Table no- 4.11

Correlation between different components of NABIL Bank Ltd.

Variables	Coefficient of correlation	Coefficient of determination	t-statistics	Table value	Remarks
Rab	-0.934	08723	6.4028	2.44	Significant
Rbd	0.982	0.9643	12.73	2.44	Significant
Rcd	-0.689	0.474	2.3269	2.44	Significant
Rbe	0.462	0.213	1.2756	2.44	Not significant
Rbf	0.257	0.066	0.6513	2.44	Not significant
Rde	0.464	0.2152	3.1426	2.44	Not significant
Rdf	0.237	0.0561	0.8762	2.44	Not significant

The correlation coefficient between deposits and interest rate on deposit (rab) is -0.934. The coefficient of determination between the interest rate on deposit and two variables. R2 ab= 0.8723 T-statistics for testing significance of correlation is 6.4028 since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value. Correlation coefficient is significant.

The correlation coefficient between deposit rate and lending rate is rbd = 0.982 which is positive. The determination of coefficient between deposit rate and lending rate is r2bd = 0.9643 which is positive. T-Value for the testing, significance of correlation is 12.73 since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is less than the calculated value correlation coefficient is significant.

The correlation coefficient between loan amount and lending rate is red = -0.689 which is negative correlation. The coefficient of determinations between two variable r2cd=0.4774. T-statistics for testing the significance of correlation is 2.3269. Since the tabulated T-value at 5% level of significance 5 freedoms 2.44 is less than calculate value correlation coefficient is significant.

The correlation coefficient between deposit rate and inflation rate is rbc = 0.462 is positive correlation. The coefficient of determination between two variables r2bc is 0.213, which is positive correlation. T-statics for testing the significance of correlation is 1.2756. since the tabulated rate at 5% level of significance 5 degree pf freed, 2.44 is greater than calculated value correlation coefficient is not sufficient.

The correlation coefficient between deposit rate and risk free rbf = 0.257 is positive. The coefficient id determination (r2df) 0.066 positive T-statistics for testing significance of correlation is 0.6513. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

The correlation coefficient between lending rate and inflation rate is rde is 0.464 is positive and determination of correlation coefficient is r2de = 0.2152 is positive correlation. T-Statistics for testing significance correlation is 3.1426. Since the tabulated T-value at 5% level of significance for 5 degree pf freedom 2.44 is less than calculated value correlation coefficient is significant.

The correlation between the lending rate and risk free rate rdf = 0.237 positive. The determination of correlation coefficient is r2df = 0.0561. T-statistics for testing significance of correlation is 0.8762. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

The multiple correlation coefficients on interest rate deposit depend on lending and deposit amount is 0.9847. The coefficient of multiple determination r2b.ad is 0.9697. The multiple correlation coefficient lending rate amounts independent is 0.9814 the coefficient of multiple determination R2d.bc is 0.9632.

4.2.2.5 Himalayan Bank

The following table 4.13 presents the different information of Himalayan bank related to yearly deposit amount, loan amount interest rate on deposit and lending, inflation rate and risk free rate.

Table no -4.13

Position of deposit amount, lending amount, inflation rte and risk free rate

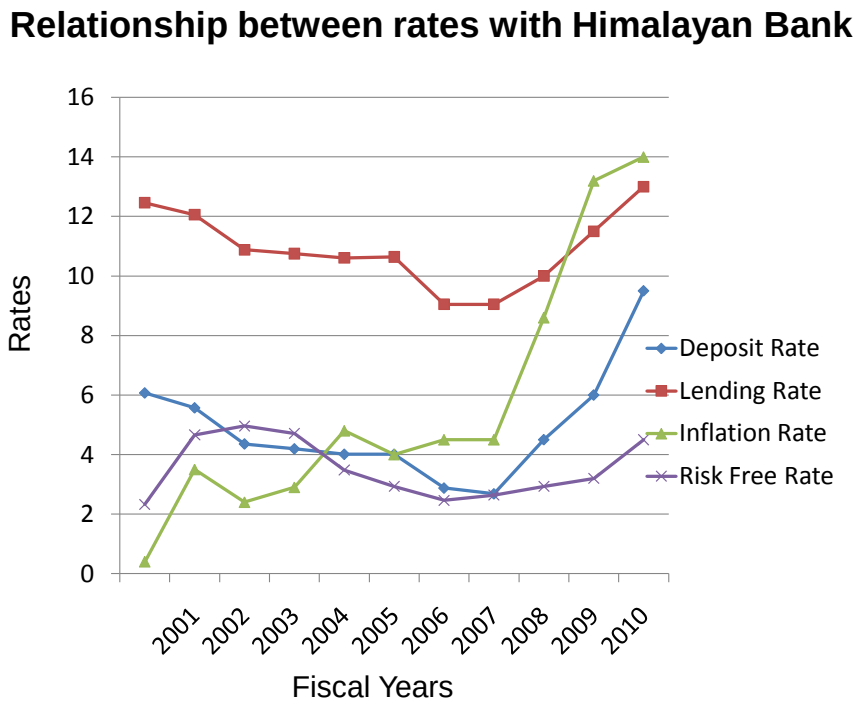
YEAR	DEPOSIT (a)	INT DEP (b)	LOAN AMT (c)	INT LENDING (d)	INFLATION(e)	RF RATE (f)
2000	9780.4	6.07	5372	12.46	11.4	2.33
2001	14082.5	5.57	7423.2	12.06	3.5	4.66
2002	17613.6	4.357	9176.9	10.88	2.4	4.96
2003	18595.2	4.192	7673.5	10.75	2.9	4.71
2004	21002.8	4.01	11079.0	10.61	4.8	3.48
2005	22760.9	4.01	13081.7	10.64	4	2.93
2006	24831.1	2.875	13245	9.047	4.5	2.46
2007	26456.0	2.68	15516	9.05	4.50	2.64
2008	29905.8	4.5	17672.0	10	8.6	2.93
2009	31805.3	6	19985.8	11.5	13.2	3.2
2010	34681.0	9.5	25292.1	13	14	4.5

(Source: Banking and financial statistics 2000-2010)

Above 4.13 table presents the details for calculation various information. It helps to identify the trend of deposit, lending interest rate and other factors the main objectives of this table is also to identify the relationship between different rate through the calculation of correlation.

Figure 4.5

Trend of interest deposit and lending, inflation rate and risk free rate.



This figure shows the relationship between rates of Himalayan bank deposit rate, lending rate, inflation rate and risk-free rate. The figure show the trend of rates every year interest on deposit and lending rate decrease continuously and then increases and inflation rate and risk free rate shows up and down in different year.

Table No – 4.14

Correlation between different components of Himalayan bank

Variable	Coefficient of correlation	Coefficient of determination	t-statistics	Table value	Remarks
Rab	-0.975	0.95062	10.75	2.44	Significant
Rbd	0.993	0.9860	20.55	2.44	Significant
Rcd	-0.894	0.2381	4.88	2.445	Significant
Rbe	0.488	0.2381	1.36	2.44	Not significant
Rbf	0.269	0.072	0.6839	2.44	Not significant
Rde	0.43	0.1849	1.1666	2.44	Not significant
Rdf	0.321	0.1030	0.83011	2.44	Not significant

Table no 4.15

Multiple correlation coefficient and multiple determinations

Rb.ad	0.9948	R2ab.ad	0.986
Rd.bc	0.3450	R2d.bc	0.119
Rb.ef	0.6107	R2b.ef	0.372
Rd.ef	0.8023	R2d.ef	0.634

The correlation coefficient between interest rate on deposit and interest rate on deposit (rab) is -0.975. The coefficient of determination between the interest rate on deposit and two variables. R2 ab = 0.9562 T-statistics for testing significance for 5 degree of freedom 2.44 is less than calculated value. Correlation coefficient is significant.

The correlation coefficient between deposit rate and lending rate is rbd = 0.993 which is positive. The determination of coefficient between deposit rate and lending rate is r2bd = 0.9862 which is positive T-value for the testing, significance of correlation is 20.55. Since the tabulated T-value at 5% level of

significance for 5 degree of freedom 2.44 is less than the calculated value correlation coefficient is significant.

The correlation coefficient between loan amount and lending rate is red = -0.894 which is negative correlation. The coefficient of determinations between two variable r2cd = .2381. T-statistics for testing the testing the significance of correlation is 4.88. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value correlation coefficient is significant.

The correlation coefficient between deposit rate and inflation rate is rbe = 0.488 is positive correlation. Te coefficient of determination between two variables r2be is 0.2381, T-stastics for testing the significance of correlation is 1.36. Since the tabulated rate at 5% level of significance 5 degree pf freed, 2.44 is quarter than calculated value correlation coefficient is not sufficient.

The correlation coefficient between deposit rate and risk free rbf = 0.269 is positive. The coefficient id determination (r2bf) 0.072 positive T-statistics for testing significance of correlation is 0.6839. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

The correlation coefficient between lending rate and inflation rate is rde is 0.43 so [positive and determination o correlation coefficient is r2de = 0.1849 is positive correlation. T-Statistics for testing significance correlation is 1.1666. Since the tabulated T- value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is significant.

The correlation between the lending rate and risk free rate rdf 0.321 which is positive. The determination of correlation coefficient is r2df = 01030. T-=statistics for testing significance of

correlation is 0.8311. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

The multiple correlation coefficients on interest rate deposit depend on lending and deposit amount is 0.9948 the coefficient of multiple determinations r2ad is 0.986.

4.2.2.6 Bank of Kathmandu

The following table 4.16 presents the different information of BOK related to yearly deposit amount, loan amount interest rate on deposit and lending, inflation rate and risk free rate

Table no – 4.16

Position of deposit amount, lending amount, inflation rate and risk free rate

YEAR	DEPOSIT (a)	INT DEP(b)	LOAN AMT(c)	INT LENDING(d)	INFLATION(e)	RF RATE(f)
2000	2396.50	7.00	1811.50	14.24	11.40	2.33
2001	3983.00	5.34	2995.30	12.48	3.50	4.66
2002	5724.10	4.75	4327.10	11.36	2.40	4.96
2003	5735.90	4.75	4977.60	11.52	2.90	4.71
2004	6169.60	4.02	4956.20	10.54	4.80	3.48
2005	7741.60	3.38	6104.90	9.92	4.00	2.93
2006	8942.80	3.03	6167.00	9.83	4.50	2.46
2007	10429.30	3.04	7525.00	9.55	4.50	2.64
2008	12358.6	5	9663.6	10.5	8.6	2.93
2009	15932.7	7.5	12692.9	12	13.2	3.2

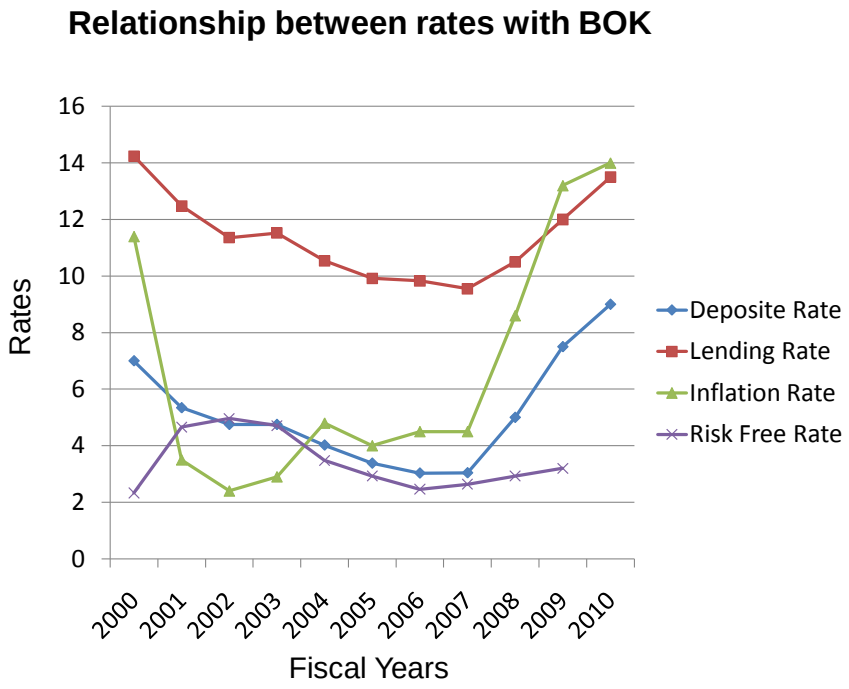
2010	18083.9	9	14984.7	13.5	14	4.5

(Source: Banking and financial statistics 2000-2010)

Above 4.16 table presents the details for calculation various information. It helps to identify the trend of deposit, lending interest rate and other factors. The main objective of this table is also to identify the relationship between different rates through the calculation of correlation.

Figure 4.6

Trend of interest rate deposit and lending, inflation rate and risk free rate



This figure shows the relationship between rates of BOK, deposit rate, lending rate, inflation rate and risk-free rate. The figure show the trend of rates every year interest on deposit and lending rate decrease continuously and then increases and inflation rate and risk free rate shows up and down in different years.

Table no – 4.17

Correlation between different components of BOK

Variables	Coefficient of correlation	Coefficient of determination	t-statistics	Table value	Remarks
Rab	-0.975	0.9506	10.75	2.44	Significant
Rbd	0.994	0.988	22.23	2.44	Significant
Rcd	-0.960	0.9216	8.397	2.44	Significant
Rbe	0.604	0.3648	1.856	2.44	Not significant
Rbf	0.208	0.0432	0.5208	2.44	Not significant
Rde	0.618	0.3819	1.9255	2.44	Not significant
Rdf	0.175	0.03062	0.4353	2.44	Not significant

The multiple correlation coefficient lending rat amounts independent I 0.3450 the coefficient of multiple determinations R2dbc is 0.119

Table no 4.18

Multiple correlation coefficients and multiple determinations

Rb.ad	0.990	R2.ad	0.981
Rd.bc	0.9948	R2d.bc	0.989
Rb.ef	2.5912	R2b.ef	6.714
Rd.ef	0.9747	R2d.ef	0.794

The correlation coefficient between interest rate on deposits and interest rate on deposit (rab) is -0.975. The coefficient of determination between the interest rate on deposit and two variables. R2 ab=0.9506. T-statistics for testing significance of correlation is 10.75. Since the tabulated T-value at 5% level of

significance for 5 degree of freedom2.44 is less than calculated value. Correlation coefficient is significant.

The correlation coefficient between deposit rate and lending rate is rbd = 0.994 which is positive. The determination of coefficient between deposit rate and lending rate is r2bd = 0.988. This is positive T-value for the testing. Significance of correlation is 22.23. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is less than the calculated value correlation coefficient is significant.

The correlation coefficient between loan amount and lending rate is red = 0.960 which is negative correlation. The coefficient of determinations between two variable r2cd = 0.9216. T- Statistics for testing the significance of correlation is 8.397. Since the tabulated T- value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value correlation coefficient is significant.

The correlation coefficient between deposit rate and inflation rate is rbe = 0.604 is positive correlation. The coefficient of determination between two variables r2bc is 0.3648, which is positive. T-statistics for testing the significance of correlation is 1.856. Since the tabulated rate at 5% level of significance 5 degree of freedom 2.44 is quarter than calculated value correlation coefficient is not sufficient.

The correlation coefficient between deposit rate and risk free rbf = 0.208 is positive. The coefficient id determination (r2bf) 0.0432 is positive. T-statistics for testing significance of correlation is 0.5208. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

The correlation coefficient between lending rate and inflation rate is rde is 0.618 is positive and determination of correlation coefficient is r2dc = 0.3819 is positive correlation. T- Statistics for tting significance correlation is 1.9255. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is significant.

The correlation between the lending rate and risk free rate rdf 0.175 is positive. The determination of correlation is 0.4353. Since the tabulated T-value at 5% level of significance for 5 degree of freedom 2.44 is greater than calculated value correlation coefficient is not significance.

4.3 Presentation and analysis of primary data

For the meaningful research basically secondary and primary data are very important and fundamental thing too. The primary data is collected on the basis of a questionnaire spread over to different financial sectors. The basic purpose of the distributing the questionnaire was to obtain a knowledge on the various aspects of the interest rate especially the view point of academicians. Banking officer, NRB officials, lecturer and investor as how to they regard the interest rate in Nepal

4.3.1. Environmental Factors and its effect in interest rate determinants

The environmental factors are important for determinants of interest rate. The valuable opinion viewer presents their opinion as given below.

The preset section describes the various environmental factors that directly affected the interest rate. The environmental factors must be analyzed because they have high influence on determining interest rate. The mean score above the average level indicate that the environmental factors have high influence on determining interest rate and vice-versa.

Table no 4.19

Descriptive statistics of environmental factors

Variable	N	Minimum	Maximum	Mean	Std. Deviation

Nepalese economic environment is favorable to determine interest rate	66	1.00	6.00	2.5909	1.09513
Nepalese political environment is favorable to determine interest rate	66	1.00	6.00	1.7727	1.18705
Nepalese social environment affects to determine interest rate	66	1.0	5.00	3.1970	0.88090
Open boarders of the Nepal affects to determine the interest rate	66	1.00	6.00	2.6970	1.34702
Easy to hold Indian currency affects to determine the interest rate	66	1.00	5.00	2.5000	1.01147
Valid N (list wise)	66				

Sample test

	T	**Df**	**Sig. (2-tailed)**	**Mean Difference**	**95% Confidence Interval of the Difference**	
					Lower	Upper
Nepalese economic environment is favorable to determine interest rate	-3.035	65	0.003	-.4091	-.6783	.1399
Nepalese political environment is favorable to determine interest rate	-8.399	65	.000	-1.2273	1.5191	-.9355
Nepalese social environment affects to determine interest rate	1.817	65	.074	.1970	-0.196	.4135

Open boarders of the Nepal affects to determine the interest rate	-1.828	65	.072	-.3030	-.6342	.0281
Easy to hold Indian currency affects to determine the interest rate	-4.016	65	.000	-5.00	-.7487	-2513

Above table shows the clear picture of descriptive result for all the variables. The average mean show the results to Nepalese economic environment favorable (2.5904) disagree, political environment is favorable (1.7727) results shows very poor. Nepalese social environment (3.1970) shows slightly agreed. Open border affects to determine (2.6970) disagreed. Easy to hold Indian Currency affect (2.50) shows disagree.

4.3.2. Basis determinants factor of interest rate

The various factors are affected for the determinants of interest rate. These factors are presents in table and given opinion in descriptive statistics. For the research purpose, the research designed the various determinants factors to express the agreement or disagreement of the respondents. The respondents, view show the factors that have higher or lower implication in interest rate. The higher mean value (i.e. above the average level & more) indicates that those factors may be regarded as the basic determinants for interest rate and vice-versa.

Table no 4.20

Descriptive Statistics of determinants factor of interest rate

Variable	N	Minimum	Maximum	Mean	Std. deviation

Fair completion is needed to determine appropriate interest rate	66	2.00	6.00	4.1818	.90993
Depositors and lenders activities are the important factors to determine interest rate	66	1.00	6.00	4.7121	1.07796
Maturity period affects to determination of interest rate	66	4.00	6.00	44697	.72790
Investment climate affects to determine interest rate	66	3.00	6.00	5.1212	.93669
Tax rules of Nepal affects to the determine of interest rate in Nepalese commercial banks	66	1.00	6.00	3.1061	1.08314
Valid N (list wise)	66				

Sample test

Test value = 3						
	T	**Df**	**Sog.(2tailed)**	**Mean Difference**	**95% confidence interval of the difference**	
Fair competition is needed to determine appropriate interest rate	10.552	65	.000	1.1818	.9581	1.405
Depositors and lenders activities are the important factors to determine interest rate	12.903	65	.000	1.71121	1.4471	1.971
Maturity period affects to determination of interest rate	27.564	65	.000	2.4697	2.2908	2.656
Investment climate affects to determine interest rate	18.398	65	.000	2.1212	1.8909	2.355

Tax rules of Nepal affects to the determine of interest rate in Nepalese commercial banks	.796	65	.429	.1061	-.1602	.3723

Above table shows the clear picture of descriptive results of the entire variable. In the factors fair completion is the important factors (4.1818) average show the results agreed. Depositor and lender activities also another important factor (4.7121) agreed. The maturity period is most important factor (5.4697) agreed. Investment climate also affects to determinants (5.1212) agreed. Tax rules effects to determinants of interest rate (3.1061) slightly agreed.

4.3.3. Role of interest rate in Banking Sector for Investment Decision

The interest rate plays vital role for the extension of investment as well as the development and strength of the business. The researcher tried to know the role of interest rate viewing from the respondents designing four variables. The higher mean score shows that the interest rate may be played as the important role in this regard and vice-versa.

Table no 4.21

Descriptive statistics role of interest rate

Variable	N	Minimum	Maximum	Mean	Mean std. Deviation
Interest rate is prime factor for the competition of banking sectors	66	1.00	6.00	4.2121	1.04536
It is favorable to freely determine the interest rate for development of banking sector	66	3.00	6.00	6.0303	.72260

Regularly decline of interest is favorable to extend the investment	66	1.00	6.00	4.2727	1.34216
There is needed to minimize the interest rate to the extend of investment	66	3.00	6.00	4.8485	.63833
Valid N (list wise)	66				

Sample test

Test value = 3						
	T	**Df**	**Sig.(2tailed)**	**Mean Difference**	**95% confidence interval of the difference**	
					Lower	**Upper**
Interest rate is prime factor for the competition of banking sectors	9.420	65	.000	1.2121	.9551	1.4691
It is favorable to freely determine the interest rate for development of banking sector	22.826	65	.000	2.0303	1.8527	2.2079
Regularly decline of interest is favorable to extend the investment	7.704	65	.000	1.2727	.9428	1.6027
There is needed to minimize the interest rate to the extend of investment	23.526	65	.000	1.8485	1.6916	2.0054

Above table shows the clear picture of descriptive results of the entire variable. The in prime role of interest rate for banking sector (4.2121) opinion agreed. It is favorable to above table shows the clear picture of descriptive results of the entire variable. The n prime role of interest rate for banking sector (4.2121) opinion agreed. It is favorable to development of banking sector (5.030) agreed. Regularly

decline of interest rate attracts to investor so (4.2727) agreed to favorable to extend the investment. There is needed to minimize the interest rate for extend to the business.

4.3.4 Relation of Interest Rate with various Sectors

The researcher tried to show the relationship between interest rate with various factors with regard to view the positive or negative relationship. The positive relationship shows that they have high influence in this regard and vice-versa.

Table no 4.22

Descriptive Statistics relation of interest rate in various sectors.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
There is positive relationship between customer service cost and interest rate of banking sector	66	1.00	6.00	3.2121	1.35323
There is positive relationship between profit and interest rate of bank	66	1.00	6.00	3.9242	.98153
There is relationship between stock price an interest rate	66	1.00	6.00	4.945	1.28221
Rapidly increasing the price of goods effects to interest rate	66	1.00	6.00	3.2424	1.00859
Valid N (list wise)	66				

Above shows the clear picture of descriptive results of the entire variable. The interest rate shows the relationship between the other factors. The interest rate shows the relationship between the other factors. Slightly Positive relationship with customer service cost. The (3.2121) opinion agreed. Every

bank open for profit motive so there is positive relationship between profit and interest rate. The opinion (4.9545) agreed. There is positive relationship between stock price and interest rate. The opinion (4.545) agreed. Rapidly increasing the price of goods and interest relation slightly (3.2424) agreed.

4.3.5 NRB Role and interest rate

NRB is the center bank of Nepal all the commercial banks are controlling monitoring and guided through center bank.

Descriptive Statistics

Table no- 4.23

Descriptive analysis role of NRB

	N	Minimum	Maximum	Mean	Std. deviation
NRB must to play prime role and responsibility to determine interest rate	66	2.00	6.00	4.5606	1.02175
Valid N (list wise)	66				

NRB must play prime role and responsibility to determine interest rate

	Frequency	Percent	Valid percent	Cumulative percent
Disagree Moderately	4	6.1	6.1	6.1

Disagree Slightly	6	9.1	9.1	15.2
Agree Slightly	13	19.7	19.7	34.8
Agree Moderately	35	53.0	53.0	87.9
Agree Totally	8	12.1	12.1	100.0
Total	66	100.0	100.0	

The center bank plays the vital role for controlling the commercial bank. NRB must play prime role and responsibility for determinant interest rate. The 53% opinion agreed. Which is 4.5606 averages. Center bank opens for commercial bank to determinant interest rate in certain criteria.

4.3.6. Lending Interest Rate in Different Sector

The interest rate is one of the important factors of banking procedure. The different interest rates have charge for the different sectors in lending. The analysis shows the following statistics.

Table no 4.24

Descriptive Statistics of different interest rate in different sector

	N	**Minimum**	**Maximum**	**Mean**	**Std. deviation**
Different interest rates have to charge for the different sectors in lending.	66	1.00	6.00	4.8030	.80803

Valid N (list wise)	66				

Different interest rates have to charge for the different sectors in lending.

	Frequency	Percent	Valid percent	Cumulative percent
Disagree Totally	1	1.5	1.5	1.5
Disagree Slightly	3	4.5	4.5	6.1
Agree Slightly	10	15.2	15.2	21.2
Agree Moderately	45	68.2	68.2	89.4
Agree totally	7	10.6	10.6	100.0
Total	66	100.0	100.0	

Above table shows the clear picture of descriptive result of variable. The results *4.830) agreed. There is needed to differences of interest rate in different sector for lending.

4.4. Major findings of the study

Determinants of interest in Nepalese commercial bank, the subject matter is important in financial market. There are some objectives are presented for analysis. To identify the appropriate method and model of interest rate, calculation of trend and relationship various factor. Environmental factors are analysis through the primary research. The recommendation and suggestion attempts the major suggestion in this issued. There are some findings as follows.

- There is presentation some interest rate theory and models through the descriptive method. Most of the commercial banks used simple regular method. The main factors are risk, return, inflation and risk free rate.

- The trend of rate presents In figure, This figure shows the relationship between deposit rate, lending, inflation rate and risk-free rate. The figures how the trend of rats every year interest on deposit and lending rate decrease continuously and inflation rate and risk free rate shows up and down in different year the correlation analysis between the deposit rate and deposit amount, lending amount and lending rate show the result negative correlation ad others factors show the result between rates deposit rate and deposit amount and lending rate lending amount and lending rte, deposit rate and lending rate. T-value at 5% level of significance for 5 degree of freedom 2.44 is less than calculated value. Correlation coefficient is significant.
- The environmental factor analysis through the questioner method. The results presented through the SPSS program basis. Interest rate is affected by maturity period. Market competition is important factor in interest rate. Political instability and violence is bad for economic sector, it is affected the interest rate. Depositor and lender activity plays the vital role in determination in interest rate.
- The basic determinants factors are inflation rate, risk and return, and others. As then other factors also affected to determinants of interest rate investment climate, tax rules and regulation re-affected factors for determinants. The valuable opinions viewers are agree in factors.
- Interest rate is important factor for commercial bank. It plays the vital role in banking business environment. It plays prime role for banking competition. It is needed to regularly decline for extend the business. Most of the opinion is supported in this question.
- The relation of interest rate related in various sector. Interest rate affects customer service cost, profit, stock price, price of goods etc.
- NRB is one of the center bans of Nepal. NRB has major responsibility for control national economy. It plays the vital role and responsibility for commercial banks. All the commercial banks are controlled and monitoring through the NRB bank.
- Commercial banks apply the different rate for lending in different sector. It helps to develop in various sectors. The respondent also agreed in segregate interest rate.

CHAPTER – V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary

Nepal is a beautiful landlocked country. Nepalese people largely depend on agriculture sector. National GDP of the country is also contributed largely by agriculture sector. Nepal is rich in natural resources but the resources remain under utilized till date. Lack of finance, which is very important for the development of the nation, is a major hurdle in the utilization of the resources. Nepal, being an under developed country largely depends on foreign aid and loan. Nepalese financial marketers help to generate the required bank fund and mobilization. Nepal Bank ltd. is one of the first banks in Nepal established in 1994 B.S. as a joint venture between government and private sector. In Nepal currently there are 28 commercial banks, 63 development banks, 77 finance companies, 15 micro credit development bank, 16 saving and credit cooperation and 45 NGOS (performing Limited banking activities). They perform all kind of banking transactions by accepting deposits, advancing loans, credit creation and other agency functions. They provide short term, medium term and long term loans. In 1980 government introduced financial sector reforms that encouraged the establishment of joint venture banks. The total assets of commercial bank are Rs.888878.8 million. The commercial bank loan and advanced is (77.8%) Rs.611762.8 million.

Interest is the cost of money and it is medium of collecting and lending money respectively. Interest rate plays a vital role in banking sector. Commercial banks and financial institutions can determine the interest rate as per their own strategy. They calculate interest rate as per risk, banking cost Environmental factors etc.

The important issues in this thesis are factors affecting the determination of the interest rate in commercial banks. How to calculate the interest rate is the major issue of the research focused to the investment decision of some modern commercial banks. They are gaining public popularity too. The study fulfills the objective of qualitative and quantitative factors of interest rate and banking competition through interest rate. Methods of calculating interest rate activity of depositor and lenders.

Identifying the effects of inflation risk and relation and environmental factors determining the interest rate to find out the overall performance and factors affecting the rate of interest. The study introduction of statement of problem, research hypothesis limitation of the study plan is also the components of first chapter.

Review of literature is an essential part of all studies. It is the way to discover what other researchers have concern and left in the area. A critical review of literature helps the researches to develop a thorough understanding and an insight into previous research work that relates to the present study. This chapter introduces the meaning of commercial bank which accepts different types of deposits and invests in various sectors. They accept the deposit; provide the loan, performs agency function and general utility function.

Interest is the cost of money, which is a very important factor. In financial world, it is the price paid for the use of loan able funds. There are different theories on interest rate. The classical theories of interest emphasis saving and interest demand are interest rate determining forces. The liquidity preference theory points to demand and supply of cash balance. The modern theory of interest .Profs.Hicus and Hansin have opened that there is only difference in the concept of saving between the classical and the loan able funds. The modern theory often has been made to mix both the real fund and the monetary factors.

The interest rate is affected by the inflation rate, economic budget deficit and money demand and supply. Specific risk and cost factors affecting interest rate on debt security are marketability, liquidity default risk taxability, servicing cost exchange rate risk and environmental and political resources.

Research design is a plan structure and strategy of investigation. In this study plan, to study through the secondary and primary data, collection on population and sample from all the 28 commercial bank, 6 banks are chosen in the sample. The secondary data collection from publication and primary data collection from questionnaire collected are presented in table and graphs and analyzed using various statistical tools line mean, correlation coefficient and statistics coefficient of determination. The study mainly forecasted to find out the factors of determination of the interest rate in various ways.

5.2 Conclusion

The Conclusion is the finding of the study .This study is focused in finding out the presented objectives.

Through the methods and techniques, first of all we can define the conclusion from the presented data.

Conclusion from Secondary Data Analysis

The secondary data has been presented to show the effects of inflation rate and risk and relation in interest rate through the related variables and also to study different rates correlation in the activities of deposit and lending amount and rates.

1. **Bank deposit rate and lending rate :-**

   The bank deposit and interest rate have negative correlation. When supply of the loan able fund (Supply of deposit) increases interest rate decreases. In general concept, interest rate on deposit should be positively correlated; meaning that higher rate attracts more deposit, but we have assured that interest rate is depended factor which is determined by supply of loan able funds. The coefficient of determination expresses the total variance of interest rate on deposit and 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 correlation is significant in all samples. This means they are significantly correlated and an increase/decrease in the amount of deposit brings a decrement (increment) in interest rate on deposit.

2. **Interest rate on deposit and lending rate:-**

   The interest rate on deposit and lending rate are positive correlated. The determination variance effects between the factors. Always the lending rate is high then deposit rate; the t-statistics of correlation is significant.

3. Loan and advance amount and lending rate:-

The correlation coefficient between two variables tells that more loans are demanded of lower rate is demanded on interest rate. The determination of variance in interest rate on lending and remaining is the effects of other factors.

4. Interest rate on deposit and inflation rate:-

Two variables are positively correlated; an increment in inflation brings increment in interest rate on deposit vice-versa. The inflation rate affects the interest rate. The coefficient of determination explain total variance in dependent and independent variables T- value of for testing the significance of correlation coefficient is less than the tabulated T-value for the 5 degree of freedom at 5% level of significance 2.44.The calculated value are less that table value the correlation coefficient is not significant.

5. Deposit rate and risk free rate:-

Deposit rate and risk free rate are positive correlation but coefficient is small. These affect the risk free rate. The determination explained of total variance in dependent and independent variables and they are affected. The T-value for testing the significance correlation co efficiency calculated value which is significantly similar value tabulated value for 5 degree of freedom at 5% level of significance 2.44 from this it is regulated that interest rate on deposit is not significantly correlated with the risk free rate doesn't affect interest rate on deposit of samples significantly.

6. Interest rates on lending and inflation rate:-

Interest rate on lending and inflation rate is positive correlated. The determination of two variables explained. Variance and due to affect each other factors. The T-value for testing the significance of correlation calculated value is sincere than the tabulated T-value for degree of freedom at 5% level of significance 2.44 the variables are not correlated significantly. This means that lending rate of sample banks aren't significantly correlated with the inflation rate.

7. Interest rate on lending and risk free rate.

The correlation coefficient between interest rate on lending and risk free rate are correlated. The determination coefficient between two variables defines the variance and explains the effects of the other factors the T-value for testing the significance of the correlation sample are the calculated T-value which is similar then table value at 5% level of significance for the 5% degree of freedom 2.44 the correlation coefficient is not significant, this mean that interest rate on lending of sample bank are not significantly affected by the risk free rate.

8. Two examine the multiple correlation coefficient has also completed. The multiple correlation coefficient take in one sample dependent and other two independent, it shows that variables are affected each other factors.

Conclusions from Primary research

The conclusions show the primary research depends on public opinion collection through questionnaire method. They agreed and disagreed in different options.

- There are 66 respondents between 20 -59 years age group. They work in different fields with qualification in different sectors. Academician, bankers, government service holder, and business man etc. with 1 – 15 years working experience the respondent level is assistant to director level. Male and female both are involved in study. There are more than respondent are related in issued sector.
- There is 20 leading question presented with six option, three disagree option and three agree option in the total question 15 question result is agree and five question result is disagree. This question divided in various group.
- The environmental group respondents are disagreed in option. The results show there it's not a favorable environment for determination of interest rate. Political environment affected the business climate. The risk factor is high and not a sure good return. So environmental is not favorable to determinants in interest rate.

- ❖ The basic determinants factors are inflation rate, risk and others. As then other factors also affected to determinants of interest rate. Fair competition depositor and lender activities maturity period, investment climate, tax rules and regulation are affected factors of determinants. The valuable opinions are agreed in factors.
- ❖ Interest rate is important factor for commercial bank. It plays the vital role in banking business environment. It plays prime role for banking competition. It is needed to regularly decline for extended for extend the business.
- ❖ The relation of interest rate related in various sectors. Interest rate affects customer service cost, profit, stock price, price of goods.etc.
- ❖ NRB is one of the center banks of Nepal.NRB has major responsibility for controlling national economy. It plays the vital role and responsibility for commercial banks. All the commercial banks are controlled and monitoring through the NRB bank.
- ❖ Commercial banks apply the different rate for lending in different sector. It helps to develop in various sectors. The respondent also agreed in segregate interest rate.

5.3 Recommendations

Under development Nepal has economically exercising in slowly in context of world. The technology and tools and education open the brain of peoples and they are come to concern in the new world. Most of the people are unknown above the lot of things due to lack of education, communication, techniques and technology. In the sense of people are make strong and active in latest communicative world to development in various economically, socially etc.

- ❖ The national economy plays the vital role in development of every sector for that saving and lending is most necessary factor. It helps to mobilize the capital interest rate is the fundamental component to mobilize the capital so it must be optimum level.
- ❖ There is needed to extend the investment climate, which helps to the extension of service and market for the investment to the Nepalese commercial banks.
- ❖ Autonomy to determine the interest rate is essential to develop the economic growth. This helps to determine the optimal interest rate during the changing environment.

- The interest rate is one of the basic components collecting the fund and lending to business sector.It is needed to minimize to extend the business environment.
- The role of NRB is to strengthened to monitor the banking sectors, which helps to maintain and implement the rules and regulation in proper form.
- Government should make the strong policy for development of economy and implementation to develop the nation.
- Suitable interest rate motive to depositor and lenders, so suitable interest rate helps to increase the depositor and lenders so interest rate must be flexible on the basis of development reason. This can be success after the establishment of favorable investment element and ruled by law and order.
- Most of the Nepalese are unable to banking procedure lack of sufficient banks and reign so it must be needed to extend the branch office in Nepal.
- Political economic environment must be improved for development of banking sector.
- Strength and stable government is needed for long term vision and implementation of plan and economic program.
- It is needed to publish interest rate in National News paper daily. This information helps to attract general people to businessman and other concern persons.

Interest rate is the hot topic for study and it is important subject in Nepal. There is needed to study in more than researcher in this topic. Lack of some limitation this study is concern with fulfilling objectives but we suggest the all to other researcher are interested to research in this topic in various angle.

Appendix- 1

Standard Chartered Bank Ltd.

Correlation Analysis

1.Deposit amount and interest rate on deposit (ab)

Correlations

		VAR00001	VAR00002
VAR00001	Pearson Correlation	1	-0.934
	Sig (2-tailed)	.	0.001
	N	8	8
VAR00002	Pearson Correlation	-0.934	1
	Sig (2-tailed)	0.001	.
	N	8	8

**Correlation is significant at the .01 level (2-tailed)

2.Deposit interest rate and lending rate (bd)

Correlations

		VAR00002	VAR00004
VAR00002	Pearson Correlation	1	0.968
	Sig (2-tailed)	.	0
	N	8	8
VAR00004	Pearson Correlation	0.968	1
	Sig (2-tailed)	0	.
	N	8	8

**Correlation is significant at the .01 level (2-tailed)

3.Lending amount and lending rate (cd)

Correlations

		VAR00004	VAR00003
VAR00004	Pearson Correlation	1	-0.904
	Sig (2-tailed)	.	0.002
	N	8	8
VAR00003	Pearson Correlation	-1.808	1
	Sig (2-tailed)	0.002	.
	N	8	8

**Correlation is significant at the .01 level (2-tailed)

4.Interest rate on deposit and inflation rate (rbe)

Correlations

		VAR00002	VAR00005
VAR00002	Pearson Correlation	1	0.609
	Sig (2-tailed)	.	0.109
	N	8	8
VAR00005	Pearson Correlation	0.609	1
	Sig (2-tailed)	0.109	.
	N	8	8

**Correlation is significant at the .01 level (2-tailed)

5.Interest rate on deposit and risk free rate (rbf)

Correlations

		VAR00002	VAR00006
VAR00002	Pearson Correlation	1	0.183
	Sig (2-tailed)	.	0.665
	N	8	8
VAR00006	Pearson Correlation	0.183	1
	Sig (2-tailed)	0.665	.
	N	8	8

6.Interest rate in lending and inflation rate (rde)

Correlations

		VAR00004	VAR00005
VAR00004	Pearson Correlation	1	0.552
	Sig (2-tailed)	.	0.156
	N	8	8
VAR00005	Pearson Correlation	0.552	1
	Sig (2-tailed)	0.156	.
	N	8	8

7.Interest rate in lending and risk free rate (rdf)

Correlations

		VAR00004	VAR00006
VAR00004	Pearson Correlation	1	0.202
	Sig (2-tailed)	.	0.631
	N	8	8
VAR00006	Pearson Correlation	0.202	1
	Sig (2-tailed)	0.631	.
	N	8	8

Appendix-2

T-Statistics

1. Lending Amount and Lending Rate

$$Rcd = \frac{rcd}{1-rcd^2} \times \sqrt{x-2}$$

$$= \frac{-0.904}{\sqrt{1-0.8172}} \times \sqrt{8-2}$$

$$= \frac{-0.904}{\sqrt{0.4275}} \times 2.4494$$

$$= 5.1795$$

2. Deposit rate and inflation rate

$$Rcd = \frac{rbe}{1-rbe^2} \times \sqrt{x-2}$$

$$= \frac{0.609}{\sqrt{1-0.3708}} \times 2.4494$$

$$= \frac{0.609}{\sqrt{0.6292}} \times 2.4494$$

$$= \frac{0.609}{0.7932} \times 2.4494$$

$$= \frac{1.4916}{0.7932}$$

$$= 1.88$$

3. Deposit rate and risk free rate

$$Rbf = \frac{rbf}{1-rbf^2} \times \sqrt{x-2}$$

$$= \frac{0.202}{\sqrt{1-0.033}} \times \sqrt{8-2}$$

$$= \frac{0.202}{\sqrt{0.9797}} \times 2.4494$$

$$= \frac{0.4947}{0.9833}$$

$$= 0.5039$$

4. Lending rate and inflation Rate

$$Rde = \frac{rde}{1-rde^2} \times \sqrt{x-2}$$

$$= \frac{0.552}{\sqrt{1-0.304}} \times \sqrt{8-2}$$

$$= \frac{0.552}{\sqrt{0.8342}} \times 2.4494$$

$$= 1.620$$

5. Lending rate and risk free Rate

$$Rdf = \frac{rdf}{1-rdf^2} \times \sqrt{x-2}$$

$$= \frac{0.202}{\sqrt{1-0.040}} \times \sqrt{8-2}$$

$$= \frac{0.202}{\sqrt{0.9797}} \times 2.4494$$

$$= 0.5050$$

Appendix-3

Determination and Multiple Determinations

1) $Rb.ad = \sqrt{\dfrac{r^2ab + rbd^2 - 2rab\ rbd\ rab}{1-rad^2}}$

$= \sqrt{\dfrac{0.8723 + 0.9370 - 2x - 0.934 \times 0.968 \times -0.957}{1-0.9158}}$

$= \sqrt{\dfrac{1.8093-1.7304}{1-0.9158}}$

$= \sqrt{\dfrac{0.0789}{0.0842}}$

$= 0.9680$

$R^2bad = (Rb.ad)^2$

$= (0.9680)^2$

$= 0.930$

2) $Rd.bc = \sqrt{\dfrac{r^2ab + rdc^2 - 2rdb\ rdc\ rbc}{1-rbc^2}}$

$= \sqrt{\dfrac{0.9370+0.8172 - 2x0.968 \times -0.904 \times -0.862}{1-0.7430}}$

$= \sqrt{\dfrac{1.7542-1.5086}{0.257}}$

$$= \sqrt{\frac{0.2456}{0.257}}$$

$$= 0.9556$$

$R^2dbc = (Rd.bc)^2$

$= (0.9556)^2$

$= 0.9131$

3) $Rb.ef = \sqrt{\frac{r^2be + rbf^2 - 2rbe\ rbf\ ref}{1-rbc^2}}$

$$= \sqrt{\frac{0.304+0.033 - 2\times0.609\times0.183\times -0.647}{1-0.4186}}$$

$$= \sqrt{\frac{0.337 +0.1442}{0.5813}}$$

$$= \sqrt{\frac{0.4812}{0.5813}}$$

$$= 0.998$$

$R^2bef = (Rb.ef)^2$

$= (0.998)^2$

$= 0.8277$

4) $Rd.ef = \sqrt{\dfrac{r^2de + rdf^2 - 2rde\ rdf\ ref}{1-ref^2}}$

$= \sqrt{\dfrac{0.304+0.040- 2\times0.552\times0.202\times -0.647}{1-0.4186}}$

$= \sqrt{\dfrac{0.48828}{0.5813}}$

$= 0.9165$

$R^2def = (Rd.ef)^2$

$= (0.9165)^2$

$= 0.8399$

Appendix-4

Questionnaire for primary data analysis

Dear All,

The Purpose of this study is to access the performance of interest rate. The information supplied will be used only for the study purpose and high level of secrecy will be strongly maintained. Please read the following statement and circle at the appropriate number that comes to your opinion.		**Strongly Disagree**	**Disagree**	**Slightly Disagree**	**Slightly Agree**	**Agree**	**Strogly Agree**
1	Depositors and lenders activities are the important factors to determine interest rate	1	2	3	4	5	6
2	NRB must play a prime role and responsibility to determine the interest rate	1	2	3	4	5	6
3	Interest rate is prime factor for the competition of banking sector	1	2	3	4	5	6
4	Investment climate effects determination of interest rate	1	2	3	4	5	6
5	Fair competition is needed to determine appropriate interest rate	1	2	3	4	5	6
6	It is favorable to freely determine the interest rate for development of banking sector	1	2	3	4	5	6
7	Nepalese economic environment is favorable to determine interest rate	1	2	3	4	5	6
8	Nepalese political environment is favorable to determine interest rate	1	2	3	4	5	6
9	Regularly decline of interest rate is favorable to extend the Investment	1	2	3	4	5	6
10	Nepalese social environment affects to determine interest rate	1	2	3	4	5	6
11	There is positive relationship between customer service cost and interest rate of the banking sector	1	2	3	4	5	6

12	There is need to minimize the interest rate for increase in investment	1	2	3	4	5	6
13	There is positive relationship between profit and interest rate of bank	1	2	3	4	5	6
14	Maturity period affects to determine of interest rate	1	2	3	4	5	6
15	Different interest rates have to be charged for the different sectors of lending	1	2	3	4	5	6
16	Open border of the Nepal affects the determination of interest rate	1	2	3	4	5	6
17	Easy to hold Indian currency affects the determination of interest rate	1	2	3	4	5	6
18	Rapid increase in the price of goods affects the interest rate	1	2	3	4	5	6
19	There is relation between stock price and interest rate	1	2	3	4	5	6
20	Tax rules of Nepal effects the determination of interest rate in Nepalese Commercial banks	1	2	3	4	5	6

Rooplata Sethia

Details of Respondents:

Age: Sex:

Profession: Professional Experience (in years):

Level of Education: