

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the study**

Nepal is a small landlocked, south Asian country which is in slow development phase. It is an example of poor country though between with rich natural resources. The lack of capital and technical knowhow has become a major barrier that has led those resources being unutilized. The pace of economic development of Nepal is still in infant stage. Its economic condition is characterized by the declining interest rate, high inflation and slow growth in per capital income, low income, low savings and low investment along with very low growth rate.

The economic development of Nepal is still in initial stage. For the economic growth and development, government has now initiated various economic policies such as industrial policy, foreign investment policy, privatization policy and trade and transits policy with the implicit objective to help the initial stage and the private sector.

After restoration of democracy in 2046 BS and liberalization policy adopted by government many commercial banks, development banks and finance companies emerged to provide banking facilities to the people. These institutions collect deposits from general public providing certain rate of interest and advances loans to different needy persons or business houses charges higher interest rate. In this way such financial institutions makes profit and profit is essential for the survival of growth.

The Nepalese financial sector is composed of banking and non banking sector. Banking sector comprises Nepal Rastra Bank (NRB) and commercial banks. The non banking sector includes development banks, micro-credit development banks, finance companies, co-operatives financial institution, non-government organizations (NGOs) performing limited banking activities. Other financial institution comprises of insurance

companies, employee's provided fund, citizen investment fund, postal saving offices and Nepal stock exchange.

The incorporation of Nepal Bank Limited (NBL) in 1937 was the turning point of modern financial system of Nepal. It was established under the Nepal Rastra Bank Act 1937. Prior to this, the Tejarath Adda, which was established in 1980, used to disburse credit to people. It used to render commercial banking services such as acceptance of deposits, delivery of credit facilities and other commercial banking services.

Nepal Bank Limited remained the only financial institution in Nepal until Nepal Rastra Bank, the central Bank of Nepal, was established in 1956 under the Nepal Rastra Bank Act 1955. The second commercial bank, Rastriya Banijya Bank, was established in 1996 as per the Rastriya Banijaya Bank Act, 1966 under the full ownership of the government the main objective as establishing the second commercial bank was to supplement the banking services to the growing economy.

There is tremendous growth in the number of financial institution in Nepal in the last two decades. At the beginning of the 1980, when financial sector was not liberalized, there were only two commercial banks and two development banks performing banking activities in Nepal. There were no micro credit development banks.

After the liberalization of the financial sector, financial sector has made a hall-mark progress both in terms of the number of financial institutions and beneficiaries of financial services. By mid-July 2009, NRB licensed bank and non-bank financial institutions totaled 175 out of them, 26 are commercial banks, 59 development banks, 78 finance companies, 12 micro- credit development banks.

### 1.1.1 Brief introduction about interest rate

Interest is a payment for the use of money. So when savers deposit their savings in banks that time bank pays certain amount of interest on saving amount because of used this money to lend other customers. The interest rate is the price charged a borrower for the loan of money. This price is unique because it is a price of credit but unlike other prices in the economy the rate of interest is really a ratio of a two quantities: the total required fee a borrower must pay a lender to obtain the use of credit for a stipulated period divided by the amount of credit actually made available to the borrower.<sup>1</sup>

Interest is also payment for uses of money people must pay interest in borrow money. Banks and financial institutions pay interest for borrowed money and they also charged interest to lender for investment amount. Interest bearing is the cost at used lending money. Interest rate is a medium of collecting find lending money. It is the cost of holding period at a specific time. It is also called compensation for the used of borrowed funds.

Interest rate is one vital tool for shaping economy. It plays important rate in borrowing and lending. Generally the rate of interest is really a ratio of two qualities the money cost of borrowing divided by the amount of money actually borrowed, usually expressed on an annual percentage basis. The cost of borrowing money measured in rupee per year per rupee borrowed is the interest rate.<sup>2</sup> When we examine how money affects economic activity, we will focus and the interest rate, which is often called the price of money. Interest is rent paid for the use of money. In other words people must pay for opportunity to borrow money financial institutions as financial intermediaries collect money from savers in the form of deposit and provide that for business sector in the form of loan. These institution pay the interest to the depositors for the money borrowed from them and charge interest from the borrower for money lend to them. As any price is determine, theoretically, by the interplay of demand and supply in a market economy, the price of more the interest rate plays vital role in the allocation resources and in the decision making of consumers and businesses.

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<sup>1</sup> Rose peter, S (1997) "Money and capital Markets", Irwin /McGraw Hill. P. 193

<sup>2</sup> Samuelson, Paul A, & Nordhus, William D. "Economics" sixteen edition, Tata McGraw Hill publishing company limited, New Delhi, P. 469

An appropriate interest rate structure affects the deposit and lending of any financial institutions, which in turn affects the economic upliftment of the whole country. The impact of interest rate is a both the saving and investment in the economy. Interest rate sends price signals to borrowers, lenders, savers and investors, higher rate generally brings for the greatest volume of savings and stimulates the lending of fund lower rate of interest on the other hand tends to dampen the flow of savings and reduce lending activity. Higher interest tends to reduce the volume of borrowing and capital investment and lower interest rate stimulate borrowing and investment spending.<sup>3</sup>

As a financial intermediary commercial banks and finance companies as well as government should taken concern about interest rate so that idle saving can be utilized for investment in productive sectors of the economy, employment, income, as well as whole economy may raised.

Interest rate in the free market economy is determined by the free interplay of the demand and supply forces. Although interest rate is influenced by various factors the main factors which determine the interest rate are demand and supply of lovable fund. If supply increases and demand remains constant, interest rates in the market decrease. Similarly if demand for lonable fund increases and supply remain constant, interest rates in the market increase. But Nepalese economy has not developed up to that level so that free market can determine the interest rates. Nepal Rastra Bank as a guardian, fixes the terms had conditions regarding the interest and other activities of financial institutions in Nepal. But recent years banks are permitted to fix the interest rate they charge and offer on loan and deposits.

### **1.1.2 Brief Introduction Joint venture Bank**

Joint Venture Banks are partnering having alliance Banks with more than one nation. Joint Venture Bank (JVB) is financial intermediaries, financing deficit units with money deposited with them by surplus units. The financial system of a banking industry

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<sup>3</sup> Rose peter , S (1997) "Money and Capital Markets, Financial Institution and Instrumental in a Global market place",6th edition, Irwin, Chicago

in precise is a complex network embracing payments mechanisms and the borrowing and lending of funds. Though they have other important functions, the key role played by these banks in the system is to act of their needs to those wishing to borrow.

One of the pre-requisite for the economic development process is the existing of a sound and healthy financial system, with high level of operating efficiency. The operating efficiency is monthly tested by their ability to mobilize savings and its deployment for production purposes. After the onset of economic liberalization process, there has been visible expansion in the financial system of Nepal. In this connection, Nepalese economy has witnessed several changes in the financial systems as a result of which several JVBs evolved in the last decade.

Joint venture Banks were established to invite foreign investment and modern technologies to provide financial services to the target market in the kingdom of Nepal government policy of economic liberalization has opened its doors to private foreign investments in conjunction with Nepalese investors. This has intensified the competition which has ultimately affected the profitability of the banks. Hence to become successful in moving ahead with to become the most preferred supplier of financial services to the target market and to become noted for their professionalism of its management and staff, to gain their position as the leading bank in the provision of their financial performance and to be able to provide stable and consistent return to their share holders.

Therefore to meet the objectives of the JVBs, they are concentrating in their thrust areas Viz, Corporate Banking, Retail and Private Banking, Investment Banking, Credit cards and Technology and at the same time they must maintain their asset quality by keeping intact the lending standards.

The role and importance of joint venture banking system is extremely enhanced in the prevailing Nepalese economy due to the indispensable functions played by them as a result of which, they have managed to perform in a significant way by gaining their position as the leading banks.

The management of these JVBs is mainly held by foreign banks due to which they enjoy some of the competitive advantageous factors like electronic banking services, scientific credit evaluation, worldwide fund transfer systems, credit cards, tele-banking automatic teller machines and fully computerized banking networks with highly skilled personnel, advanced management skills and international chain of branches.

Hence they have been able to perform satisfactorily through service excellence and customer satisfaction, thereby earning a stable and consistent return to their shareholders. The main objective of joint venture bank is to mobilize ideal resources for productive use after collecting them from different sources. Its role in economic development is so immense it brings about greater mobility of resources to meet the emerging necessity of the economy. The essence of joint venture bank is the financial intermediate between the ultimate savers and borrowers. There are altogether six joint venture banks named as:

- a. NABIL Bank Ltd.
- b. Himalayan Bank Ltd.
- c. Everest Bank Ltd.
- d. Nepal Bangladesh Bank Ltd.
- e. Nepal State Bank Ltd.
- f. Standard Chartered Bank Ltd.

In Nepal, to encourage joint venture in banking sector three major reforms were carried out in 1980 AD. The reforms include allowing the foreign to control an interest to operate as joint venture, lifting the control on interest rate and introduction of auctioning of government securities. The government policy of allowing foreign JVB to operate in Nepal is basically to encourage local traditionally run commercial banks to enhance their banking capacity through competition, efficiency, modernization, mechanization, computerization and prompt customer services.

Joint venture banks are registered in Nepal under the company act 2021 BS and operated under the Commercial Bank Act 2031. They have joint venture between Nepalese investors and their parent banks. The domestic portion of investment has been shared by financial and non financial institutions as well as private investors.

All the Nepalese joint venture banks and operated under the rules, regulation and guidance of Nepal Rastra Bank.

**Table 1-1**

**List of licensed joint venture banks Mid-July 2008**

<b>Joint Venture Banks</b>	<b>Operating Date</b>	<b>Head Office</b>	<b>Telephone</b>	<b>Fax</b>
NABIL Bank Ltd	1984/7/16	Kantipath Ktm	4429546	4429548
Standard Chartered Bank Ltd	1987/1/30	Naya Baneshwor Ktm	4781469	4780762
Himalayan Bank Ltd	1993/1/18	Thamel Ktm	4227749	4222800
Nepal Bangladesh Bank Ltd	1993/6/07	Naya Baneshwor Ktm	4738972	4780106
Nepal SBI Bank Ltd	1993/7/07	Hattisar Ktm	4435516	4435612
Everest Bank Ltd	1994/10/18	Lazimpat Ktm	4443377	444316

### 1.1.3 Interest Rate Structure in Nepal

**Table 1-2 Structure of Interest Rates (Annual Percentage)**

	Mid-July			
	2005	2006	2007	2008
<b>Nepal Rastra Bank</b>				
<b>Bank Rate</b>	5.5	6.25	6.25	6.25
<b>Refinance Rates</b>	2.0-3.5	2.0-3.5	1.5-3.5	1.5-3.5
<b>Government Securities</b>				
<b>Treasury Bills (91 days)</b>	3.94	3.25	2.77	5.13
<b>National Saving Certificate</b>	6.5-13.0	6.5-8.5	6.0-8.5	6.0-7.5
<b>Development Bonds</b>	3.0-8.0	3.0-8.0	3.0-6.75	5.0-8.0
<b>Interbank Rate</b>	4.71	2.13	3.03	3.61
<b>Commercial Banks</b>				
<b>Deposit Rates</b>				
<b>Savings Deposits</b>	1.75-5.0	2.0-5.0	2.0-5.0	2.0-6.50
<b>Time deposits</b>				
<b>1. Month</b>	1.75-3.5	1.5-3.5	1.5-3.5	1.5-3.75
<b>3. months</b>	1.5-4.0	1.5-4.0	1.5-4.0	1.5-6.75
<b>6 Months</b>	2.5-4.5	1.75-4.5	1.75-4.5	1.75-6.75
<b>1 Year</b>	2.25-5.0	2.25-5.0	2.25-5.0	2.5-6
<b>2 Years and Above</b>	2.5-6.05	2.5-6.4	2.5-5.5	2.75-6.75
<b>Lending Rates</b>				
<b>Industry</b>	8.25-13.5	8.0-13.5	8.0-13.5	7.0-13.0
<b>Agriculture</b>	10.0-13.5-0	9.5-13.0	9.5-13.0	9.5-12.0
<b>Export Bills</b>	4.0-12.0	5.0-11.5	5.0-11.5	5.0-11.5
<b>Commercial Loans</b>	8.0-14.0	8.0-14.0	8.0-14.0	8.0-13.5
<b>Overdrafts</b>	5.0-14.5	6.5-13.5	6.0-14.5	6.5-13.5
<b>Cash Reserve Ratio (CRR)</b>				
<b>With NRB</b>	5.0	5.0	5.0	5.0
<b>Cash in Vault</b>	-	-	-	-
Sources: Macro economics indicators of Nepal, NRB, Research Department, Statistics Division, January 2008.				

According to the structure of interest rate in presented in table 1-2 deposit rates are increasing during the period 2005 to 2008 mid July. This may be due to the increase in the interest rate on government securities i.e. treasury bills. According to table the interest rate of T-bills however has been decreased from 3.94% to 3.25% in period of 2005 to 2006 and again decreased from 3.25% to 2.77% in period of 2006-2007. there is significant increment 2.77% to 5.13% in period of 2007-2008. As per principle, interest



rate Ti-bills are the bases of all interest rate many interest rates. So decline in interest rate may leads to decline in interest of others and vice-versa. The interest rate of national saving certificate has been decreased from 6.5% -13% to 6. % -7.5 %. Similarly the interest rate of development bond is increased from 3.80% - 8.0% to 5.0% - 8.0% over four year periods.

The interbank interest rate was 4.71% on 2005 Mid July but it decreased to 2.13% when it came during the mid July of 2006. Again sane is increased up to 3.61% at end of Mid July 2008 It seems that Nepalese commercial banks have excise fluctuation on liquidity. The most of commercial bank classified their deposits into two sections saving deposit and time deposits and offered the different interest rates or them. Talking about saving deposit the interest rates ranges from 1.75%-5.0% in the year 2005 but this rate increased to ranges 2.0%-6.5% when it came to the year of 2008.

In the same way, the interest rate on time deposits also shows the changing trend. In Nepalese economy, time deposits are classified in five categories: 1 month, 3 months, 6 months, 1 year, 2 years and above. In one month time deposits interest rate, the table shows the decreasing in interest, the maximum interest rate ranges was 1.75 to 3.5% in 2005 where as this table has been increased to 1.5% to 3.75% in 2008. For 3 months time deposit rates, the maximum interest rate was 1.5 to 4.0% in 2005. Whereas this rate reached to the range of 1.5% to 6.75% in 2008. Similarly the 6 months time deposit rates also increased up to1.75% to6.75% till 2008. In case of 1 year rate the is constant in 2005,206,2007 and increased up to maximum range of 2.5% to6.0% in 2008 . At last 2 years and above interest rate has been increased from 2.5% -6.05% to 2.75% - 6.75%.

For lending the table shows that average interest rate had fell during the 4 years period. But in case of lending there was wide range in maximum and minimum range. The range or spread of maximum rate and minimum rate was low in case of deposit. The lending rate is categorized in five parts: industry, agriculture, export bills, commercial loans and overdrafts. Among the entire highest rate was for over drafts. It shows the average of industrial sector lending rate was 10.875%, 10.75%, 10.75% and 10% respectively on past four years. It shows that an past four years that interest rate of industry was around 10% on average. Similarly for agriculture sector the average interest

rate was 11.75%, 11.25%, 11.25% and 10.75% respectively on past four years. This shows that agriculture lending rate was cheaper when it reaches to 2008. For export bills that average rate was 8%, 8.25%, 8.25% and 8.25% respectively for four years. For commercial loans the average lending rate was 11%, 11%, 11% and 10.75% respectively and finally for overdrafts it was 9.75%, 10%, 10.25% and 10% respectively on past four years.

#### **1.1.4 Brief profile of sample banks under study**

In this section general introduction of sample banks under study is being given, so as to furnish easy reference of samples and to do research smoothly. This is supposed to be useful in the proper understanding of research work and its inferences in the whole sum concept. Although 26 commercial banks are actively working in the nation out of them 26 commercial banks only 6 of them are joint venture banks. All joint venture banks are taken as samples the sample banks are as follows.

- i) NABIL Bank Ltd
- ii) Himalayan Bank Ltd.
- iii) Everest Bank Ltd.
- iv) Nepal Bangladesh Bank Ltd.
- v) Nepal State Bank Ltd.
- vi) Standard Chartered Bank Ltd.

##### **a) NABIL Bank Limited**

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

Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history

of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business.

**Table 1-3: The ownership of NABIL is composed as:**

Subscription	% holding
N.B. international limited, Bangladesh Nepal	50.00%
Industrial Development Corporation Nepal	6.15%
Stock Exchange Limited	0.33%
Rastriya Beema Sansthan	9.67%
Nepalese General Public	33.26%
	0.59%
Total	100%

**Source: Annual Report of NABIL 2008/09**

**Table 1-4: The present capital structure of NABIL is shown below:**

Share structure	Amount(RS)
Authorized capital( 16,000,000 shares@ 100)	1,600,000,000
Issued capital(49 16544 shares@100)	96,574,7000
Paid up capital(49 16544 shares @100)	96,5747,000

**Source: Annual Report of NABIL 2008/09**

**b) Himalayan Bank Limited (HBL)**

Himalayan Bank is a joint venture with Habib bank of Pakistan. It started its operation in 2049B.S with paid up capital of Rs.60million. This is the first joint venture bank managed by Nepali chief executive. The operation of the bank started from 1993 Feb. Himalayan Bank Ltd does not include government ownership. It has been established to maintain the economic welfare of the general people to facilitate loan for agriculture, industry and commerce to provide the banking services to the country and people. It is the first commercial bank of Nepal with maximum share holding by the Nepalese private sector. Besides commercial activities, the bank also offers industrial and merchant banking. HBL has been operating in high profit for the establishment's period till now. The bank has 25 branches, 10 in Kathmandu valley and 16 in outside the valley. The bank has aimed install more Automated Teller Machines (ATM) and improve its credit card business. HBL is providing any branch banking services from some of its branches. The Himalayan Bank is the only bank in Nepal which issuing Master cards.

The bank has a very aggressive plan of establishing more branches in different parts of the nation in near future. HBL was access to the world wide correspondent net work of Habib bank for fund transfer, letter of credit or any other banking business anywhere in the world .Himalayan Bank has adopting innovative and latest banking technology. The bank provides various services and facilities such as:

- Tele-Banking
- 24 hours banking
- Credit card facilities
- Automated Teller Machine(ATM)
- Visa card
- Letter of credit services
- Safe deposit locker
- Short Message Service(Himalayan SMS)
- Foreign currency transaction etc.

**Table 1-5: The ownership of HBL is composed as:**

Subscription	% holding
Promoter Share Holders	51%
Habib Bank Ltd Pakistan	20%
Employee's Provident Fund	14%
Nepalese Public Shareholder	15%
Total	100%

**Source: Annual Report of HBL.2008/09**

**Table 1-6: The present capital structure of HBL is shown below:**

Share structure	Amount(RS)
Authorized capital( 20,000,000 shares@ 100)	2,000,000,000
Issued capital(10135125 shares@100)	1,013,512,500
Paid up capital(10135125 shares@100)	1,013,512,500

**Source: Annual Report of HBL.2008/09**

**c) Everest Bank Limited (EBL):**

Everest Bank Ltd was established in 2051 B.S It entered into joint venture with Punjab National bank of India (PNB). PNB holds 20% equity stake in the bank. Like the same Nepalese promoters and general public holds 50% and 30% respectively. The bank operates with the objective of extending professionalized banking services to various section of the society of the country and thereby contributes to the economic development of the society in the country. The bank provides various services and facilities such as:

- ) Loans and Advances
- ) Deposits
- ) Credit finance
- ) Bank guarantees
- ) Remittances
- ) Hire purchase loan
- ) Education loan
- ) Housing loan
- ) Foreign exchange facility
- ) Automated Teller Machine (ATM) facility

**Table 1-7: Everest Bank has the following shareholding pattern:**

<b>Subscription</b>	<b>%holding</b>
Nepalese Promoters	50%
Punjab National Bank	20%
General Public	30%
Total	100%

**Source: Annual Report of EBL. 2008/09**

**Table 1-8: The present capital structure of EBL is shown below:**

<b>Share structure</b>	<b>Amount(RS)</b>
Authorized capital(10000000shares@ 100)	1,000,000,000
Issued capital(8432000shares @100)	843,200,000
Paid up capital(8314000shares@ 100)	831,400,000

**Source: Annual Report of EBL. 2008/09**

**d) Nepal Bangladesh Bank Limited (NBBL):**

Nepal Bangladesh Bank Ltd was established in 2051 B.S in technical collaboration with International Finance Investment and Commercial Bank (IFIC) Ltd of Bangladesh under the company act 1964(2021 B.S).The main objective of the bank is to carryout commercial banking activities under the company act 1974. The bank is managed by IFIC Bank Ltd Bangladesh in accordance with the joint venture and technical service agreement between it and Nepali promoters. NB Bank has been tendering modern banking services to the different sectors of the economy like manufacturing and service industries, hydropower projects, traders, small entrepreneurs' weaker sections of the society.

The bank is only bank entrusted by the World Bank and his Majesty's government of Nepal to be the Power Development Fund (PDF) administrator for the development of the small and middle level hydropower projects in the country. The bank provides various services and facilities such as:

- Credit and advances
- Consortium finance
- Working capital credit
- Term loan
- Demand loan
- Trade finance
- Hire purchase loan
- Letter of credit
- Bank guarantee
- ATM card facility
- Locker facility
- Tele banking
- Bearer certificate of deposit
- Underwriting of shares
- Remittance service all over the world.

**Table 1-9: Nepal Bangladesh Bank has the following shareholding patterns:**

<b>Subscription</b>	<b>% holding</b>
Nepalese Promoter	20%
General Public IFIC	30%
	50%
Total	100%

**Source: Annual Report of NBBL Bank. 2008/09**

**e) Nepal SBI Bank**

Nepal SBI Bank is a joint venture between employee provident fund and state bank of India. The main objective of the bank is to carryout modern banking business in Nepal under the commercial bank act 1974. The bank provides loan to agriculture, commerce and industrial sector. The bank started its banking operation on 8<sup>th</sup> July 1993. This Bank is controlled and managed by the state bank of India Nepal SBI Bank has been providing full-fledged commercial banking services to its clients' facilities provided by the bank are as follows:

- Loan and Advances
- Deposits
- Trade finance
- Bank guarantees
- Remittances
- Hire purchase loan
- Housing loan
- Education loan
- Automated Teller Machine (ATM) facility
- SWIFT facility for remittances and letter of credit.

**Table 1-10: Nepal SBI bank has the following shareholding patterns:**

<b>Subscription</b>	<b>% holding</b>
State Bank of India	50.61%
Karmachari Sanchaya Kosh	15.18%
ADB N	5.06%
General Public of Nepal	29.15%
Total	100%

**Source: Annual Report of NSBI 2008/08**

**Table 1-11: The present capital structure of NSBI is shown below:**

<b>Share Structure</b>	<b>Amounts (RS)</b>
Authorized capital (10,000,000 shares@100)	1,000,000,000
Issued capital (650,000,000 shares@100)	650,000,000
Paid up capital (6,477,984 shares@100)	647,798,400

**Source: Annual Report of NSBI 2008/09**

**f) Standard Chartered Bank Limited (SCBL)**

Standard chartered Bank Ltd was established as a joint venture between ANZ Grindlays and Nepal Bank Ltd. This bank is known as standard Chartered Bank since July 2001. Standard Chartered Bank Ltd was renamed from Nepal Grindlays Bank Ltd which was established in 1987 A.D. as one of the commercial bank of Nepalese economy. The bank is providing many of the banking services t its customers through the branches national wide. The bank places a great emphasis on being equipped with the best human resources so as to continue to be the leader of the industry. To improve the skills and knowledge of the staff, the bank continues to provide development programs, including on the job training and job rotation. The bank provides various services and facilities such as:

- ) Loan and Advances
- ) Deposits



- ) Trade finance
- ) Bank guarantees
- ) Remittances
- ) Hire purchase loan
- ) Housing loan
- ) Education loan
- ) Automated Teller Machine (ATM) facility

**Table 1-12: Standard Chartered Bank has the following shareholding patterns:**

Subscription	% holding
SBL Standard Chartered Grind lay's Ltd. Australia	75%
Standard Chartered, United Nation Nepalese Public Shareholders	25%
<b>Total</b>	<b>100%</b>

**Source: Annual Report of SCBL. 2008/09**

**Table 1-13: The present capital structure of SCBL is shown below:**

Share structure	Amount(RS)
Authorized capital( 100,00,000 shares@ 100)	1,000,000,000
Issued capital(500,00,000 shares@ 100)	500,00,00,000
Paid up capital(4,132,548shares @100)	413,254,800

**Source: Annual Report of SCBL.2008/09**

## **1.2 Identification of the problem**

Interest rate is an essential tool in the field of finance and economics. According to economic theory savings increase as increase in interest rate with investment increases as decrease in interest rate. Generally when interest providing in deposits is very less people keeps their surplus funds idle and same when interest charge on lending is very high the possible investors also can't borrow funds for investment in priority sectors of the economy. In such situations how could be possible to develop country's economy in international market.

The interest rate plays important role for the banking development. The favorable investment climate makes appropriate interest rate. We have seeing the commercial banks has to shoulder more risk and up certainty in an investment the banks gain some profit now as well as they has lot of risk an 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 in the gain of bank. The interest rate charged and offered of a financial institutions and commercial banks was regulated by central bank until before few years, but how these institutions are free to fix their interest rate. Commercial banks can play vital rote by adopting effective interest rate policy on deposits and lending for encourage investment in every sector of economy. But it is true that commercial banks are established with proffer motives and interest rate may affect its profits too. An appropriate interest rate can divert investment in proper field. In short interest on deposit must be able to increase the amount of deposit must be able to increase the amount of deposit by encouraging people to save their income. On the other hand the lending rate of interest must be attractive to the borrowers. So that they will be able to enjoy benefits by utilizing borrowed fund. This is possible any when the fund seeking people will be able to earn more then what they pay as interest on borrowing funds. But whether our country is able to attain such situations or not is a matter of concern for us.

With the above discussed problem, this study attempts to answer the following questions.

- 1) What are the interest rate structures of commercial joint venture banks in Nepal?
- 2) What are the relationship of interest rate with deposit amount and lending amount of commercial joint venture banks?
- 3) Is the interest rate on deposit of Joint Venture Banks can attract to the depositors?
- 4) Is the lending rate of joint venture banks can attract to the borrower or investor?
- 5) Is the interest rate spread satisfactory or not provided by commercial joint venture banks?

### **1.3 Objectives of the Study**

The main objectives of this study is to know the overall influence of interest rate on deposit and lending of joint venture banks as well as to identify whether the interest rate spread is satisfactory or hot. In the same way this study also aims to identify whether the theories that are taught in university courses are applicable or not in Nepalese financial sector. Besides this the other specific objectives related to this study are as given below.

- i. To present and analyze the interest rate structure of various commercial joint venture banks at different time period.
- ii. To examine and analyze the influence (i.e. relationship) of interest rate on deposit amount and lending amount of commercial joint venture banks.
- iii. To examine and analyze the position of interest rate and loan and advance ratio of commercial joint venture banks.
- iv. To recommend appropriate suggestion base on the analysis of the data to concerned authority.

### **1.4 Significance of the Study**

Interest is simply the price borrowed fund. Higher interest generally brings a lending investment? Lower interest rates on the other land discourage the saving and encourage the investment. Higher the inflation, higher will be the interest rate. But in real world the theory may or may not come true in context of developing country like Nepal because most of the theories of financial markets and institutions are deter mined and developed by the study conducted by developed countries.

Many studies have been made in various topics related to financial management. The topic being an important aspect for the economic development of the country has no much been emphasized that means not much research work has been found in this topic so curiosity arose to make a study on this topic and be familiar with interest rate structure of commercial joint venture banks and to know whether it influences deposits and loans.

It is crucial task of top level management to fix interest rate. Even though people have more souring and even need more money for investments are not familiar with the interest rate structure of banks. In this study major functions of commercial joint venture banks would be analyzed by using various mechanisms. Since this study deal the part of the managerial function, hence it is hoped to some extent this study will help the policy makers to formulate strong policy regarding interest rate charged on deposits and lending in Nepalese context. This study will be also useful to various parties such as further researcher, students, teachers, financial institutions, investor, business, organization, and general individual to get some useful information about interest rate deposits and lending.

### **1.5 Research hypothesis**

Testing of hypothesis is one of the most important aspects of the research study. It is the quantitative statement about the population parameter. In other words, it is an assumption that is made about the population parameter and then its validity is tested. By testing the hypothesis we can find out whether it deserves the acceptance or rejection of the hypothesis. The acceptance of the hypothesis means there is no any sufficient evidence provided by the sample to reject it and does not necessarily imply that it is true. The main goal of testing of hypothesis is to test the characteristics of hypothesized population parameter based on sample information whether the difference between the population parameter and sample statistic is significant or not.<sup>4</sup>

Generally, two complementary hypotheses are set up at one time. If one of the hypotheses is accepted, then the other hypothesis is rejected and vice versa. The two complementary hypotheses that are set up in the testing of hypothesis are the null hypothesis and alternative hypothesis. The hypotheses formulated for this study are as follows

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<sup>4</sup> Sharma, P..K. & Chaudhary, A.K. "Statistical Methods" Khanal Book Prakashan, Kathmandu. P. 229

### **First Hypothesis**

Null hypothesis,  $H_0: \rho = 0$  i.e population correlation coefficient is zero. In other words, the variables (deposit interest rate and deposit amounts) are uncorrelated in Nepalese financial market.

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

### **Second Hypothesis**

Null hypothesis  $H_0: \rho = 0$  i.e. population correlation coefficient is zero. In the words the variables (credit interest and credit or loan amounts) are not correlated in Nepalese commercial joint venture banks.

Alternative hypothesis  $H_1: \rho \neq 0$  i.e. population correlation coefficient is not equal to zero. In other words, credit interest rate and credit or loan amounts are correlated.

### **Third Hypothesis**

Null Hypothesis  $H_0: \rho = 0$  i.e. population correlation coefficient is zero. In the words, there does not exist any correlation between interest rate on deposit and interest rate on lending.

Alternative hypothesis  $H_1: \rho \neq 0$  i.e. population correlation coefficient is not equal to zero. In other words, there exist correlation between interest rate on deposit and interest rate on lending.

## **1.6 Limitation of the Study**

A research is the vast investigation for the setline of the problems. There is not far from several limitations. That weakens the heart of the study e.g. inadequate coverage of banks, time periods taken, reliability of statistical and financial tools used and other variations. This study will be limited by the following factors.

- ) This study includes only six commercial joint venture banks and its data as a sample for this study.
- ) This study is based on the data of seven years period and hence the conclusion drawn confines only to the above period.
- ) The reliability of this study depends upon the information provided by concerned fault venture banks and published data.
- ) The samples are taken from commercial joint venture banks, other financial intermediaries would not include in the study.
- ) Most of the data used in study are of secondary type.
- ) There are many factors that effect the deposit amount and lending amount of commercial joint venture banks. However this study is focused on the interest rate.

## **1.7 Plan of the Study**

This study is divided in five chapters.

The first chapter presents a bring introduction of the study. It includes background, interest rate joint venture banks, interest rate structure profile of sample banks, and statement of problem, objective significance, research hypothesis and limitation of study.

The second chapter deals with the review of literature including concept of interest rate, theories of interest rate, factors effecting interest rate from different books, journals and thesis.

The third chapter is research methodology, which includes research design, population and sample sources of data and collection procedure, data processing and presentation and tools and method of analysis.

Chapter four presents analysis and interpretation of data of related topic based on annual reports of sample banks. In this chapter collected and processed data are presented, analyzed and interpreted with using analytical tools with presenting charts and figures.

At the end of the chapter summary of whole study, conclusion and recommendation is made.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

For all types of studies, review of literature is essential, which helps to find out what research studies have been conducted in ones chosen field of study and what remains to do. In fact, review of literature begins with a search for a suitable topic and continues throughout the duration of the research work. It is a path to find out what other research in this area has uncovered. It is the process of locating, obtaining, reading and evaluating the research literature in the area of the students' interest.<sup>5</sup> It is also a means to avoid investing problems that are already been positively answerer. The main reason for a full review of research in past is to know the out comes of those investigations in areas where similar concepts and methodologies had used successfully.

Review of literature means reviewing research studies or other relevant propositions in the related area of the study so that all the past studies, their concussions and deficiencies many are know and further research can be conducted. The most important reason of literature review is to learn not researcher such as, what research has been done in the subject? What the ones have been developed? Methods approaches used by other researchers' area of agreement or disagreement etc.

#### **2.2 Theoretical Review**

##### **2.2.1 Meaning of interest**

Interest rate is one of the important variables in economics and financial system of the country. In 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 recognized only annual husbandry and stock rising as two legitimate industries whose product could be lent and interest earned on them.<sup>6</sup>

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"

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<sup>5</sup> Wolf, K. Howord and Pant, P.R. (2005), "Social Science Research and Thesis Writing", Buddha Academic Publishing and Distribution, Ktm, P. 34

<sup>6</sup> Jhingan, M.L. (1986), "Advance Economic Theory" Konark Publishing Pvt. Ltd. New Delhi, P. 621



Interest is the amount paid to the creditor in return to a debt borrowed by a debtor for a fixed period at time. As the reward of their factors of production this market is also a reward of other factor of production this interest is also a reward paid to the capitalist for the use of capital.<sup>7</sup>

Prof. Wickell : "Interest is the 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 loan able funds."

Prof. Seliqmen : "Interest is the return for the fund of capital."

Prof. Lord J.M, Keynes : "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 definition and the conclusion is that 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 then the poor people were compelled to take loans and pay interests due to various resources. 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 businessman and the industrialists and these loans are used for the purpose of production. The amount of loan is received from the fund of capital. Various economists have defined interest differently. According to Prof. Wicksell, "Interest is payment made by the borrowers of capital by virtue of its productivity as a reward for his (capitalist's) abstinence." According to Prof. Meyers, "Interest is the price paid for the use of loan able funds." According to Prof. Carver, "Interest is the income which goes to the owner of capital." According to Prof. Lord J.M. Keynes, "Interest is the way, there are different, definitional of interest. Even then the same, 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.

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<sup>7</sup> Joshi, Dr. Shyam (2000), "An Introduction of Economic Theory" ,Nabin Prakashan, Bhotahity, Ktm. P. 384

### **2.2.2 Interest Rate Levels**

Funds are allocated among the borrowers by interest rate; firms with the most profitable investment opportunities are willing and able to pay the most for capital, so they tend to attract it away from less efficient firms or from those whose products are not in demand of course, our country is not completely free in the sense at being influenced only by market forces, these 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.

### **2.2.3 Functions of the Rate of Interest in the Economy<sup>8</sup>**

The rate of interest performs several important functions in the economy.

- ❖ It helps guarantee that current savings will flow into investment to promote economic growth.
- ❖ It relates the available supply of credit, generally providing loan able funds to those investment projects with the highest expected returns.
- ❖ It brings balance the supply of money with the public's demand for money. It is also an important tool of government policy through its influence government meridians control over the volume of saving and investment.

If the economy is growing too slowly and unemployment is rising. The government can use this tool to lower interest rates in order to stimulate borrowing and investment and accelerate the production and development on the other hand, an economy experiencing rapid inflation has traditionally called for a government policy of higher interest rates to slow both borrowing and spending.

### **2.2.4 Theories of Interest**

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

To uncover these basic rate determination forces, however, we must make a simplifying assumption. We assume in this chapter that there is one fundamental interest rate in the economy known as the pure or real rate of interest, which is the component of

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<sup>8</sup> Rose Peter, S. (1997), "Money & Capital Markets, Financial Institutions and Instruments in a Global Market Place sixth edition, Irwin, Chicago, p. 193

all interest rates. The closed approximation to this pure rate in the real world in the market yield on the government bonds minus inflation. The rate at interest and Treasury bond is called risk free rate of interest, which consist of real rate of interest plus premium for inflation. It is a rate of return presenting no risk of financial loss to be investor and representing the opportunity cost of holding idle cash because the investor can always invest in no risk bonds and earn this minimum rate of return. Once pure rate of interest is determined, all other interest rates may be determined from it by examining the expected future inflation and special characteristics of the securities of the securities issued by individual borrowers. For example only the government can borrow at risk free interstate, other borrowers pay higher rates due to the greater risk of loss attached to their securities. Difference in liquidity marketability and maturities are other important factors causing interest rate to differ from the pure or risk free rates some well known theories interest rates are as follows.

#### **2.2.4.1 The Classical Theory of Interest Rates<sup>9</sup>**

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

##### **Savings by households**

Individuals and families carry out most of the saving in modern industrialized economics. For these households, saving is simply abstinence from consumption spending current savings therefore are equal to the difference between current income and current consumption expenditures. In making the decision on the timing and amount of saving to be done, households typically consider several factors: the size of current and long term income, the desired savings target, and the desired proportion of income to be set aside in the form of savings (i.e. the propensity to save). Generally the volume of household savings rises with income. Higher income families and individuals tend to save more and consume less relative to their total income than families with lower income. Although income levels probably dominate saving desisting, interest rates also play an important part. Interest rates affect an individual's choice between current consumption and saving for future consumption. The classical theory of interest assumes that individuals have a definite time preference for current enjoyment of goods and services over future enjoyment. Therefore the only way to encourage an individual or family to consume less now and save more is offer a higher rate of interest current savings. If more were saved in the current period at a higher rate at return, future consumption and future

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<sup>9</sup> Rose Peter, S. (1997) "Money and capital markets Financial institution and instrumental in a global market place", 6<sup>th</sup> edition Irwin, Chicago, P. 193, 194, 195, 196

enjoyment would be increased. Higher interest rates increase the attractiveness of saving relative to spending, encouraging more individuals to substitute current saving and future consumption, for some quantity between interest rates and the volume at savings. Higher interest rates bring forth a greater current volume of savings.

### **Saving by Business Firms**

Not only households but also business save. Most businesses hold saving balances in the form of retained earnings (as reflected in their equity or net worth accounts). In fact the increase in retained earnings reported by business each year is a key measure of the volume of current business saving, which supplies most of the money for annual investment spending by business firms.

The critical element is determining the amount of business savings is the level of business profits. If profits are expected to rise, businesses will be able to draw more heavily earnings and capital markets for funds. The result is a reduction in the demand for credit and a tendency toward lower interest rates. In the other hands, when profits falls but firms do not cut back and their investment plans, they are formed to make heavier use of money and capital markets for investment funds. The demand for credit rises, and interest rates may rise as well.

Although the principal determinant of business saving is profits, interest rates also play a role in the decision of what proportion of current operating costs and long term investment expenditures should be financed internally and what proportion externally. Higher interest rates in the money and capital markets typically encourage firms to use internally. Generated funds more heaving in financing projects, conversely, lower interest rates encourage greater use of external funds from the money and capital markets.

### **Saving by government**

Governments also save, though less frequently than households and businesses. In fact most government saving (i.e. a budget surplus appears to be unintended saving that arises when government receipts unexpectedly exceed the actual amount of expenditures. Income flows in the economy (out of which government tax revenues are use) and the pacing of government spending programs are the dominant affecting government savings.

### **The Demand for Investments Funds**

The savings made by business government and households are important determinants of interest rate but they are only one side. The other side is investment

spending made by business firms, government and in some case households business requires huge amount at funds each year to purchase equipment, machinery and inventories and to support the construction of new buildings and other physical facilities. The majority of business expenditures for these purposes consist of what economists call replacement investment. But according to classical economist, interest rate and invest able fund have inverse relationship. At low rates of interest more investment projects become economically viable an the other hand, if the rate of interest rises to high levels, fewer investment projects will be pursued and fewer funds will be required from the financial markets.

### **The equilibrium rate of interest in the classical theory of interest**

According to the classical economists the interest rates in the financial markets were determined by the interplay of the supply specifically; the equilibrium rate of interest is determined at the point where the quantity of savings supplied to the market is exactly equal to the quantity of funds demanded for investment. To support this in figure no 2-3 this occurs at point E where the equilibrium rate of interest is IE & the equilibrium quantity of capital fund traded in the financial market is QE.

The market rate at interest moves towards its equilibrium level flowers supply and demand forces charge so fast that the interest rate rarely has an opportunity to settle in at a specific equilibrium level. At any given time, the rate is probably above or below its true equilibrium level but moving toward that equilibrium. If the market rate is temporarily above equilibrium, the volume of savings exceeds the demand for investment capital creating an excess supply of savings savers will offer fund at lower and lower rates until the market interest rate approaches equilibrium. Similarly if the market rate is temporarily below equilibrium, investment demand exceeds the quantity at saving available. Business firm will bid up interest rate until it approaches the level at which the quantity saved equals to quantity of funds demanded for investment purpose.

#### **2.2.4.2 The Liquidity Preference Theory of Interest Rate<sup>10</sup>**

The loan able funds approach to interest rate determination focuses a supply and demand for loan able fund. An alternative approach the liquidity preference view focuses on the liquidity preference instead of the supply and demand for money.

It is assumed that individual inherently prefer money among all financial assets since money can be used to make payments and is thus the most liquid assets wealth

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<sup>10</sup> K.K. Dewett and Varma O.D. (1999), "Elementary of Economic Theory," S Chand and Company Ltd Ramnagar, New Delhi. P. 329, 330

holders are persuaded to hold financial assets other than money only because this non-money assets offer in interest return which do not exist in the holding of idle money. Further, the greater the spread between the yields on non money financial assets and money, less will be the demand for money holdings and greater the demand for other financial assets and vice versa. The demand schedule for money can thus be depicted as a function of the rate at interest.

### **2.2.4.3 The Loanable Fund Theory of Interest Rate<sup>11</sup>**

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

#### **The Demand for Loanable Funds Consumer**

##### **(Household) Demand for Loanable Funds**

Domestic consumers demand loanable funds to purchase a wide variety of goods and services on credit. Recent research indicates that consumers are not particularly responsive to the rate of interest when they seek credit but focus on installment payments, maturity and size of installment payments.

##### **Domestic Business Demand for Loanable funds.**

The credit demands of domestic business generally are more responsive to changes in the rate of interest than in consumer borrowing. Most business credit is for such investment purposes as the purchase of inventories and new plant and equipment. The quantity of loanable funds demanded by the business sector increases as the rate of interest falls.

##### **Government Demand for loanable funds.**

Government demand for loanable funds is a growing factor in the financial markets but doesn't depend significantly on the level of interest rates. Government decision on spending and borrowing depends in response to social needs and the public welfare not

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<sup>11</sup> Rose Peter, S. (1997), "Money & Capital Markets", Irwin/ McGraw Hill, P. 205

the rate of interest. Moreover in case of central government, it has the power both to tax and to create demand on the other hand, is slightly inelastic their borrowing activities by legal interest rate ceilings. When open market rate rises above the ceiling, some state and local governments are prevented from offering their securities to the public.

### **Total Demand for Loanable Funds**

The total demand for the loanable fund is the sum of domestic consumer, business and government credit demands. These demand curves slopes down word and to the right with respect to the rate of interest. Higher rate of interest lead some business, consumers and governments to cartel their borrowing plans, lower rates forth more credit demand. The total demand for loan able fund is shown in the following figure 2-10 where DT is total demand.

### **Supply of Loanable Funds<sup>12</sup>**

The major sources of supply of loanable fund are from two sources.

- 1) The amount of saving by households, business, governments, and
- 2) The amount of new money created by the commercial banking system.

### **Domestic Saving**

Saving refers to the postporvement of current consumptions. The decision to save is the decision to forget current consumption in order to have a larger quantity of consumption the future. Individual or household save for a variety of reasons but there is little evidence to suggest that the quantity of loanable funds supplied through saving is clearly influenced by the level of the interest rate. A higher interest rate represents a greater reward to saver for postponing current consumption and thus might be expected to produce a higher quantity of savings some individuals. In general case, the quantity of saving of saving supplied by individuals is principally determined by the level of income and it is influenced to lesser degree by the level of interest rats. Business saving refers the net income after takes of the firm, less any cash dividends i.e. retained earning. There is little reason to believe that the volume of saving at business firm is strongly influenced by the level of interest rates. For government, the volume of saving is defined as the difference between revenues and expenditures. Such that saving exists when revenues exceed expenditure (budget surplus).

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<sup>12</sup> Cooper, S. Keery & Fraser, Donald R (1983), "The Financial Market Place", Addison - Wesley Publication Company, California P. 160

## Creation of New Money

Although the volume of savings is the principal source of loanable fund in the financial markets, the supply of the loanable funds may be increased through the creation of new money beyond the amount made possible by current saving. The amount of new money created is determined jointly by the actions of commercial banking system and the central bank loans and purchase securities and create to make through the credit creation process. However, the ability of commercial bank to create money is limited by the central banks through the use of its monetary policy tools like open market operations, reserve requirement changes and discount rate changes.

## Total Supply of Loanable Funds

The total supply of loanable funds including domestic saving, foreign lending, dishoarding of money, and new credit created by the domestic banking system.

## The Equilibrium Rate of Interest in the Loanable Fund Theory

The two forces of supply and demand for loanable funds determine not only the volume of lending and borrowing going on in the economy but also the rate of interest. The interest rate tends toward the equilibrium point at which the supply of loanable funds. This point of equilibrium is shown in the following figure where it is the equilibrium rate of interest rate and QE is volume of loanable funds (credit)

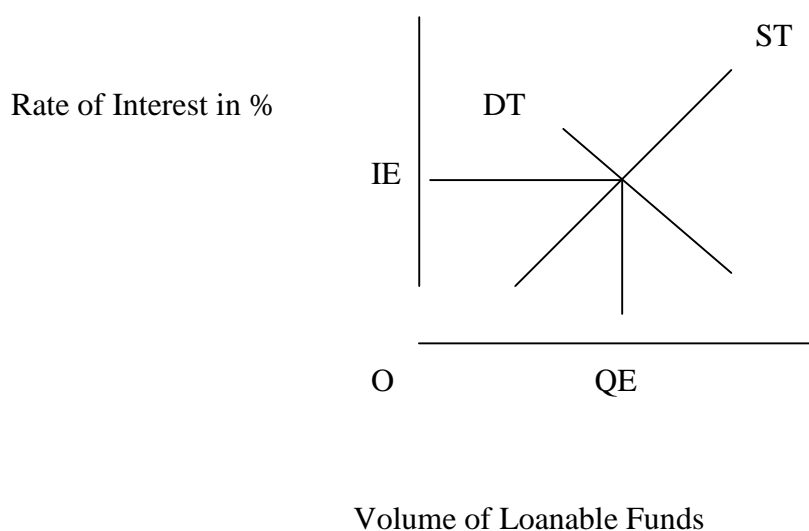


Fig. 2-1 The equilibrium rate of interest in loanable funds theory

In the given figure DT stand as a total demand of loanable fund and the ST refer supply at the loanable fund, if the interest rate is temporarily above equilibrium, the quantity of loanable funds supplied by domestic savers and foreign lenders, by the



banking system and from the disordering of money exceeds the total demand for loanable funds, and the rate of interest will be bid down on the other hand, if the interest rate is temporarily below equilibrium loanable funds demand will exceed the supply. Borrower will bid up the interest rate until it settles at equilibrium once again.

#### **2.2.4.4 Rational Expectancy Theory of Interest<sup>13</sup>**

The rational expectancy theory assumes that equilibrium interest rate depends upon the changes in investor's expectation regarding future security prices and return. Investor's decision towards the borrowing and lending funds come from the availability of new information. When new information appears about investment, saving or the money supply, investors begin immediately to translate that new information into decisions to borrow and lend funds. So rapid is the process of the market digesting new information that security prices and interest rates presumably impound the new data from virtually, the moment they appear. In absence of new information, next period's interest rate. In other words the knowledge of past interest rate will not be a reliable foresaid of future interest rate. In a perfectly efficient market, it is impossible to win excess returns continuously by trading on publicly available information.

#### **2.2.5 Change in Interest and its Influence upon Volume of an Asset**

The prices of a security and its yield or rate of return or interest rate are inversely related. A rise in interest rate implies a decline in price; conversely, a fall in yield is associated with a rise in the security's price.

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

The inverse relationship between interest rates and security prices can be seen quite clearly when we allow the supply and demand curves to change. For example

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<sup>13</sup> Rose Peter, S. (1997) "Money and Capital Markets", Financial Institution and Instruments in a Global Market place, 6th edition, Irwin Chicago P. 211, 213, 264

suppose that in the face of continuing inflation, consumers and business firms accelerate their borrowings, increasing the demand for loanable funds. The demand curve slides up and to the right with the supply of loanable funds unchanged. This increasing demand for loanable funds also means that the supply curve shifts up. Both a new loanable equilibrium price for securities and higher equilibrium interest rate for loanable funds results.

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

### **2.2.6 Factors Affecting Interest Rates<sup>14</sup>**

In the preceding section, we examined the factors that cause the interest rate or yield on one security to be different from the interest rate yield on another.

There factors included the maturity period or term of a loan and expected inflation. In this section, our focus is upon to learn why not one but, in fact, thousands of different interest rates exist in the economy.

#### **a) Marketability**

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

Marketability is positively related to the size and population of the institution issuing the securities and to the number of similar securities outstanding. Not surprisingly, stocks and bonds issued in large blocks by the largest corporations and government units tend to find acceptance more readily in the market with a larger number of similar securities available, but sell transactions are more frequent and a consistent market price can be established.

#### **b) Default Risk**

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<sup>14</sup> Rose Peter, S. (1997) "Money and Capital Markets, Financial Institution and Instruments in a Global market place", 6th edition, Irwin Chicago P. 229, 230, 231, 232 & 233

Default risk involves that potential that a saver will receive less principal and interest on the financial claim that the contract specifies. It is related with the probability that some or all of the entail investment will not be returned. The degree of default risk is closely related to the financial condition of the company<sup>15</sup>. Default risk requires making estimates of the possibility of loss due to this reason. Investors in securities. Face many different kinds of risk, but one of the most important is default risk- the risk that a borrower will not make all promised payments at the agreed upon items. All securities except government securities are subject to varying degrees of default risk.

**c) Prepayment Risk**

A new form of risk affecting the relater interest rates confronting modern investors arises when they acquire so called loan backed securities. There loan backed securities are usually created when a lending institution, such as a bank or mortgage company, removes a group of similar loans from its balance sheet and places them with a trustee (such as a security dealer) who, using the loans as connatural sells securities to rise new capital for the lending institution. Each of these securities derives its value from the income earning potential of the pool of loans that backs of securities. As the loans in the pool generate interest and principal payments, these payments flow through to holders of the loan sacked securities. In loan is backed securities investor demand higher. Yields to compensate them for prepayment risk associated with it.

**d) Servicing Cost**

Some financials claims are different to service. This means that the process of collecting interest and principal payments providing accurate records or monitoring the ongoing credit position of the borrowing involves considerable operating costs. Lenders must be compensated for the servicing costs. This cost is included in the interest rate charged and is referred to as the servicing cost<sup>16</sup>.

**e) Exchange Rate Risk**

No today's financial markets have become more global, there has been a significant growth in the borrowing and investing in foreign denominated financial claims. A US company establishing manufacturing facility in Nepal might be inclined to issue shares and or bonds denominated in Nepalese rupees rather than US dollars. Investors also have available to them many investments involve exchange rate risk. This risk relates to the potentiality that the rate of exchange between the domestic currency and foreign denominated currency will than go as a result of numbers of factors. The primary risk for this borrower is that the valves of the currency borrowed rises in relation to the domestic currency. This result in an unexpected cost on the international loans, since the loan would have to be repaid in the foreign currency that has risen in value relate to the

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<sup>15</sup> Cheney, John M. & Moses, Edward. A. (2003), "Fundamental of Investment" West Publishing Company, New York P. 38

<sup>16</sup> Thygerson, Jennth (1992), "Financial Markets and Institution", A Managerial Approach, Harper Callings College Publication, New York P. 36

domestic. This potential change in currency values must be reflected in computing the cost of borrowing.

**f) Call privileges**

Many corporate bonds and mortgages most municipal revenue bonds and some government bonds issued in today's financial markets carry a call privilege. This provision of the bond contract grants the borrower the option to restore all or a portion of a bond issue by buying back the securities in advance of maturity. Bond holders usually are informed of a call through a notice in a newspaper of general circulation, while holders of record of registered bonds are mortified directly. Normally when the call privilege is exercised, the issuer will pay the investor the call price, which equals the securities face name plus a call the size of the call penalty is set forth in the indentures and generally varies inversely with the number of years remaining to maturity and the length of the call deferment period. In the case of a bond, one year's worth of coupon income is often the minimum call penalty required.

**g) Taxability**

The final factor influencing the change in interest rate is taxability. Financial claim income is typically subject to taxation. Taxes imposed by federal, state, and local governments have a profound effect on the returns earned by investors on financial assets. Since the value of financial claim subject to taxation is based on its anticipated cash flow, taxation acts to reduce those cash flows. Not all incomes are taxable equally. Thus higher the tax lower will be the cash flow and higher the interest rate and vice versa.

## **2.2.7 Deposit**

### **2.2.7.1 Concept of Deposit**

Deposit is the sum of money lodged with bank, discount house or other financial institutions<sup>17</sup>. Deposit is nothing more than the assets of an individual which is given to the bank for safe keeping with an obligation to get something (interest) from it. To a bank these deposits are liabilities. Commercial bank Act 2031 (1994) defines "Deposits" as the amount deposited in a current, savings or fixed accounts of a bank or financial institution<sup>18</sup>. The deposits are subject to withdrawals by means of cheque on a short notice by customers. There are several restrictions on these deposits, regarding the amount of deposit, number of withdraw etc. These are considered more as investments and hence they earn some interest. The rate of interest varies according to the nature of deposits. The bank attracts deposits from customers by offering different rates of interest and different kinds of facilities. Though the bank plays an important role in influencing the customer to part with his funds and open deposit accounts with it, it is

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<sup>17</sup> Shrestha, Dr. Manohar K. & Bhandari, Dipak B, "Financial Market and Institutions", Asmita Books Publishers & Distributors, Putalisadak, Ktm. P. 281

<sup>18</sup> Bhandari, Dilli, Raj (2003), "Banking and Insurance, Principle & Practice" Aayush Publication, Kathmandu P. 73

ultimately the customer who decides whether she/he should deposit his surplus funds in current deposit a/c, saving deposit a/c. or fixed deposit all. Bank deposits arise in two ways. When the banker receives cash, it credits the customer's account, it is known as primary or a simple deposit people deposit cash in the banking system and there by convert one form of money, cash, into another form, bank money. They prefer to keep their money in deposit prim accounts and issue cheques against them to their creditors. Deposits also arise when customers are granted accommodation in the form of loans when a bank grain a loan to a customer it doesn't usually pay cash but simply credits the customer's account with the amount of loan.

#### **2.2.7.2 Types of Deposit**

There are mainly three types of deposits in banks in practice. There are:

##### **Current Deposit:**

A current deposit is a running account with amounts continuously. These accounts are also called demand depositor demand liabilities since the banker is under the obligation to pay money in such deposits on demand. The account never becomes time barred, because the limitation does not run until a demand is made by the customer on the bank for the payment of deposit. These accounts are generally opened by business houses, public institutions, corporate bodies and other organizations whose banking transactions are numerous and frequent. As these deposit are payable on demand, banker is obliged to keep larger cash reserves than are needed in the case of fixed and saving deposits. This type of account is just a facility offered by a bank to its customers. So such deposit doesn't yield and interest return.

##### **Saving Deposit:**

According to commercial bank act 2031 saving accounts means "An account of amounts deposited in a bank for saving purpose". The saving deposit bears the features of both the current and fixed period's deposits. Saving account is mainly meant for non-trading customers who have some potential for saving and who don't have numerous transactions entering their account. While opening the account the minimum compensating balance differ according to the banks rule. Similarly there is also divergence as to how much amount of money can be withdrawn. But it the customers want to with draw more money from the bank which is not allowed by it but if he/she gives pre-information to the banks, he/she can withdrawn more money. The bank fixes the minimum and maximum amount of with draw able through a cheque from this deposit. It the bank goes into liquidation, priority is given to the saving deposit holders.

## **Fixed Deposit:**

Under the commercial bank act 2031 (1974) "Fixed account means an account of amounts deposited in a bank for certain period of time." The customers opening such account deposit their money in the account of for fixed period. Usually, only the person or institution who wants to gain more interest opens such type of account high interest rate is paid to this deposit as compare to saving deposit. The bank and the customer can take benefit from this deposit. The bank invests this money on the productive sector and gains profit and the customer too can be made his financial transaction stronger by getting more interest from this deposit. The principal amount with interest must be returned to the customer after expiry of fixed time. Bank generally gives loans up to 90% of the deposit against the security of the deposit for this bank charge. Some higher interest than the interest allowed on the deposit.

### **2.2.7.3 Importance of Deposit.**

Deposit arises from saving. An individual's income equals consumption plus saving she/he deposits the saved part of income in the bank and gets interest from it. Banks in turn lend this money and earn profit by charging high interest rates. The borrowers from banks, invests this fund in productive sectors yielding more return than the interest on borrowed fund. This investment leads to create new employment opportunity in the economy. Ultimately due to new employment the purchasing power of the economy increase and finally G.D.P. and growth of the economy occurs. It means that the deposit has very important rule in the economy. If the volume of deposit is low, the investment in the economy also lags behind due to lack of resources. The deposit of banks is the accumulated capital which can directly be invested. There is a great need of such deposit in the development countries. Deposit includes the idle money of the public, bank being the inter mediator to accept this sort of money and help to canalize this in productive sector. So the importance of banks and financial intermediaries is larger in present context.

## **2.2.8 Lending (Credit)**

### **2.2.8.1 Concept of Lending (Credit)**

The word credit means trusting. In the credit transactions the lender (or banks) must have confidence in the borrower that she/he will be able to repay the money. In credit transactions, the creditor's turns over to the debtor to repay an equivalent amount usually money in future plus as added sum called interest. In other words the commercial bank earns profit by lending the amount in terms. Loan or credit and in return it gets interest. Banks loans are classified as; a) loans and advance b) overdrafts c) cash credit d)

discounting of bills and so on<sup>19</sup>. But beside this, the other forms of credit are bills exchange cheques, Drafts, Promissory Note, letter of credit (LC), Travelers cheque, treasury bills ( T-Bills), Book credit etc.

If credit is made to the government the credit is known as public credit and if credit is transacted by the private for his own purpose the credit becomes private. There are certain distinctions between public and private credit. Bank credit refers to the credit taken by the banks. Bank is the major sources of credit to both private and public debtors, sometimes bank also take credit. There is another type of credit known investment credit and commercial credit which can be divided according to the purposes of using credit. The former refers to the credit, which is purposes; similarly, another classification is consumer's credit and producers' credit.

#### **2.2.8.2 Factors affecting the volume of lending**

The volume of credit within a country depends upon different factors. Some of the factors the volumes of credit are as follows:

**1) Credit (lending) Rate:**

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

**2) Rate of Return:**

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

**3) Investment opportunity:**

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

**4) Pace of Financial development :**

If there are enough banking facilities to provide loans in easy terms, the volume of credits may be high? It is due to the lack of cheap money lenders that rural people are

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<sup>19</sup> Shrestha, Dr. Manohar K. & Bhandari, Dipak B. "Financial Markets and Institutions," Asmita Books Publishers & Distributors, Putalisadak, Ktm P. 255

deprived of loan. If the banking facility with in the nation is expanded, the volume of credit rises.

**5) Basic Infrastructure :**

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

**6) Political situation**

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

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

### **2.2.9.1 Concept of Inflation**

Inflation in common sense is increment in general or average price level in the whole economy. It means that it is the increase in general price level, not the increase in individual prices. Inflation is not a temporary fluctuation in price but it is a sustained and appreciable increase in price<sup>20</sup>. Due to the increase in general level in price, the value of purchasing power of money declines as there is an inverse relationship between the general level of price and value of money. According to economic couthur "Inflation means a state in which the value of money is falling i.e. prices are increasing." Inflation is a general rise in prices across the economy. This is distinct from a rise in the price of a particular good or service. Individual prices rise and fall all the time in a particular good or service. Individual prices rise and fall the time in a market economy. Reflecting consumer choices and preferences and changing costs. If the price of one item say particular model of car-increases because demand for it is high, we do not think of this as inflation occurs when most prices are raising increase smoothly in the range of some degree across the whole economy.

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

### **2.2.9.2 Inflation and Interest Rates**

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<sup>20</sup> Joshi, Shyam (2056), "Micro and Macro Economic Analysis", Taleju Pustak Bitarak, Kathmanu P. 364



Inflation occurs when the average price level in the economy rises. Interest rates present the "Price" of credit. Are they also affected by inflation? The answer is yes. There is positive correlation between interest rates and inflation. In other words, increase in inflation increases the interest rates. But the exact effect of inflation on an interest rate is not identified yet on this regard, there are many theories. Here in this case mainly two theories are going to be discussed<sup>21</sup>.

### **The Nominal and Real Interest Rates**

Before expanding the relationship between inflation and interest rates, several key terms must be understood. In this connection one should be familiar with nominal rate and real rate of interest. The nominal rate is published or quoted interest rate on a security or loan. These rates are actual rates that are used to transact with the customers. For example an announcement in the financial press that the major commercial banks have raised their prime lending rate to percent per annum indicates what nominal interest rate is now being quoted by banks to their best customers. Similarly the real interest rate is the return to the lender or investor measured in terms of its actual purchasing power. In a period of inflation, of course, the real rate will be lower than the nominal rate. An investment's real rate of interest during some period is calculated by removing the rate of inflation from the nominal return<sup>22</sup>.

### **The Fisher Effect**

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

Nominal interest rate = expected real rate + inflation premium + (expected real rate X inflation premium)

According to Fisher, the cross-product term in the above equation (i.e. expected real rate X inflation premium) is often eliminated because it is usually quite small. In countries where inflation experience can be written as.

Nominal interest rate = expected real rate + Inflation premium rate

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<sup>21</sup> [www.worldbank.co.uk / inflation/effect interest.htm](http://www.worldbank.co.uk/inflation/effect_interest.htm).

<sup>22</sup> [http://www.bankofEngland.co.uk/target two point zero / whats.inflation.htm](http://www.bankofEngland.co.uk/target_two_point_zero/whats_inflation.htm)

Clearly if the expected real interest rate is held fixed, changes in nominal rate will reflect shifting inflation premium. It means that if inflation premium increases then nominal rate also increases.

### 2.2.10 Interest Rate Spread<sup>23</sup>

Interest spread is the difference between weighted average rate of interest on lending on interest earning assets and weighted average rate of interest on interest paying liabilities. According to Nepal Rastra Bank the interest spread should not exceed 8% currently. It can be calculated as follows.

Interest rate spread = interest income / earning assets - interest expenses / interest paying liabilities.

## 2.3 Review of Previous Thesis

In the preparation of this thesis there are some research papers and thesis related to this study, which contribute some idea and help in the presentation of this study regarding to this thesis, there are very few thesis and research papers submitted to libraries of Tribhuvan University and its wing colleges on the same topics. But beside this, there are some other thesis which are related to this study to some intents. The review and the extract from them presented in this section.

**Narendra Bahadur Rajbhandary** was conducted a study on "**The interest Rate structure of commercial Banks in Nepal**"<sup>24</sup> in 1978. The objective of his study was to show the relation of interest rate with saving and fixed deposits, with loans and advances, and with interest earning (i.e. interest received on loan minus interest paid on deposit).

His analysis concludes that the time deposits are positively correlated with the interest rates. There is significant correlation between the saving deposits and the rate of interest. Fixed, deposit is more sensitive to the interest rate revision done by NRB. The correlation between the growth of fixed deposits and the interest rate particularly from 1974 to 1977 is most significant. The net interest earning is depended upon interest coverage. The total interest received and the total interest paid significantly correlated in the case of both of the banks i.e. Nepal Bank limited and Rastra Banizya Bank. He is in

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<sup>23</sup> Shrestha, M.K. (2005), "Financial Markets and Institutions" Asmita Books Publishers and Distributors, Kathmandu P. 275 & 276

<sup>24</sup> Rajbhandry, Narendra B. "The Interest Rate Structure of Commercial in Nepal", an unpublished thesis, TU Kathmandu.

view that NRB can well monitor the credit flow and profits of the commercial banks in Nepal by manipulating the demand for and supply of money.

**Kishor Khatri Chettri's** in 1980 was conducted a study titled "**Interest Rate structure and it's relation with deposits inflation and credit in Nepal**"<sup>25</sup>. The objective of his study was to show the relationship between interest rate and other economic variables like deposit, inflation and credit flow. His study concludes the following, according that thesis, the objectives were.

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

By this study, he found that rate of interest is directly affected by the rate of inflation. He found that the price level of Nepal is liked with Indian prices and also found very high inflation during his study period. His suggestion to commercial banks is to fix the confessional interest rate in order to promote, the cottage and small scale industries and to monetarists to consider the rate of inflation while determining to consider the rate of inflation while determining the interest rate on deposits.

The inflation with in the country is very high since few years. In fact the prices in Nepal are affected by the movement in Indian price level than by domestic monetary expansion. Prices in Nepal are linked with Indian because of the 500 miles open boarder and the availability of Indian goods and currency. There is consolidated type of money and capital markets in Nepal. Commercial bank branches are concentrated in the urban areas. Regarding deposit mobilization in the present context the urban area has occupied more than 80% and the flow of credit is also centralized only in urban areas on the other hand the volume of deposit has overcome the volume of credit which means to say that banks are not getting new investment opportunities.

Another study conducted by **Deepak Raj Bhandari** in 1998 upon the title of "**The Impact of Interest Rate Structure on investment portfolio of commercial banks of Nepal**"<sup>26</sup>. He concludes the following:

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<sup>25</sup> Chettri, Kishor Khatri, "Interest Rate Structure and its Relation with Deposits Inflation and credit in Nepal" unpublished MA thesis, TU Kathmandu

<sup>26</sup> Bhandari, Deepak Raj, "The Impact of Interest Rat Structure on Investment Portfolio of Commercial Banks of Nepal", an unpublished M.B.A. thesis, TU kathmandu.

- I. Rates of commercial banks have been fluctuating deposits and lending rates were increases immediately after liberalization of the interest rate an August 31, 1989 but however, started to decline which have helped in increasing the credit flow.
- II. Interest rate structure has direct influence an profitability of commercial banks, Decreasing lending rate helps to increase the profitability through increasing the credit.
- III. Deposits are more interest rate conscious and positively co-related.
- IV. Loans and advances of commercial banks have been found to be continuously increasing with the decline in interest rates.
- V. Effective interest rate structure helps in proper utilization of resources as measured by loan to deposit ratio.
- VI. Most of the banks are having similar interest rate structure which lessens the importance of liberalization of interest rate.

Another study conducted by **Neeta Dangal** in 2003 on the "**Impact of Interest Rate on Financial Performance of Commercial Banks**"<sup>27</sup> concludes:

- I. Most of the commercial banks contradict the general financial theories.
- II. The relation between amount of deposits and interest rate an deposit, in general concept, must be positive. But deposits are increasing despite the clearest in the general level of interest. The result of such phenomenon is that there are fewer investment opportunities for the banking sectors as well as general investors.
- III. The relation between total amount of loan and the lending rate is negative and significant. However the change in the amount of loan flow is not proportionate with the change in the lending rate.
- IV. Correlation between interest rate and inflation is not significant.
- V. Correlation, between interest rate is responsible to shape the profitability of banks but also the operating efficiency also has major influence on it.

Another study was conducted by **Shasti Bhatta** in 2004 in the topic, "**Interest Rate and its Effect on Deposit and Lending**"<sup>28</sup>. In this study the disseminator tries to portrait the relation of interest rate with deposit and l Rajbhandry ending amount. Her findings and the findings made by Chettri are seems to be different. According to Mr. Chettri's finding, all the relation matches the theory. But other matters are same as Mr. Chettri's. The conclusion drawn by Mrs. Bhatta a are as follows.

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

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<sup>27</sup> Dangol, Neeta, "Impact of Interest Rate on Financial Performance of Commercial Banks" an unpublished MBS thesis TU Kathmandu.

<sup>28</sup> Bhatta, Shashi, "Interest Rate and its Effect on Deposit and Lending" an unpublished MBS thesis TU Kathmandu

- IV. The simple correlation coefficient between deposit rate and deposit amount of sample banks are highly negative. But out of them, correlation coefficient analysis of one sample banks is found to be negative.
- V. The correlation analysis between lending rate and lending amount of all sample banks under study comes highly negative. This relation between two variable of sample banks matches with the theory which says with the increase in lending rate, lending amount decreases and vice versa.

Another study made by **Shashi Raj Neupane** and the topic, "**Interest Rate and Its Relation with Deposit, Lending and Inflation in Nepal**<sup>29</sup>", in 2006. His main objectives at the study were as follows:

- i) To explore the relation of interest rate with deposit amounts (existence of substitution effect) in Nepalese market.
- ii) To identify the sensitivity of interest rate to the investment (borrowing)
- iii) To find out the relationship of interest rate with inflation in Nepalese markets.

According to the researcher the interest rate on both deposit and lending of all sample banks are found to be in decreasing trend. Theoretically there is positive relationship between saving amount and saving interest rate but here negative relationship has found. It states that there is no substitution effect in Nepalese financial market. Analysis of fixed deposit amount and fixed interest rate shows negative relationship except RBB and NBL. Theoretically there is negative relationship between lending interest rate and lending amount. In this study for the 5 sample banks, it is found that all samples banks except NBL have negative correlation between these two variables. The relationship between interest rate an deposit and inflation rate is positive. Similarly the correlation between interest rate an lending and inflation rate is found to be moderately positive. He also concluded that the spread between deposit interest rate and lending interest rate is in decreasing trend.

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<sup>29</sup> Neupane, Shashi Raj, "Interest Rate & its Relation with Deposit, Lending and the Inflation in Nepal", an unpublished MBS thesis TU Kathmandu

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research methodology is a way to systematically solve the research problem. It highlights the method adopted in the process of present study. It also focuses about the sources and limitation of the data. Which are used in the present study? It indicates the various sequential steps to be adopted by the researcher in studying a problem with certain objectives in view. So it is the methods, steps and guide lines, which are to be followed in analysis and it is a way presenting the collected data with meaning fully analysis.

The reliability and validity of research work is facilitated 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 in its effect an deposit and lending. The study of research mythology gives the students the necessary training in gathering materials and arranging them, participating in the field work which required, and also training in techniques for collection of data appropriate to factionaries and controlled experimentation and in recording evidence sorting it out and interpreting it.

#### **3.2 Research Design**

Research design is a plan, structure and strategy of investigation. It is simply the frame work for study and helps the analysis of data related to study topic. It constitutes the blue print for the collection, measurement and analysis of data. It is descriptive and prescriptive in nature. The relevant and necessary data were collected from annual reports of various joint venture banks and publications of Nepal Rastra Bank for analytical purpose.

#### **3.3 Population and Sample**

Now, 26 commercial banks (including government owned, public and joint venture) are operating in Nepal. Due to the time and resource factors, it is not possible to study all of them regarding the study topic. Therefore samplings are done selecting from population. The population for the study comprises 26 commercial banks out of them all six joint venture banks are taken as sample to draw the conclusion about population since population of joint venture banks are not large.

### 3.4 Sources of Data and Collection Procedure

The research is based secondary and primary data. These secondary data are collected mainly from sources like annual reports, prospectus published bulletins, news paper, journal internet and other sources. Besides this in some case primary data are also used. They can be collected through questionnaire distributed to the executives. Secondary data are collected from various publications of concerning organizations from Rastra Bank and even from websites of various banks.

### 3.5 Data Processing and Presentation

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

### 3.6 Tools for Data Analysis and Presentation

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

#### 3.6.1 Statistical Tools

##### Arithmetic Mean ( $\bar{X}$ )

Arithmetic mean is a given set of observation is their sum divided by the number of observation. In such case all items are equally important<sup>30</sup>. It depicts the characteristic of the whole group. It is an envoy of the entire mass of homogeneous data. Generally the average value lies somewhere in between the extremes i.e. the largest and the smallest items. It is calculated as follows.

$$\text{Arithmetic Mean } \bar{X} = \frac{\sum x}{N} = \frac{x_1 + x_2 + x_3 + \dots + x_n}{N}$$

Or

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<sup>30</sup> Gupta, S.C (1999) "Fundamental of Statistics," Himalayan Publication House, Bombay, P. 380

$$\sum X = \frac{\sum x}{N}$$

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

N = Number of items

### Standard deviation (†)

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

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

Where

n = Number of items in the series

$\bar{x}$  = Mean

X = Variable

### Coefficient of Correlation (r)

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

Correlation may be positive or negative which lies between  $\pm 1$ . Simple correlation between interest rate on deposit and deposit amount interest rate on lending and credit or lending amount and is computed in this thesis. The correlation between interest rate on deposit and deposit amount is positive. Interest rate on lending and lending amount is



negative when inflation increases, interest rate also increases in same direction and vice versa. For our study following reference is used<sup>31</sup>.

- ) Correlation may be positive or negative and ranges from -1 to +1 when  $r = +1$  there is positive or negative and ranges when  $r = 1$  there is perfect negative. Correlation, when  $r = 0$ , there is no correlation and when  $r < 0.5$  then there is low degree of correlation.
- ) When 'r' lies between 0.7 to 0.999 (or -0.7 to -0.999) there is high degree of positive or negative correlation.
- ) When 'r' lies between 0.5 to 0.699 there is a moderate degree of correlation.

The correlation coefficient can be calculated as:

$$\text{Correlation of coefficient 'r'} = \frac{n\phi_{x_1x_2} Z(\phi_{x_1})(\phi_{x_2})}{\sqrt{n\phi_{x_1}^2 Z(\phi_{x_1})^2} \sqrt{n\phi_{x_2}^2 Z(\phi_{x_2})^2}}$$

$$\text{Alternatively } r = \frac{\text{cov}(x_1, x_2)}{\text{var } x_1, \text{var } x_2}$$

Where,

$$\text{Covariance } (x_1, x_2) = 1/n \phi (x_1 - \bar{x}_1) (x_2 - \bar{x}_2)$$

$x_1$  and  $x_2$  = two variables, correlation between them are calculated.

$n$  = Total number of observations

### **Coefficient of determination ( $R^2$ )**

The coefficient of determination is the primary way to measure the extent or strength of the association that exists between two variables,  $x$  and  $y$ . It refers to a measure at the total variance in a dependent variable that is explained by its linear relationship to and independent variable. The coefficient of determination is denoted by  $R^2$  and the value lies between zero and infinity. The close to infinity means greater the explanatory power. A value or one can occur only if the explained diagram falls exactly on the regression line. The  $R^2$  is always a positive number. It can't tell whether the relationship between the two variables is positive or negative. The square of the simple correlation coefficient is called coefficient of determination and it is very useful in interpreting the value of simple correlation coefficient. The main significance of the

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<sup>31</sup> Pant, G.D. & Chaudhary, A.K. (2053), "Statistics and Quantitative Techniques", 2nd edition, Nepal Sahitya Prakashan Kendra, Kathmandu P. 306

coefficient of determination is to represent the portion of total variations due to independent variable<sup>32</sup>.

$$\text{Coefficient of determination } (r^2_{12}) = (r_{12})^2$$

### **t - test for significance of correlation coefficient**

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

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

Where (n-2) = degree of freedom

n= sample

t = t- distribution

The (1- $\alpha$ ) % confidence limits for estimating population correlation coefficient ( $\rho$ ) are given by

$$r \pm t_{\alpha/2}(n-2) \cdot S.E(r)$$

$$\pm \frac{r}{\sqrt{1-r^2}} \sqrt{\frac{1-r^2}{n}}$$

### **3.6.2 Financial Tools**

Financial tools are used to examine the strength and weakness of performance. In this study, financial tools like interest rate spread and ratios have been used. Ratio is the mathematical relationship between two accounting figures. Ratio analysis is used to compare a firm's financial performance and status to that of other firm's or to it overtime. The qualitative judgment regarding financial performance of firm can be done with the help of ratio analysis. Therefore only those ratios have been covered in this study as required by the study.

#### **Loan and advance to total deposit ratio:**

This ratio is calculated to find out how successfully the banks are utilizing their total deposits on loan and advances for profit generating purpose. A ratio helps us

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<sup>32</sup> Sharma, P.K. & Chaudhary, A.K. (2058), "Statistics Methods ", Khannal Books Prakashan Kathmandu P. 420

showing the relationship between loans and advances which are granted and the total deposit collected by the bank. A high ratio indicates better mobilization of collected deposit and vice versa. It should be noted that too high ratio may not be better from liquidity point of view. This ratio is calculated by dividing loan and advances by total deposits. This can be stated as below:

$$\text{Loan and advance to total deposit ratio} = \text{Loan and advance} / \text{Total deposits}$$

### **Interest rate Spread**

Interest rate spread is a difference between interest rate on lending and interest rate on deposit. Generally banks charge more interest rate on lending than they provide interest rate on deposits. Interest rate spread is calculated as follow.

$$\text{Interest rate spread} = \text{Interest rate on lending} - \text{Interest rate on deposit}$$

Higher spread shows the bank charge high rate for the borrowers than they provide for depositors.

## **CHAPTER FOUR**

### **PRESENTATION AND ANALYSIS OF DATA**

#### **4.1 Introduction**

In this section, all the collected data are presented in the filtered form and are analyzed thoroughly. This is the one of the major chapter of this study because it includes detail analysis and interpretation of data from which concrete result of Nepalese market can be obtained. In this chapter the relevant data and information necessary for the study are presented and analyzed keeping the objectives set in mind. This chapter consists of various calculations made for the analysis of interest rate and its effects on deposit and lending amount of sample banks. This chapter consists of detail analysis and interpretation of data relating to interest rate on deposit and lending, deposit collection and loan & advance of each selected organization from Nepalese financial system. To make our study effective and precise as well as easily and understandable, this chapter is categorized in three parts, presentation, analysis and interpretation. The analysis is based on secondary and primary data available. In presentation section, data are presented in terms of table, graph chart of figures, according to need. The presented data are then analyzed using different statistical tools which are mentioned in chapter three. At last the results of analysis are interpreted. Though there is no distinct line of demarcation for each section (like presentation section, analysis section and interpretation section) but the arrangement of writing is made by aforementioned way. The data has been used are both secondary and primary type.

For our simplicity, in this thesis, presentation, analysis and interpretation of data are made according to the nature. After then, the relationship between interest rate and lending amount is made.

#### **PRESENTATION AND ANALYSIS OF SECONDARY DATA**

Secondary type of data is used to analyze about deposit, amount lending amount and interest rate.

## 4.2 Analysis of Deposit and Interest Rate

In this section, detail study is made about deposit amount and interest rate of sample banks. For this study only saving and fixed deposits are considered because current deposit doesn't earn any interest.

### 4.2.1 NABIL Bank Limited. (NABIL)

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

**Table 4-1: Interest Rate Structure on Deposit of NABIL**

<i>Deposits</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Saving</i>	4.75	3	2.27	2.5	3	2	2
<i>Fixed</i>							
7 days	-	-	-	-	-	-	-
14 days	2.75	2	2	1.75	2.5	2.5	1.75
1 month	3.5	2.75	2.75	2.25	3	3	2
2 months	-	-	-	-	-	-	-
3 months	4.5	3.25	3.25	2.75	3.25	3.25	2.75
6 months	5	3.75	3.75	3	3.5	3.5	3
1 year	6	4.5	4.25	3.5	4	4	3.5
2 yrs / above	6	-	4.75	4	4	4.25	4.25
Whole mean	4.64	3.2	3.35	2.82	3.32	3.21	2.75
Fixed deposit mean	4.62	3.25	3.45	2.87	3.37	3.41	2.88
Std. Deviation from whole mean	0.6251%						

Sources: Banking and financial statistics: 43-49, NRB

Table 4-1 Show the deposit interest rate of NABIL on different time period. For this study 2002 is taken as initial year and 2008 as a final year. This data shows the decreasing tendency of interest rate. The interest rate on savings deposit in the beginning year was 4.75% and decreased to 2% in 2008. The bank quotes the interest rate of fixed deposit in different short term period like 2 months, 3 months, 6 months, 1 year and

above 2 years for the graph purpose in this study the average as 2 months to 1 year is taken to make the figure clearer. For other periods also the fixed deposit rate was in decreasing trend. Similarly if average of fixed deposits of different period is taken, then the results in Almont similar with "Whole average". It means the average interest rate for fixed deposit only was 4.62%, 3.25%, 3.45%, 2.87%, 3.31%, 3.41% and 2.88% respectively for the year 2002, 2003, 2004, 2005, 2006, 2007 and 2008. The average figures also show the decreasing tendency in interest rate except in the year 2004 and 2006. At that period the interest rate is slightly higher than in the previous year, but finally felled to the 2.75 in the year 2008. The deviation is measured by standard deviation which is 0.6251% of each year interest rate.

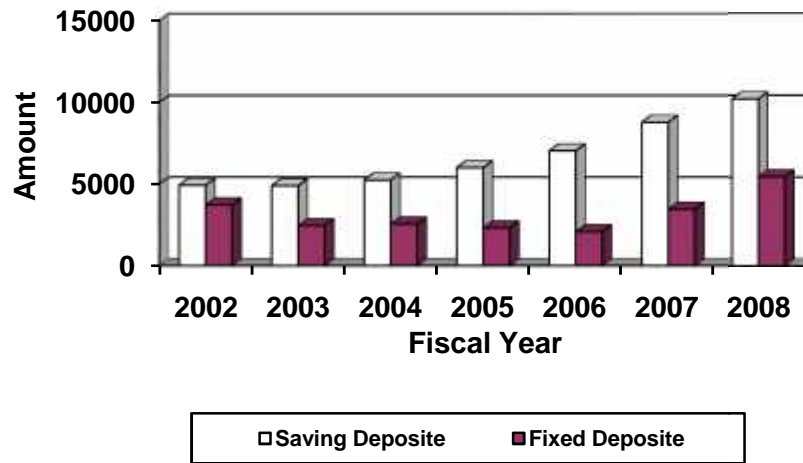
### Correlation coefficient, coefficient of determination and t-statistic of NABIL

**Table 4-2 Relationship between Interest rate and deposit amount of NABIL**

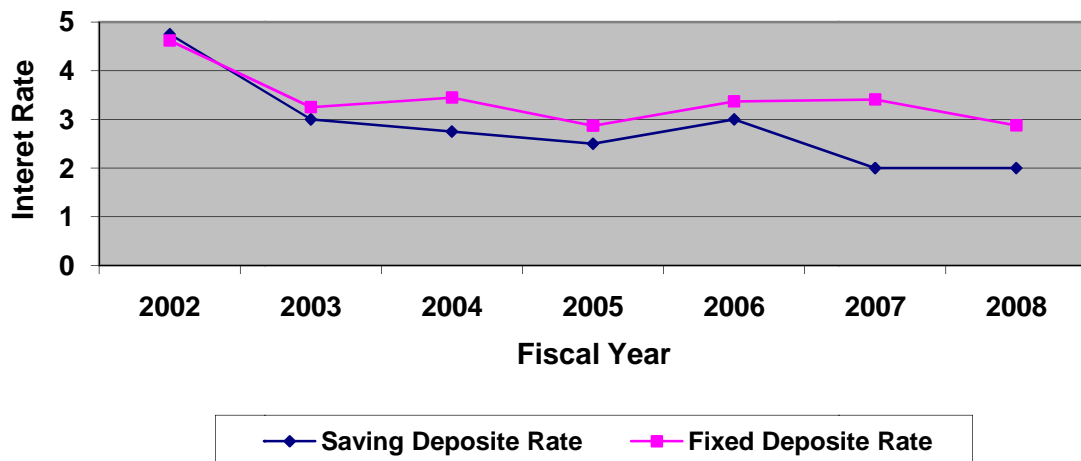
<i>Year (1)</i>	<i>Saving Deposit Interest Rate (2)</i>		<i>Saving Deposit Amount (3)</i>	<i>Fixed Deposit Interest Rate (4)</i>		<i>Fixed Deposit Amount (5)</i>
<b>2002</b>	4.75		4917.1	4.62		3719.2
<b>2003</b>	3		4889.0	3.25		2446.8
<b>2004</b>	2.75		5237.4	3.45		2552.6
<b>2005</b>	2.5		5994.1	2.87		2310.6
<b>2006</b>	3		7026.4	3.37		2078.6
<b>2007</b>	2		8770.8	3.41		3450.2
<b>2008</b>	2		10187.4	2.875		5435.2
<b>Correlation</b>	$r_{23} = -0.6856$			$r_{45} = 0.0122$		
<b>Coeff. Of Det.</b>	$r^2_{23} = 0.4700$			$r^2_{45} = 0.00015$		
<b>t-statistic</b>	t-cal=2.105	t-tab =2.571	Insignificant	t-cal =0.027	t-tab = 2.571	Insignificant

Source: Banking and financial statistics: 43-49, NRB

**Figure 4-1 Deposit Amount of NABIL during different FY**



**Figure 4-2 Interest Rate of NABIL on saving and fixed deposit.**



The table 4-2 shows the total amount of fixed deposit and saving deposits and the interest rates offered on such deposits by NABIL on seven years starting from FY 2002 to FY 2008. The table portrays that the both interest rate has been decreased by greater magnitude. Saving deposit amount has been in increasing order. It means that they move in opposite direction i.e. decrease in interest rate increases the amount of deposit and vice versa. Therefore they should have negative relationship. It can be quantified by calculating correlation coefficient between them. This relationship can also be shown in figure 4-1 and 4-2.

According to table no 4-2, the interest rate on saving deposit has been decreased from 4.75 to 2 during 7 FYs. The declining tendency is small. In the same period the deposit amount was Rs 4917.1 millions but this amount increases to Rs 10187.4 million.

Similarly for fixed deposit the table 4-2 shows that the total amount of fixed deposit and interest rate on fixed deposit offered by NABIL on seven consequent FYs started from 2002 to FY 2008. The table reveals that average fixed interest rate has been decreased from FY 2002 to 2003 and increased in FY 2004 and again decreased in FY 2005 and increased to FY 2007 and again it decrease in FY 2008. The table shows that in the FY 2002, there is no effect on fixed deposit amount by the declination of interest rate but after the FY 2002, decrease in interest rate also decreases of fixed deposit amount and vice versa. In this regards, the substitution effect holds true in the case of fixed deposit. To verify the above trend, it is necessary to calculate the correlation and t-statistics. If correlation coefficient is calculated for saving deposit and deposit amount, then it is  $r_{23} = -0.6856$ . The high negative correlation coefficient indicates that they have inverse relationship among each other. Decrease in interest rate is followed by increase in saving deposit amount and vice versa. The coefficient is determination between these two variables  $r_{23}^2 = 0.4700$  which means that total variation in dependent variable (saving deposit amount) has been explained by independent variables interest rate to the enters 47% and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient between variables is 2.105 (t-cal=2.105). Since the tabulated t-value at 5 level of significance for 5 degree of freedom i.e. t-tab=2.571 is more than calculated value of correlation coefficient is insignificant. As a result null hypothesis is accepted i.e. there is insignificant relation between two variables or the variables are not correlated.

In the same manner, the correlation coefficient between interest rate on fixed deposit and variables are moderately correlated. When interest rate on fixed deposit decreases (increases) the deposit amount also decreases (increases). This is exactly the matter what the theory (substitution effects) says. The coefficient of determination between these two variables is which means total variables in dependent variables (deposit units) is explained by the independent variable (deposit rate) & remaining is due



to the effect at other factors. Similarly test of significance of correlation coefficient between deposit rate and deposit amount gives the value of  $t=0.0272$ . Since the tabulated  $t$ -value at 5 level of significance for 5 degree of freedom i.e.  $t\text{-tab} = 2.571$  is greater than calculated value the correlation co-efficient is insignificant. Here so  $H_0$  is accepted i.e. there is insignificant relation between two variables or the variables are not correlated.

#### 4.2.2 Himalayan Bank Limited. (HBL)

The general interest rate structure for HBL for saving deposit and fixed deposits during past seven fiscal year is as follows.

**Table 4-3 Interest Rate structure on deposits of HBL**

<i>Deposits</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Saving</i>	4.25	4	3.75	3.75	2.75	2	2
<i>Fixed</i>							
7 days	-	-	-	-	-	-	-
14 days	2.5	2.3	2.3	2.3	1.75	1.75	1.75
1 month	3.5	3.3	3.3	3.3	2	2	2
2 months	-	-	-	-	-	-	-
3 months	4.25	4	3.75	3.75	2.5	2.5	2.5
6 months	4.5	4.25	4	4	3	3	3
1 year	5.75	5.5	5.25	5.25	3.75	3.75	3.75
2 yrs / above	6.25	6	5.75	5.75	3.75	3.75	3.75
Whole mean	4.43	4.19	4.01	4.01	2.79	2.68	2.68
Fixed deposit mean	4.46	4.23	4.06	4.06	2.79	2.79	2.79
Std. Deviation	0.7851%						

Source: Banking and financial statistics: 43-49, NRB

From table 4-3 it is clear that the interest rate on deposit of HBL is also in decreasing trend. But during last fiscal year the declining rate shows the unique features. During the first period out the seven FYs, the declining rate of average interest rate is fast, around one percentage point every year. The whole average interest rate is 4.43 in 2002 but it was 4.19, 4.01, 4.01, 2.79, 2.68 and 2.68 in 2003, 2004, 2005, 2006, 2007 and 2008 respectively. It means that decline speed of deposit interest rate of HBL slowed down after FY 2003 because by only decimal each year up to 2007, but it remain same in FY 2008, i.e. 2.68. The deviation is measured by standard deviation which is 0.7851% of each year interest rate.

### Correlation coefficient, coefficient of determination and t-statistics of HBL

**Table 4-4 Relationship between interest rate and deposit amount of HBL**

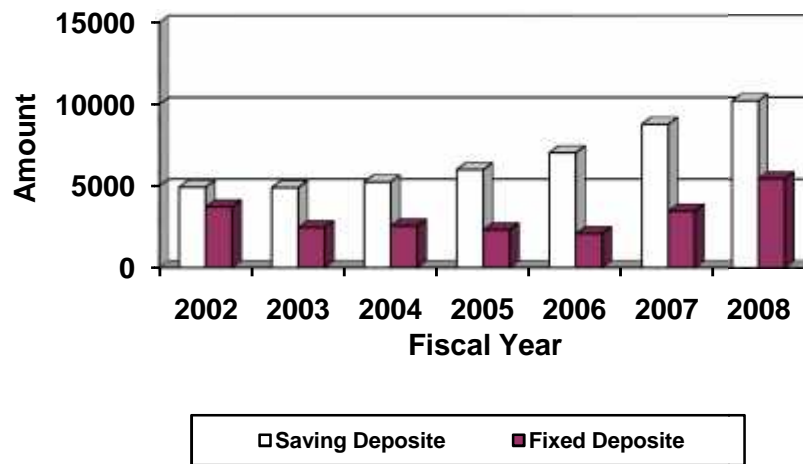
<i>Year (1)</i>	<i>Saving Deposit Interest Rate (2)</i>	<i>Saving Deposit Amount (3)</i>	<i>Fixed Deposit Interest Rate (4)</i>	<i>Fixed Deposit Amount (5)</i>		
<b>2002</b>	4.25	9164.1	4.46	5668.1		
<b>2003</b>	4	9102.8	4.23	6044.9		
<b>2004</b>	3.75	10840.8	4.06	5880.7		
<b>2005</b>	3.75	11719.7	4.06	6043.7		
<b>2006</b>	2.75	12852.4	2.79	6364.3		
<b>2007</b>	2	14582.8	2.79	6350.2		
<b>2008</b>	2	15784.7	2.79	8201.1		
<b>Correlation</b>	$r_{23} = -0.9628$		$r_{45} = -0.6796$			
<b>Coeff. Of Det.</b>	$r^2_{23} = 0.9269$		$r^2_{45} = 0.4619$			
<b>t-statistic</b>	t-cal=7.964	t-tab =2.571	Significant	t-cal =2.071	t-tab = 2.571	Insignificant

Source: Banking and financial statistics: 43-49, NRB

The table 4-4 shows the amount of saving deposit and its interest rate as well as amount of fixed deposit and its interest rate for seven FYs. The table indicates that, in one hand deposit rates are declining where as in other hand deposit amount is increasing in every fiscal years covered by the study. This suggests that interest rate and deposit amount may have negative relationship i.e. when one variable is found to be increased,

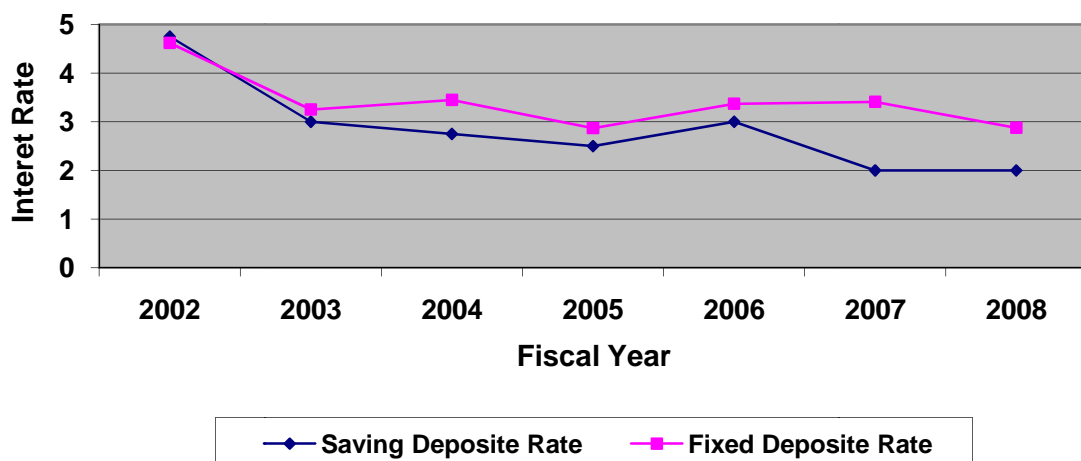
other variable is found to be decreased and vice-versa. This situation can be revealed in figure 4-3 in following ways.

**Figure 4-3 Deposit amount of HBL during different. FYs.**



The figure 4-3 shows saving deposit amount is continuously rising each year but fixed amount is seems to grow each year with some fluctuation. It means that there is rise and fall for fixed deposit amount. Similarly the interests' rate of fixed deposit and saving deposit can also be shown on figure 4-4

**Figure 4-4 : Interest rates of HBL on saving an fix deposit.**



To quantify the exact relationship between interest rate and deposit amount, it is necessary to calculate the correlation coefficient. The correlation coefficient of saving deposit amount and its interest rate  $r_{23}$  is - 0.9628. It means that these two variables have very high negative relationship. Though the two variables don't have direct relationship but correlation coefficient tells that increase in one variable result the decrease in one variable result the decrease in other variables. The case is similar to fixed deposit also. The correlation coefficient for fixed deposit rate and amount  $r_{45}$  is - 0.67963 which is also very high negative correlation. Therefore for both saving and fixed deposit, the case is against the substitution effect. The coefficient of determination of correlation coefficient of saving deposit  $r^2_{23}$  is 0.9269 which indicates that the relation between deposit and interest rate is tied up to level of 92.69 percent and remaining other percentage by other factors. In same manner for fixed deposit the value of coefficient of determination  $r^2_{45}$  is 0.4619.

The value of t-statistics for saving deposit and saving interest is found to be 7.964 (t-cal = 7.964). The tabulated value for this condition 5% level of significance with 5 degree of freedom is 2.571. It means that in this case t-calculation is greater than t-tabulated. So alternative hypothesis is accepted, which means that there is highly significant correlation between saving deposit and interest rate. Similarly for fixed deposit, the calculated value for t is 2.072 (t-cal=2.072). This value is also smaller than t-tabulated. So in this case also the magnitude of correlation coefficient is insignificant.

#### **4.2.3 Everest Bank Limited**

The general structure of deposit interest rate of Everest Bank Limited (EBL) is shown below on the table.

**Table 4-5 Interest Rate structure on Deposit of EBL**

<i>Deposits</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Saving</i>	5.5	5.25	4.25	4.5	3.25	3.25	3.25
<i>Fixed</i>							
7 days	-	-	-	-	-	-	-
14 days	3	3.75	3	3	2.25	2.25	-
1 month	4.5	4.75	3.5	3.5	2.25	2.25	2.75
2 months	-	-	-	-	-	-	2.75
3 months	5	5	4	4	2.5	3	3.0
6 months	5.75	6	5	5	3	3.5	3.5
1 year	7	6.5	5.5	5.5	3.5	4	4
2 yrs / above	7.25	6.75	6	6	4	4.5	4.5
Whole mean	5.43	5.43	4.46	4.5	2.96	3.25	3.39
Fixed deposit mean	5.42	5.46	4.5	4.5	2.92	3.25	3.42
Std. Deviation	1.0230%						

Source: Banking and financial statistics 43-49, NRB

The table 4-5 shows the interest rate structure of EBL and with calculated average interest rate on all deposits and standard deviation. The whole interest rate remains same in 2002 and 2003 i.e. 5.43 then, it decrease to 4.46 in 2004. In FY 2005 it increase up to 4.5. The interest rate is decreased in year 2006 to 2.96 and again increased to 3.25 and 3.39 in 2007 and 2008. Similarly the average fixed deposit rate is decreasing up to 2006 and increased in 2007 and 2008. The standard deviation of 1.0230 shows the dispersion among the interest with in seven FYs time is 1.023%. It further signifies that rate is much dispersed from of all deposit.

## Correlation coefficient of Determination and t-statistics of EBL

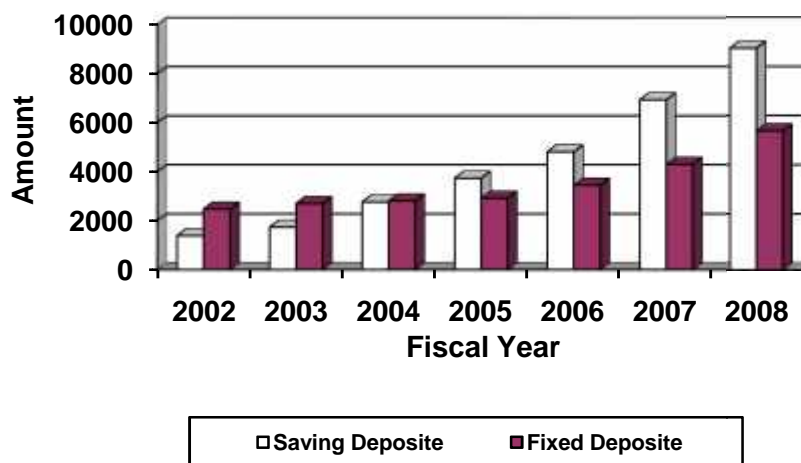
**Table 4-6 Relationship between interest rate and Deposit Amount of EBL**

<i>Year (1)</i>	<i>Saving Deposit Interest Rate (2)</i>	<i>Saving Deposit Amount (3)</i>	<i>Fixed Deposit Interest Rate (4)</i>	<i>Fixed Deposit Amount (5)</i>		
<b>2002</b>	5.5	1384.1	5.42	2470.2		
<b>2003</b>	5.25	1733.3	5.46	2694.6		
<b>2004</b>	4.25	2758.0	4.5	2803.4		
<b>2005</b>	4.5	3730.7	4.5	2914.1		
<b>2006</b>	3.25	4806.9	2.92	3444.5		
<b>2007</b>	3.25	6929.2	3.25	4298.2		
<b>2008</b>	3.25	9018	3.42	5658.7		
<b>Correlation</b>	$r_{23} = -0.8735$		$r_{45} = -0.7144$			
<b>Coeff. Of Det.</b>	$r^2_{23} = 0.7629$		$r^2_{45} = 0.5104$			
<b>t-statistic</b>	t-cal=4.012	t-tab =2.571	Significant	t-cal =2.282	t-tab = 2.571	Insignificant

Source Banking and financial statistics 43-49, NRB

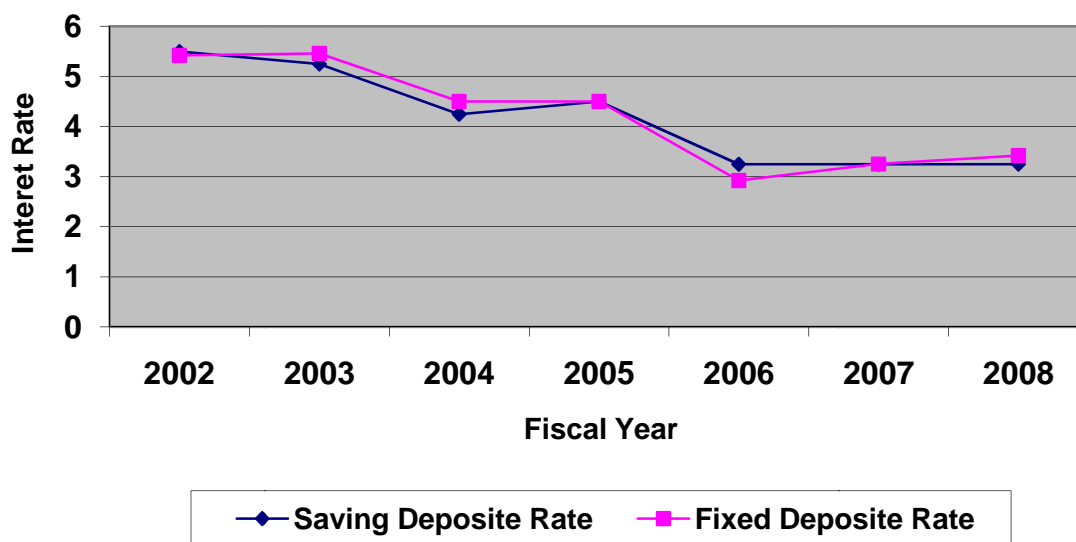
The table 4-6 shows that interest rate and deposit amount are moving in opposite direction. To get the exact relation it is necessary to calculate the correlation coefficient and t-test. Here the data shows that both saving and fixed deposits are out of substitution effect to verify it the value of correlation and t-statistics is necessary. But prior to this it is effective if tabular value can be shown on figure as figure 4-5

**Figure 4-5: Deposit amount of EBL on saving and fixed deposit**



Similarly the relationship between interest rate of saving and fix deposit can shown in figure 4-6

**Figure 4-6: Interest Rates of EBL on saving and fix Deposit.**



The figure 4-5 shows that the deposit amount of EBL is in increasing trend. The increasing tendency is high for saving deposit but low for fixed deposit, the trend is increasing slowly. Similarly figure 4-6 shows that both the interest rate of fixed and saving deposits is in decreasing tendency except in year 2003 and 2008.

The correlation coefficient for saving deposit and its interest rate is found to be  $r_{23} = -0.8735$ , which means that deposit amount and its interest rate have higher degree of

negative correlation. It means increase in one variable result the decrease in other variables. Similarly the coefficient of dependent  $r^2_{23} = 0.7629$ , which means that the value of dependent variables is dependent on independent variables to the extent of 76.29%. Similarly the t-test for same show that the calculated value of t is 4.012 (t-cal =4.012). This value is greater than the t-tabulated value (t-tab =2.571) at 5 degree of freedom and 5% level of significance. Therefore, when t-cal > t- tab then  $H_1$  or alternative hypothechs is accepted i.e. the variables are significantly correlated and their relationship is significant.

Similarly for fixed deposit the correlation  $r_{45}$  is-0.7144 which is negative with high degree of inverse relationship. The t-statistics for fixed deposit shows that its calculated value of t is 2.282, which is smaller than the tabulated value of t i.e. t-cal< t-tab, in such case alternatives hypothesis is rejected. This indicates that the two variables are uncorrelated. The analysis of EBL also shows that substitution effect is not applicable for bank.

#### 4.2.4 Nepal Bangladesh Bank Limited (NBBL)

As similar to previous part it is better to present the general interest rate structure before entering to the main analysis. The interest rate structure for NBBL on saving and fixed deposits for past seven FYs are presented on table 4-7

**Table 4-7 Interest Rate structure on Deposit of NBBL**

<i>Deposits</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Saving</i>	6	5.5	5.5	4.5	4.75	4.5	4.5
<i>Fixed</i>							
7 days	-	-	-	-	-	-	-
14 days	-	-	-	-	-	-	-
1 month	4	3.5	3.5	3.5	3.5	3.5	3.5
2 months	-	-	-	-	-	-	-
3 months	5	4.5	4.5	4	4	4	4
6 months	5.5	5.5	5.5	4.5	4.5	4.5	4.5
1 year	5	7	7	6.5	4.75	4.75	4
2 yrs / above	7.75	7.75	7	5	5	5	5
Whole mean	5.88	5.63	5.42	4.38	4.42	4.38	4.38
Fixed deposit mean	5.85	5.65	5.4	4.35	4.35	4.35	4.35
Std. Deviation	0.6831%						

Source Banking and financial statistics no 43-49, NRB



The table 4-7 portrays the interest rate of NBBL on saving deposit and fixed deposits. All the interest rate on deposit is on decreasing trend except in year 2006. But the tendency towards decrement is similar to HBL because interest rates on first few FYs were decreasing in large gap. But after 2003 the falling pace was very slow as they fall on gap of decimals. In the seven years the interest rate is decline by 2%. This can be shown clearly if average of all interest rate is taken. The average interest rate for whole (both fixed and saving) account is 5.88, 5.63, 5.42, 4.38, 4.42, 4.38 and 4.38 for FYs 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively. The deviation is measured by standard by standard deviation which is 0.6831% of each year interest rate.

### Correlation coefficient, coefficient of determination and t-statistics of NBBL

**Table 4-8 Relationship between interest rate and Deposit of NBBL**

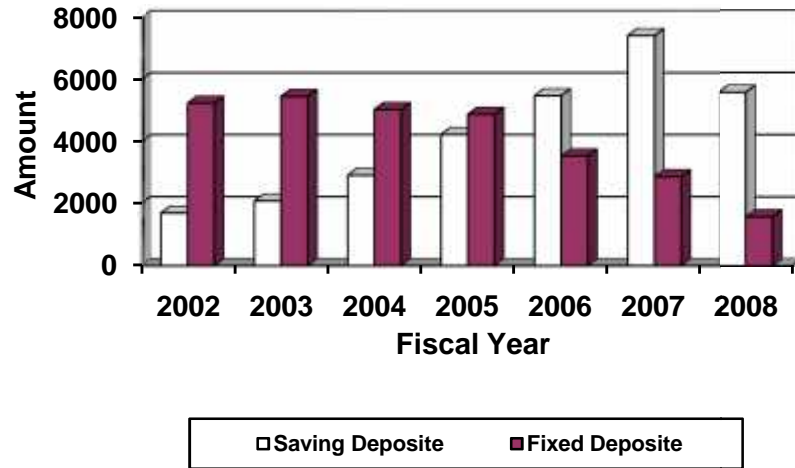
<i>Year (1)</i>	<i>Saving Deposit Interest Rate (2)</i>	<i>Saving Deposit Amount (3)</i>	<i>Fixed Deposit Interest Rate (4)</i>	<i>Fixed Deposit Amount (5)</i>		
<b>2002</b>	6	1694.9	5.85	5236.8		
<b>2003</b>	5.5	2086.9	5.65	5453.6		
<b>2004</b>	5.5	2913.6	5.4	5031.6		
<b>2005</b>	4.5	4225.9	4.35	4875.7		
<b>2006</b>	4.75	5475.2	4.35	3536.6		
<b>2007</b>	4.5	7414.8	4.35	2887.0		
<b>2008</b>	4.5	5582.9	4.35	1578.1		
<b>Correlation</b>	$r_{23} = -0.8787$		$r_{45} = 0.7403$			
<b>Coeff. Of Det.</b>	$r^2_{23} = 0.7721$		$r^2_{45} = 0.5481$			
<b>t-statistic</b>	t-cal=4.115	t-tab =2.571	Significant	t-cal =2.462	t-tab = 2.571	Insignificant

Source: Banking and financial statistics 43-49, NRB

The table 4-8 also shows saving deposit amount is in increasing trend though the interest rate is declining trend. But fix deposit seems increasing till FY 2003 and decreasing afterwards. It means interest rate and deposit amount have inverse

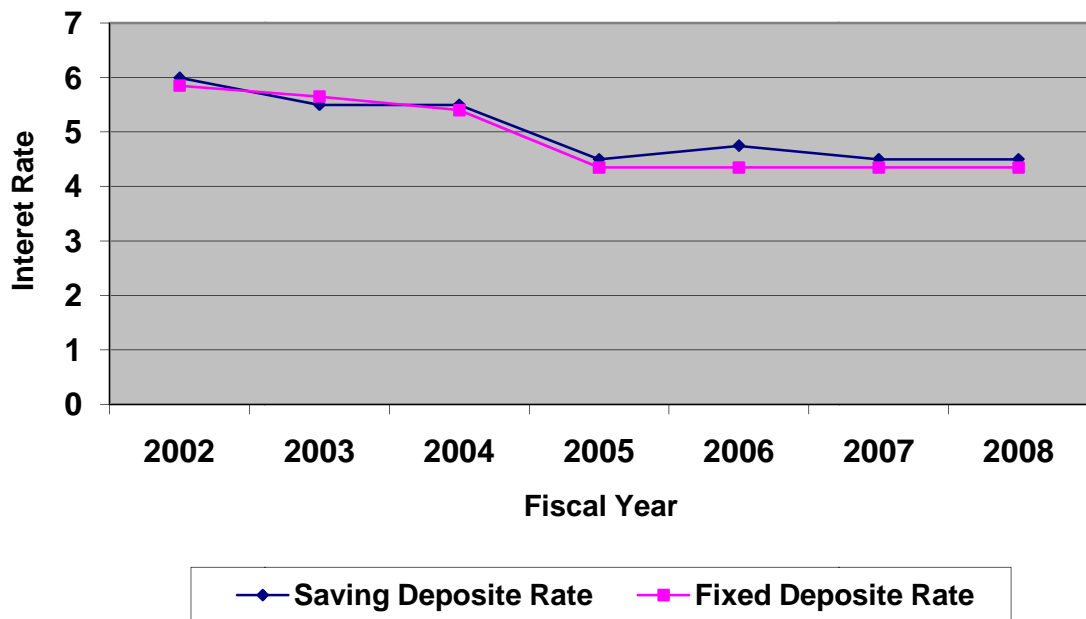
relationship. But to find exact quantity of inverse relationship it is necessary to compute the correlation coefficient. Price to this it is helpful if the data are presented on figure 4-7

**Figure 4-7 Deposit amount of NBBL during different FYs**



The figure shows that NBBL collected more funds on fix deposit in last seven FYs. But this case was opposite in other banks. Similarly the relationship of saving interest rate and fixed deposit rate can be shown on figure 4-8.

**Figure 4-8: Interest Rate of NBBL on Saving and Fixed Deposit**



The value for correlation between saving deposit and interest rate is  $-0.8787$  ( $r_{23} = -0.8787$ ). This is high degree of negative correlation. It means that during the last seven fiscal years there was share increase in saving deposit amount even though there was share decline in the saving interest rates. The coefficient of determination  $r^2_{23}$  is  $0.7721$ . Similarly the calculated value for  $t$  is  $4.115$  for saving account. The value of tabulated  $t$  at  $5$  d. f and  $5\%$  level of significance is only  $2.571$ . So for saving deposit  $t\text{-cal} > t\text{-tab}$ , and hence alternative hypothesis is accepted. It means that there is significant relationship between two variables (deposit amount and interest rate). It means saving deposit keeps increasing when the saving deposit rates goes falling down.

In same manner fixed deposit the value of correlation coefficient is  $r_{45} = 0.7403$  which indicates that the two variables have positive relationship. In other words when increment occurs on one variable then there appears increment on other variables. To identify the significance or insignificance of this correlation, it is necessary to calculate the value of  $t$ -statistics. The calculated value at  $t$  is  $2.462$ . Similarly the tabulated value for  $t$  is  $2.571$ , which is less than calculated  $t$ . As a result null hypothesis is accepted. It means correlation coefficient is insignificant. Thus from the both study it reveals that substitution effect is applicable for NBBL. That means variables of NBBL are not correlated.

#### **4.2.5 Nepal State Bank of India. (NSBI)**

The general interest rate structure of NSBI bank for last fiscal years is given on the table 4-9. The interest rate structures for NSBI on saving and fixed deposits for past seven FYs are as follows.

**Table 4-9 Interest Rate Structure on Deposit of NSBI**

<i>Deposits</i>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<i>Saving</i>	5.25	5.25	5.25	3.5	3.25	3.25	3.25
<i>Fixed</i>							
7 days	-	-	-	-	-	-	-
14 days	-	2.5	2.5	2.5	-	-	-
1 month	-	3	3	2.75	2.75	2.75	2.75
2 months	-	-	-	-	-	-	-
3 months	5	4	4	3.25	3.25	3.25	3.25
6 months	5.75	5	5	3.75	3.75	3.75	3.75
1 year	7	6	6	4	4	4.5	4
2 yrs / above	7.25	6.25	6.25	4.5	4.5	4.5	4
Whole mean	6.05	4.57	4.57	3.46	3.58	3.67	3.55
Fixed deposit mean	6.25	4.46	4.46	3.46	3.65	3.75	3.5
Std. Deviation	0.9426%						

Source: Banking and financial statistics 43-49, NRB

The table 4-9 shows the interest rate structure of NSBI and with calculated average interest rate on all deposits and standard deviation. The whole interest rate has decreased from FY 2002 to 2003 and increased from 2006 up to FY 2007 and again it decrease in FY 2008. The whole interest rate (both fixed and saving) account is 6.05, 4.57, 4.57, 3.46, 3.58, 3.67 and 3.55 for FYs 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively. The interests on first few FY were decreasing on large gap but remains constant on FY 2003 and 2004. But after FY 2006 then whole interest rate is increasing slowly on gap of decimals but it decrease in FY 2008 by decimals. The average fixed deposit rate is as similar as whole average interest rate and standard deviation is 0.9426% within seven years period.

## Correlation coefficient, coefficient of determination and t-statistics of NSBI

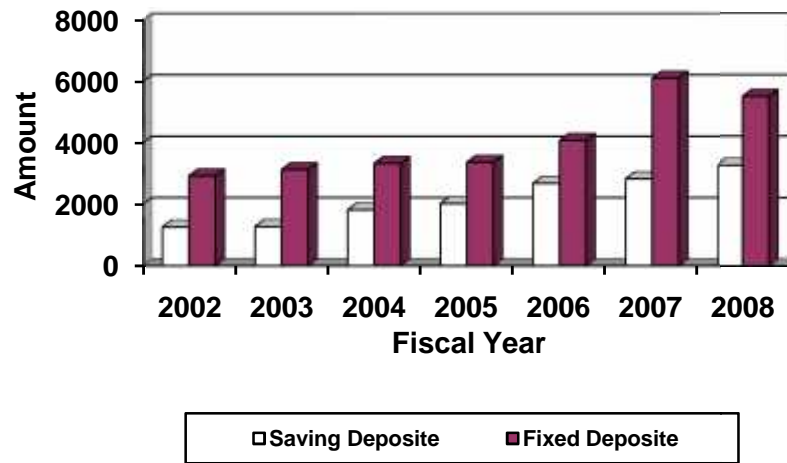
**Table 4-10 relationship between interest rate and deposit amount of NSBI**

<i>Year (1)</i>	<i>Saving Deposit Interest Rate (2)</i>	<i>Saving Deposit Amount (3)</i>	<i>Fixed Deposit Interest Rate (4)</i>	<i>Fixed Deposit Amount (5)</i>		
<b>2002</b>	5.25	1259.5	6.25	2929.4		
<b>2003</b>	5.25	1274.7	4.46	3132.7		
<b>2004</b>	5.25	1820.7	4.46	3337.6		
<b>2005</b>	3.5	2024.2	3.46	3371.4		
<b>2006</b>	3.25	2684.7	3.65	4086.4		
<b>2007</b>	3.25	2832.7	3.75	6116.2		
<b>2008</b>	3.25	3274.7	3.5	5517.3		
<b>Correlation</b>	$r_{23} = -0.8843$		$r_{45} = -0.5623$			
<b>Coeff. Of Det.</b>	$r^2_{23} = 0.7821$		$r^2_{45} = 0.3161$			
<b>t-statistic</b>	t-cal=4.235	t-tab =2.571	Significant	t-cal =1.520	t-tab = 2.571	Insignificant

Source: Banking and Financial statistics 43-49, NRB

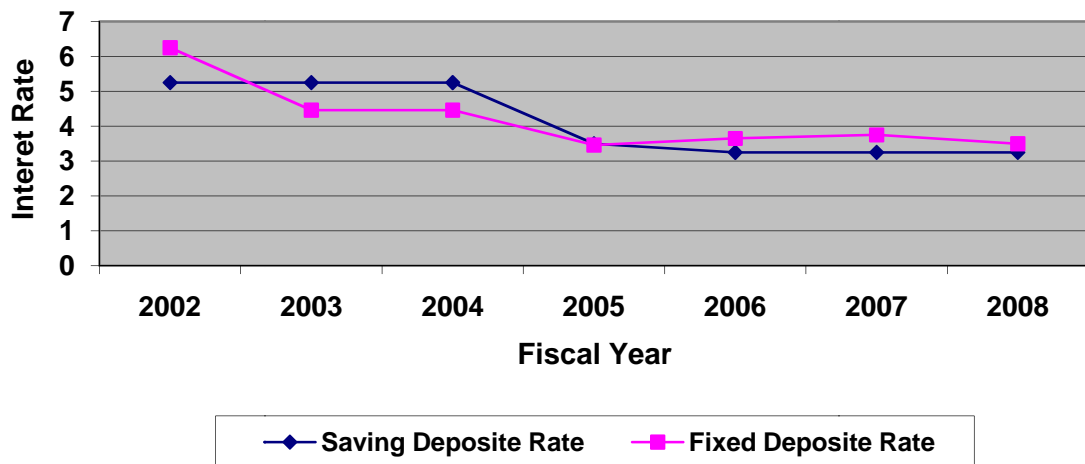
In table no 4-10 saving amount and deposit rates are arranged in systematic order. The outlook of the table shows that the interest rate has been falling since 2002 on both saving and fixed deposit but with a little bit increase in fixed deposit FY 2006 and FY 2007 on decimals. The saving deposit amount is in an increasing trend. So there is an inverse relationship between interest rate and saving deposit amount. The saving amount has increased when interest rates fall down. But fixed deposit amount is in an increasing trend either interest rate falls or increases. To determine the magnitude of relation, correlation coefficient should be calculated and to identify the strength or weakness of relationship it is necessary to calculate the t-test. But prior to all it is clear if we show these relations on figure 4-9 and 4-10.

**Figure 4-9 Deposit Amount of NSBI during different FY**



The figure shows that NSBI collected more funds on fixed deposit rather than saving deposit in last seven FYs. Similarly the relation ship between interest rate of saving and fix deposit can be shown in figure 4-10.

**Figure 4-10 Interest Rates of NSBI on saving and fix deposit.**



The correlation coefficient for saving interest rate and deposit amount,  $r_{23}$  is found to be negative of  $-0.8843$ . This value indicates that they have very high negative or inverse relationship. Increase in one variables lead to decrease in other variables. This is extremely against the theory suggested by the "Substitution effect." Similarly, the coefficient of determination between two variables,  $r^2_{23}$  is  $0.7821$ , which means that total

variation in interest rate on deposit has been explained by supply of deposits to the extent of 78.21 percent and remaining is the effect of other factors. The t-value for testing the significance of the correlation coefficient between variables is 4.235 (t-cal=4.235) which is significantly level of significance with 5 degree of freedom. Since the calculated value is significantly greater than tabulated valued, the conclusion is drawn that correlation coefficient between variables is significant. This means that the interest rate on saving deposit and deposit amount of NSBI are significantly correlated and increase in the supply if fund (deposit) brings the decrease in interest rate on deposit.

Similarly, correlation coefficient for fixed deposit interest and fixed deposit amount,  $r_{45}$  is found to be -0.5623, which indicates that the two variables have negative relationship. In other words, when increment occurs on one variable then there appears decrement on other variable. This relation can be clearly explained by the coefficient of determination, which is 0.3161, means that total variation in interest rate on fixed deposit has been explained by supply of deposits to the extent of 31.61 percent and remaining is the effect of other variables. To identify the significance or insignificance of this correlation, it is necessary to calculate the value of t-statistics. The calculated value of t is 1.520. Similarly the tabulated value for t is 2.571 which is less than calculated value. As a result null hypothesis is accepted. Test of significance of correlation coefficient between fixed deposit rate and fixed deposit amount of NSBI makes clear that the variables are statistically insignificant. Hence, the variables of NSBI are not correlated.

#### **4.2.6 Standard Chartered Bank Limited (SCBL)**

As similar to previous part, it is better to present the general interest rate structure before entering to the main analysis. The interest rate structure for SCBL on saving and fixed deposits for part seven FYs are as presented on table 4-11.

**Table 4-11 Interest Rate Structure on Deposit of SCBL**

<i>Deposits</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Saving</i>	3	2.5	2.5	2	1.75	2	2
<i>Fixed</i>							
7 days	-	-	-	-	-	-	-
14 days	2.5	2.5	2	1	1	1	1
1 month	3	3	2.5	2	1.5	1.5	1.5
2 months	-	-	-	2	1.5	1.5	1.5
3 months	3.5	3	2.5	1.5	1.5	1.5	1.5
6 months	4.5	3.5	3	2.5	1.75	1.75	1.75
1 year	5.5	4.5	3.5	2.25	2.25	2.25	2.25
2 yrs / above	5.25	4.25	4.25	2.5	2.5	2.5	2.5
Whole mean	3.89	2.75	2.89	1.97	1.72	1.75	1.75
Fixed deposit mean	4.04	2.79	2.96	1.96	1.71	1.71	1.71
Std. Deviation	0.8240%						

Source: Banking and Financial statistics **37-49**, NRB

The above table shows that the average interest rate on all deposits of SCBL within seven years time period is in decreasing trend. The rate was 3.89 in the FY 2002 and 1.75 in 2008. The average interest rates is slowly decreasing from FY 2002 to 2006 but, little bit increase in 2007 by decimals and remain same in FY 2008. The rate decreased successively to 3.89, 2.75, 2.89, 1.97 and 1.72 in the FYs 2002, 2003, 2004, 2005 and 2006 respectively. The standard deviation of 0.8240 shows that the scattered ness among the average interest rate on all deposits from the mean of all average rates is 0.824% within these seven years time period.



## Correlation coefficient, coefficient of determination and t-statistics of SCBL

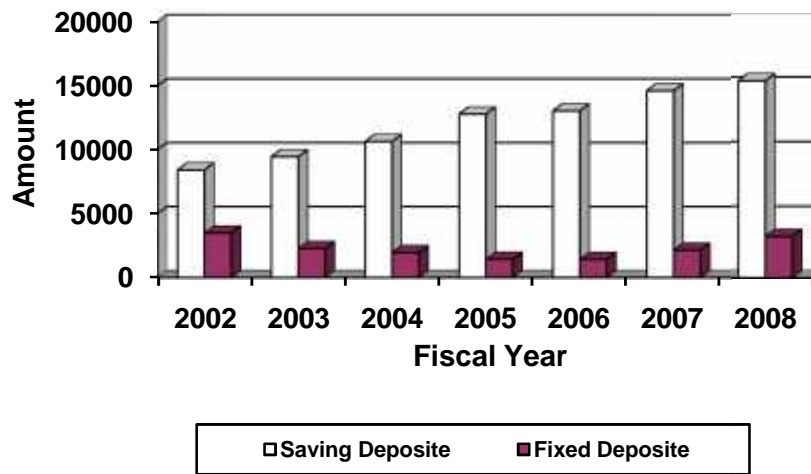
**Table 4-12 Relationship between Interest rates and deposit Amount of SCBL**

<i>Year (1)</i>	<i>Saving Deposit Interest Rate (2)</i>	<i>Saving Deposit Amount (3)</i>	<i>Fixed Deposit Interest Rate (4)</i>	<i>Fixed Deposit Amount (5)</i>		
<b>2002</b>	3	8404.6	4.04	3471.7		
<b>2003</b>	2.5	9441.8	2.79	2264.9		
<b>2004</b>	2.5	10633.1	2.96	1948.5		
<b>2005</b>	2	12771.8	1.96	1428.5		
<b>2006</b>	1.75	13027.7	1.71	1416.4		
<b>2007</b>	2	14597.5	1.71	2163.3		
<b>2008</b>	2	15244.2	1.71	3196.5		
<b>Correlation</b>	$r_{23} = -0.8685$		$r_{45} = 0.5126$			
<b>Coeff. Of Det.</b>	$r^2_{23} = 0.7543$		$r^2_{45} = 0.2628$			
<b>t-statistic</b>	t-cal=3.917	t-tab =2.571	Significant	t-cal =1.335	t-tab = 2.571	Insignificant

Source: Banking and Financial statistics 43-49, NRB

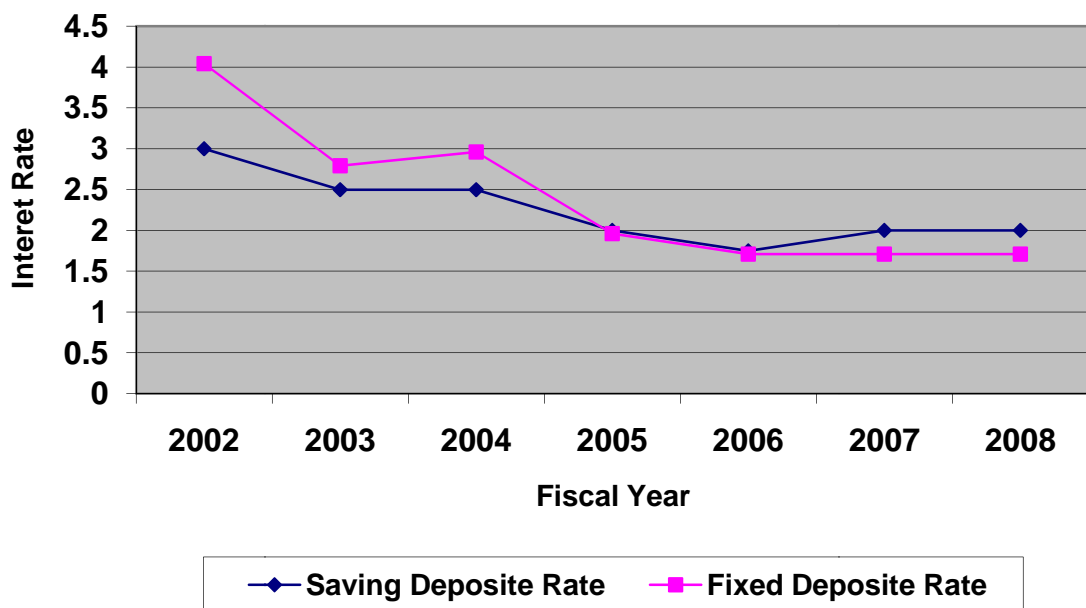
The table 4-12 also shows saving deposit amount is in increasing trend though the interest rate is in declining trend except in FY 2006 and FY 2007. But fix deposit amount seems in decreasing trend till FY 2006 because of fall in interest rate and slightly increased in FY 2007 on deposit. But the declining speed of interest rate is quite higher than that of declining speed of deposit amount. It means that they move in same direction. These suggest that there is positive relationship but to determine the magnitude of relation, correlation coefficient should be calculated and to identify the strength or weakness of relationship it is necessary to calculate the t-test. But prior to all it is clear if we show these relations on figure 4-11 and 4-12.

**Figure 4-11 Deposit amount of SCBL during different FY.**



The figure shows that SCBL collected more funds on saving deposit in last seven FYs rather than fixed deposit. It is clear that SCBL collects few funds from fixed deposit in comparison of saving deposit. Satisfactory collection is done on saving deposit but bank cannot able to collect satisfactory amount of fixed deposit which is helpful to invest as a long term debt. The relationship between interest rate of saving and fix deposit can be shown on figure 4-12.

**Figure 4-12 Interest Rates on SCBL on Saving and Fix Deposit.**



The Correlation coefficient for saving deposit and its interest rate is found to be  $r_{23} = -0.8685$ , which means that deposit amount and its interest rate, have higher degree of negative correlation. It means increase in one variable result the decrease in other variables. Similarly the coefficient of determination,  $r^2_{23} = 0.7543$  which means that the value of dependent variables is dependent on independent variables to the extent of 75.43%. Similarly the t-test for same shows that the calculated value of t is 3.918 (t-cal=3.918). This value is greater than the tabulated value (t-tab=2.571) at 5 degree of freedom and 5 level of significance. Therefore when t-cal > t-tab, then  $H_1$  or alternative hypothesis is accepted i.e. variables are significantly correlated and their relationship is significant.

Similarly the correlation for fixed deposit interest rate and fixed deposit amount,  $r_{45}$  is found to be 0.5126. This shows that they have positive correlation. It means that the increase in deposit interest rate stimulates saving on fixed deposit. This relation can be clearly explained by the coefficient of determination, which is 0.2628, means that total variation in interest rate on fixed deposit has been explained by supply of deposits to the extent of 26.28% and remaining 73.72% is the effect of other variables. The t-value for testing the significance of the correlation coefficient between variables is 1.335 (t-cal =1.335). Which is significantly smaller than tabulated t value (t-tab = 2.571) at 5% level of significance with 5 degree of freedom. Since the calculated value is significantly smaller than tabulated value, the conclusion can be drawn that correlation coefficient between variables is insignificant. This means that the correlation between interest rate on fixed deposit amount of SCBL shows the negative correlation, the t-test indicates that there is insignificant correlation between them.

### **4.3 Analysis of Lending and Interest Rate**

This is second area of the analysis where mainly the relationship between lending interest rate and its effect upon lending amount is attempted to study. Generally, when there is higher interest rate (especially lending or credit rates) in the economy people normally borrow lesser amount than the period when lending rate is low. According to theory, when there is low lending rate, then there should be higher amount of borrowing by the user of fund. Higher amount of borrowing indicates higher investment in the country or higher transaction in trade. This is necessary for the growth of the economy.

So this study tries to explore the relationship between lending rate and lending amount in Nepalese economy.

#### 4.3.1 NABIL Bank Limited (NABIL)

The sector where NABIL supplied credit during last seven FYs and their corresponding interest rate, average interest rate and lending amount are presented in the table 4-13

**4-13 Lending Rate of NABIL on different sectors during seven FYs**

<i>Sector</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<b>Overdraft</b>	-	-	-	-	-	-	-
<b>Export credit</b>	11.5	11.25	11	11	11	11	10.5
<b>Import LC</b>	11.5	11.5	11	11	11	11	10.5
<b>HMG Bond</b>	10.5	8	7.5	7.5	7.5	7.5	7.5
<b>BG/CG</b>	10.5	9.5	9	9	9	9	7.5
<b>Other Guarantee</b>	-	10.5	10	10	10	10	8.5
<b>Industrial Loan</b>	-	-	-	-	-	-	-
<b>Commercial Loan</b>	-	-	-	-	-	-	-
<b>Priority Sector Loan</b>	14	13.5	13	13	12	12	11
<b>Poorer sector Loan</b>	10.5	9	9	9	9	9	9
<b>Term Loan</b>	13.5	13.25	13	13	13	13	12
<b>Working Capital</b>	13	12.5	12	12	12	12	11.5
<b>Hire Purchase</b>	14	13	12	12.5	12.5	12	12
<b>Others</b>	14	13.5	13	13	13	13	12
<b>Average Int. Rate (1)</b>	12.30	11.41	10.95	11	10.91	10.86	10.18
<b>Lending Amount (2)</b>	8173.1	7072	7996.9	8635.1	11078	13021.0	15657.1
<b>Correlation (<math>r_{12}</math>)</b>	-0.7173						
<b>Coeff. Of Det. (<math>r^2_{12}</math>)</b>	0.5146						
<b>t-statistics</b>	t-cal = 2.302		t-tab = 2.571		Insignificant		
<b>Standard deviation</b>	0.6465%						

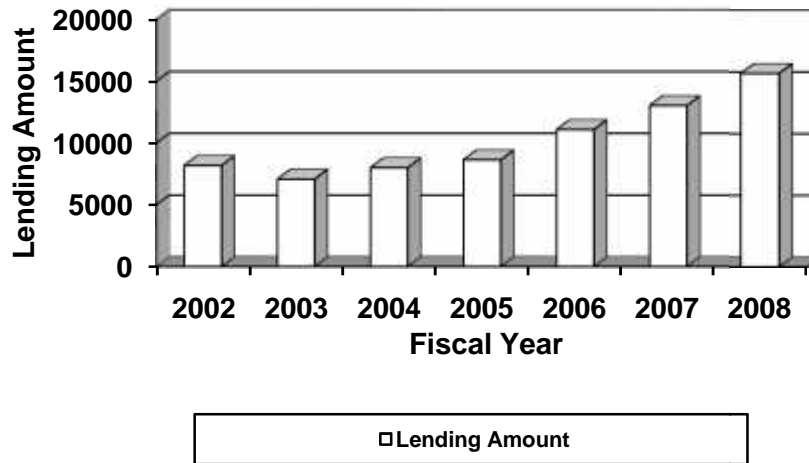
Source: Banking and Financial statistics 39-47, NRB

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

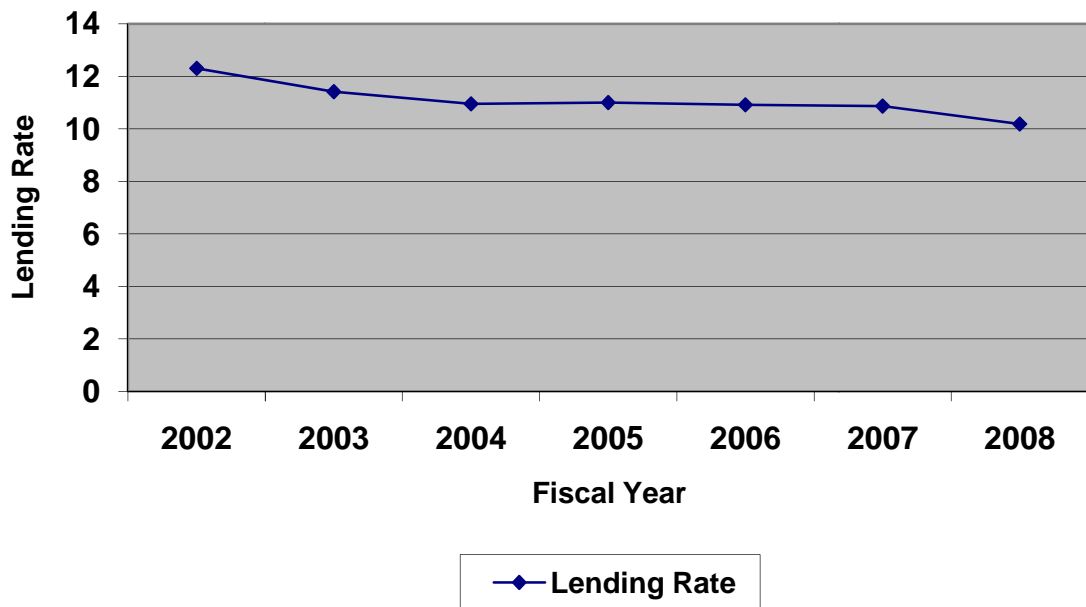
According to table 4-13 it shows that interest rate on lending on different area are in declining trend. The table shows that the maximum interest rate is 14 in FY 2002 and minimum rate is 7.5 on 2008. This shows that the interest rate declined drastically during the seven FYs period. Generally the productive sector loan rate (like commercial loan, industrial loan, priority sector loan, working capital rate and so on) and non productive sector loan like loan against government bond, BG/CG and so an are decreasing in similar ratios. According to theory in order to induce the investment in the country or expansion of trade, the productive sector loan should be available at cheaper rate. But the table shows that these sectors loan were somewhat costlier than other non-productive loan.

If the average of each fiscal year is taken, then it shows that average lending interest rate was 12.30(2002), 11.41(2003), 10.95(2004), 11(2005), 10.91(2006), 10.86(2007) and 10.86(2008). The standard deviation for average interest rate was 0.6465, which shows the deviation from mean return. The average rate is also in decreasing trend. The decreasing tendency was not smooth. It means that the rate declined each year with different rate. In preceding year the declination was quite fast where as the declining tendency was little small in later year. This concludes that interest rate on lending is also in decreasing tendency for past few years. With harmony to interest rate, the lending amount of NABIL is seen to be in increasing trend except in FY 2003. These can be also be present in figure 4-13 and 4-14

**Figure 4-13 Lending Amount of NABIL during different FYs**



**Figure 4-14 Average lending rate of NABIL during different FYs**



**Correlation coefficient, Coefficient of determination and t-statistics of NABIL**

From table 4-13 the correlation coefficient (simple correlation) between lending rate and lending amount  $r_{12}$  is - 0.7173. It is negative correlation. It indicates that

increment in one variable result the decrement in other variables or vice-versa. Decrement in lending interest rate increases the lending amount because people preferred more credit from the bank when bank reduced the lending interest rate. This condition matches with the theory. Similarly the coefficient of determination between two variables  $(r_{12})^2$  is 0.5146. It means that the relationship between dependent variable and independent variable is defined up to the extent of 51.46%. The remaining percentage is due to other factors.

Similarly the calculate value for NABIL is 2.302 (t-cal = 2.302). This value is less than tabulated value, (t-tab = 2.571) with level of significance 5 and d. f 5. In this condition  $H_0$  is accepted it means that there is no significant correlation between the two variables. In other words their relation is in significant. Though the correlation coefficient shows that these two variables have moderate level of correlation but t-statistics verify that their relation is insignificant. In conclusion the inverse relationship between lending rate and lending amount is not exactly applicable for NABIL. Now it is clear that the increase in lending amount is not significantly due to decrease in lending interest rate.

#### **4.3.2 Himalayan Bank Limited (HBL)**

The sector where HML granted its credit during last seven FYs and their corresponding interest rate and lending amount are presented in the table 4-14

**Table 4-14 Lending Rate of HBL on different sectors during seven FYs**

<i>Sector</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<b>Overdraft</b>	13	13.75	13.25	13.25	12	12	10
<b>Export credit</b>	9.5	9.5	9.5	9.5	8.75	8.75	8.75
<b>Import LC</b>	13	12.75	12.25	12.25	11.75	11.75	9.5
<b>HMG Bond</b>	8.5	8	8	8	6	6	6.5
<b>BG/CG</b>	9.5	10.5	10.5	10.5	9.25	9.25	8
<b>Other Guarantee</b>	10.5	10.5	10.5	10.5	-	-	-
<b>Industrial Loan</b>	14	13.5	13	13	12.75	12.75	-
<b>Commercial Loan</b>	14	13.75	13.25	13.25	12.5	12.5	-
<b>Priority Sector Loan</b>	14	13	13	13	12.25	12.25	10
<b>Poorer sector Loan</b>	8.5	8.5	8.5	8.5	8.25	8.25	8.25
<b>Term Loan</b>	13.5	13.5	13	13	11.75	11.75	10.5
<b>Working Capital</b>	13.2	13.25	13	13	-	-	-
<b>Hire Purchase</b>	13	13	13	13	11.5	11.5	9
<b>Others</b>	16.25	16.25	15.75	15.75	13.5	13.5	12
<b>Average Int. Rate (1)</b>	12.18	12.13	11.89	11.89	10.85	10.85	9.25
<b>Lending Amount (2)</b>	8836.6	9673.5	10894.2	13081.7	13245.0	15516.0	17672
<b>Correlation (<math>r_{12}</math>)</b>	-0.9127						
<b>Coeff. Of Det. (<math>r^2_{12}</math>)</b>	0.8329						
<b>t-statistics</b>	t-cal = 4.993		t-tab = 2.571			Significant	
<b>Standard deviation</b>	1.0619%						

Source Banking and financial statistics No: 43-49, NRB

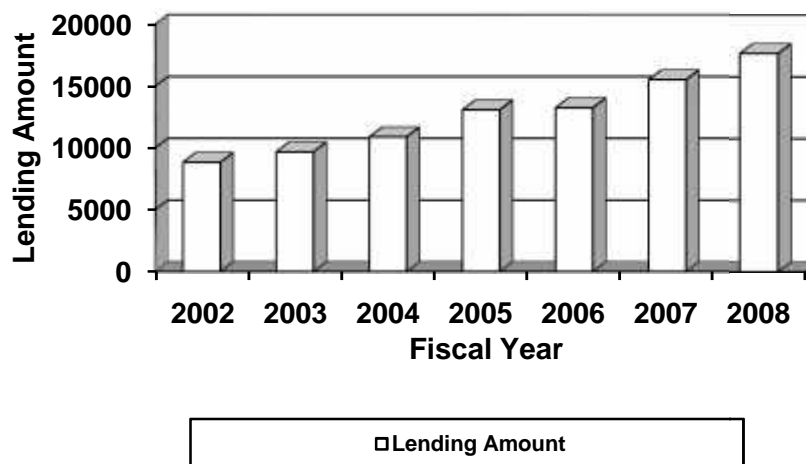
The table 4-14 shows the interest rate of HBL on lending on seven fiscal years granted in different sectors. HBL lending rate was somewhat more than NABIL. The maximum interest rate quoted by the HBL during seven FYs was 16.25 on “other” categories. The interest rate of HBL is also in decreasing trend but the decreasing magnitude is very little. The average interest rate of HBL an FY 2002 was 12.18 and which becomes 9.25 in FY 2008, it means that average interest rate in as declining



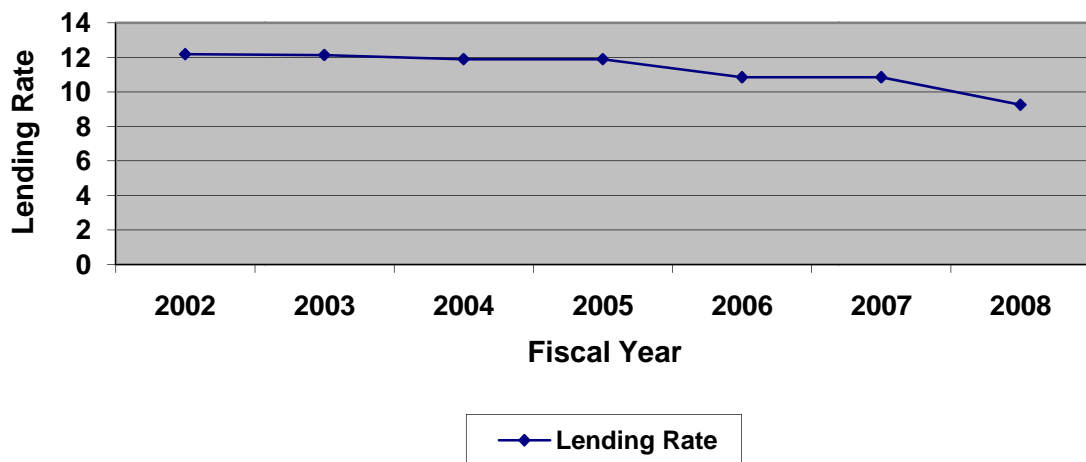
slowly. During seven years period the interest rate falls to 1.2 on average. The average interest rate was 12.18, 12.13, 11.89, 11.89, 10.85, 10.85 and 9.25 in FYs 2002, 2003, 2004, 2005, 2006, 2007 and 2008, respectively. Conversely the lending amount of HBL is seen to be in increasing trend. In comparison to FY 2002, lending of 2008 is near about two times more. So it can be said that lending of HBL was expanded rapidly within that seven fiscal periods these phenomenon shows that lending interest rate and lending amount have inverse relationship.

To quantify this relationship it is necessary to calculate correlation and t-statistics. But prior to this it is fruitful if the trend of lending interest rate and lending amount is shown in the figure 4-15

**Figure 4-15. Leading amount of HBL during different FYs**



**Fig 4-6 Average Lending Rate of HBL during different FYs**



The figure 4-16 shows that interest rate of lending falls rapidly up to FY 2003. But after FY 2003, the falling speed was very slow. It means the interest rate falls only by decimal percentage point.

### **Correlation coefficient, Coefficient of determination and t- statistics of HBL**

The correlation coefficient of HBL between lending amount and lending rate is - 0.9127. It is high degree negative correlation. It indicates that increments in one variable result the decrement in other variables or vice-versa. In this case decrease in lending interest rate increases the lending amount. People preferred more credit from HBL when bank reduced the lending interest rate. Similarly the coefficient of determination between two variables ( $r^2_{12}$ ) =0.8329. It means that the relationship between dependent variable and independent variable is defined up to the extent of 83.29%. In other words the increase in lending amount by decrease in interest rate is defined up to the extent of 83.29% where as remaining percentage is due to other factors.

Similarly the t- statistics for HBL is 4.9935 (t-cal=4.9935) the tabulated value at 5 level of significance with 5 d.f is 2.571. Comparing the t-tab and t-cal it is clear that t-cal > t- tab, so alternative hypothesis is accepted and null hypothesis is rejected. It means that the relation shown by correlation coefficient is highly significant. That is the inverse relation shown by two variables lending amount and lending rate is strong. The increase in demand of lending amount is due to the decrease in lending rate. Therefore, according to t-statistics the lending rate is also another strong as well as important factor that shape the lending amount. In conclusion the inverse relation of HBL on two variables is in accordance with theory.

### **4.3.3 Everest Bank Limited. (EBL)**

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

**Fig 4-15 Lending Rate of EBL on different sectors during seven FYs**

<i>Sector</i>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Overdraft</b>	13.5	13.5	12.5	12.5	11.5	11	11
<b>Export credit</b>	11	10.5	10	10	8.5	8	8
<b>Import LC</b>	11.5	11.75	11.75	11.75	10	10	10
<b>HMG Bond</b>	8.5	8	8	8	6.5	6	6
<b>BG/CG</b>	11.5	11	10.5	10.5	8.5	8.5	8.5
<b>Other Guarantee</b>	-	-	-	-	-	-	-
<b>Industrial Loan</b>	13.5	13.5	13	13	12	11	11
<b>Commercial Loan</b>	13.5	13.5	12.5	12.5	11.5	11	11
<b>Priority Sector Loan</b>	13.5	13.5	13	13	12	-	-
<b>Poorer sector Loan</b>	9.5	11	11	11	11	10	10
<b>Term Loan</b>	13.5	13.5	13.5	13.5	12	11	11
<b>Working Capital</b>	13.5	13.5	12.5	12.5	10.5	11	11
<b>Hire Purchase</b>	13.5	13.5	13	13	12	7	10.5
<b>Others</b>	10	13.5	13.5	13.5	12	11	11
<b>Average Int. Rate (1)</b>	12.04	12.33	11.90	11.90	10.62	9.63	9.92
<b>Lending Amount (2)</b>	2963.7	3969.6	5030.9	6116.6	7914.4	10124.4	14059.2
<b>Correlation (<math>r_{12}</math>)</b>	-0.8998						
<b>Coeff. Of Det. (<math>r^2_{12}</math>)</b>	0.8097						
<b>t-statistics</b>	t-cal = 4.613		t-tab = 2.571		Significant		
<b>Standard deviation</b>	1.1107%						

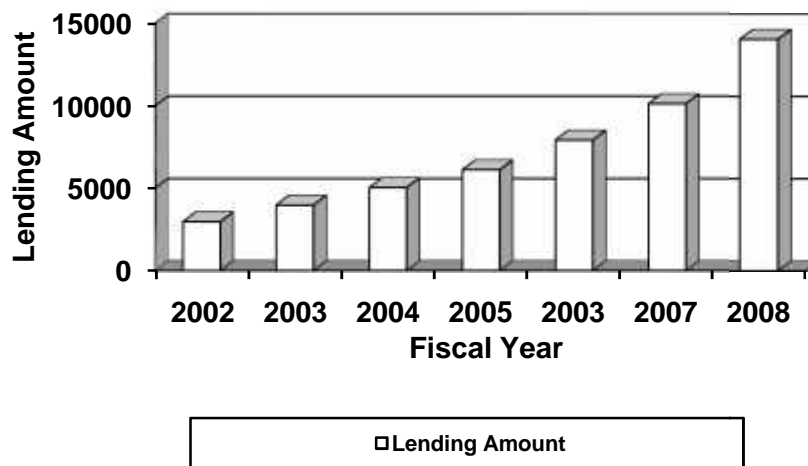
Source: Banking and financial statistics 43-49, NRB

The table 4-15 shows the interest rate of EBL on lending on seven fiscal years granted in different sectors. With comparison to above aforementioned bank EBL lending rate was some what lower than NABIL and HBL. This may be due to competition because those au banks are joint venture commercial banks. The average interest rate of EBL was in decreasing trend. But the decreasing magnitude is very little. The average interest rate of EBL was decreasing only in decimal percentage. The interest rates of EBL in all sectors are declining in same manner that means declining ration is almost same. It

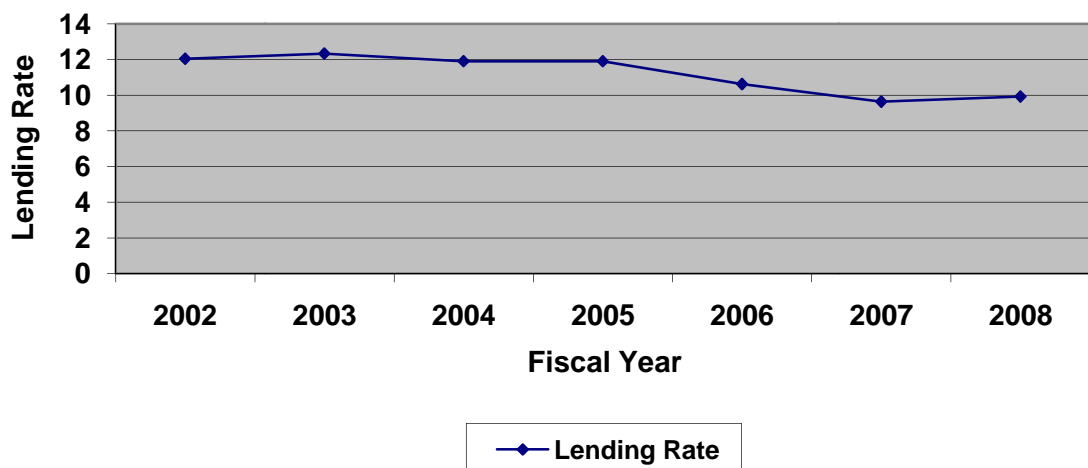
means that, there was equal fall in interest rate on each sector loan. In past seven FYs the highest interest rate was 13.5. This rate fell to six p.a when it approached to fiscal year 2007. This is exceptional case. But in other sector loan the lending rate is not decreasing by huge magnitude. To see the position it is better to give glance on average lending rate during last seven FYs. The average interest rate was 12.04, 12.33, 11.90, 11.90, 10.62, 9.63 and 9.92 in FY 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively.

In effect of decline in interest rate the lending amount of EBL is also found to be increasing drastically during the seven fiscal years during the period of seven years, the lending amount was increased by five times. This is what the theory says. But to know exact relationship it is necessary to compute the correlation coefficient. Prior to au it is rational if the data of the table 4-15 are preset on the figure 4-17

**Fig 4-17 Lending Amount of EBL during different FYs**



**Fig 4-18 Average lending Rate of EBL during different FY**



### **Correlation coefficient, Coefficient of determination and t- statistics of EBL**

By using excel spreadsheet, correlation coefficient, average, standard deviation and other necessary statistics can be calculated. The correlation coefficient between lending rate and lending amount for EBL is -0.8998. This is very high degree of correlation the negative sign indicates that the two variables have opposite or inverse relationship, meaning decrease in one variables leads to increase in other variables. For this case decreases in interest in interest rate stimulates the lending amount or vice-versa. The coefficient of determination for correlation coefficient is 0.8097. In other words the relationship between one variable is defined by another is up to the level of 80.97%

To verify the correlation coefficient statistically, it is better if t-statistics is used. The calculated value for t is 4.6136 ( t-cal=4.613). Similarly the tabulated value for t at 5 degree of freedom with 5 level of significance is 2.571 i.e. (t- tab= 2.571). Comparing t-cal and t-tab it is found that t-cal > t-tab so in such case alternative hypothesis is accepted meaning the relation shown by the correlation coefficient is highly significant. In other words two variables are significantly correlated or the increase in lending amount is due to the decrease in lending rate. Lending rate is significant factor for the lending amount.

#### **4.3.4 Nepal Bangladesh Bank Limited (NBBL)**

The sector where NBBL granted its credit during last seven FYs and their corresponding interest rate, average interest rate and lending amount are presented in the table 4-16

**Table 4-16 lending Rate of NBBL on different sectors dousing seven FYs**

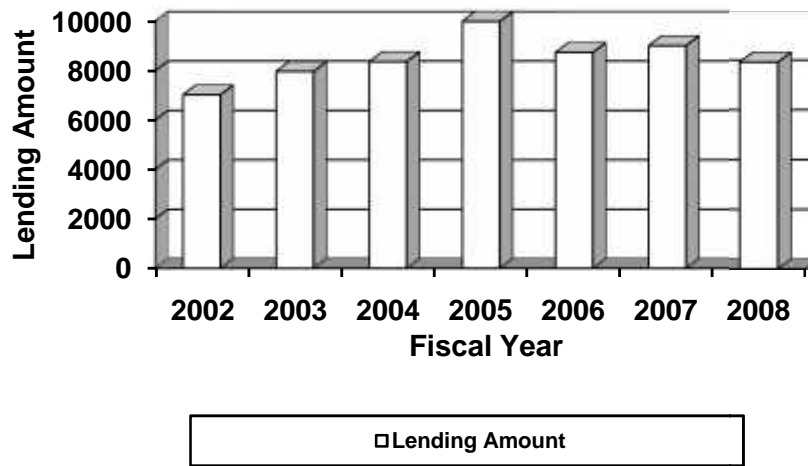
<i>Sector</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<b>Overdraft</b>	15	14.5	14	13	-	-	-
<b>Export credit</b>	12	11.75	11.75	10.5	9.5	9.5	9.5
<b>Import LC</b>	-	-	-	10.5	-	-	-
<b>HMG Bond</b>	9	9	9	8.5	7.5	7.5	7.5
<b>BG/CG</b>	13	13	13	12	8	8	8
<b>Other Guarantee</b>	-	-	-	-	-	-	-
<b>Industrial Loan</b>	14.5	14	14	-	12	12	12
<b>Commercial Loan</b>	15	14.5	14	-	9.5	9.5	9.5
<b>Priority Sector Loan</b>	13	13	13	11	10	10	10
<b>Poorer sector Loan</b>	12	12	12	10	9.5	9.5	9.5
<b>Term Loan</b>	14	14	13.5	12	-	-	-
<b>Working Capital</b>	-	-	-	-	-	-	-
<b>Hire Purchase</b>	14.5	14.5	14	12.5	9.5	9.5	9.5
<b>Others</b>	15	14.5	14	13	10.5	10.5	10.5
<b>Average Int. Rate (1)</b>	13.36	13.16	12.93	11.30	9.56	9.56	9.56
<b>Lending Amount (2)</b>	7022	7969	8363	9996	8740	9011	8303
<b>Correlation (<math>r_{12}</math>)</b>	-0.5249						
<b>Coeff. Of Det. (<math>r^2_{12}</math>)</b>	0.2756						
<b>t-statistics</b>	t-cal = 1.379		t-tab = 2.571		Insignificant		
<b>Standard deviation</b>	1.7994%						

Source: Banking and financial statistics 43-49, NRB

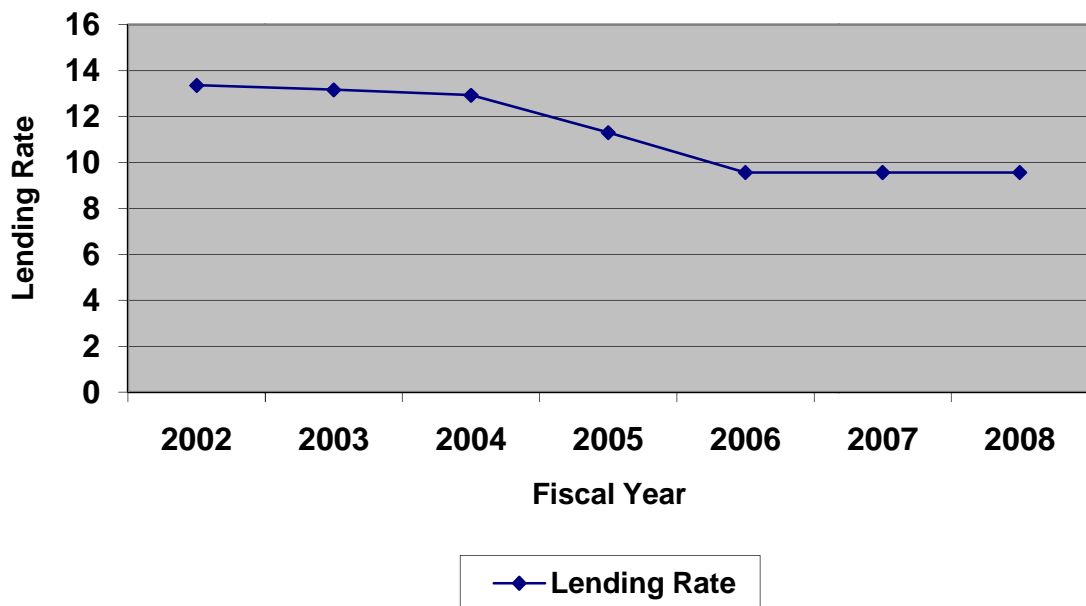
The table 4-16 shows the lending interest rate structure of NBBL on seven FYs on different sectors. From table it is clear that the interest rates of NBBL are in falling stage. The average interest rate is declining slowly during the seven FYs. This phenomenon can be seen clearly with the study of average interest rate. The average interest rate for FYs 2002, 2003, 2004, 2005, 2006, 2007 and 2008 are 13.36, 13.16, 12.93, 11.30, 9.56, 9.56 and 9.56 respectively. The average interest rate shows that the rate has fallen at steady

rate. In this bank, lending interest of non- productive loan falls more than leading interest rate on productive sector loan in the same manner for lending amount the lending of NBBL increased each year but this amount is slowly decreased after FY 2006. During the last FY the lending amount rises. But the lending amount has significantly reduced to 8740 from 9996.00 on FY 2006. This shows that the lending amount and interest rate have negative relationship but to get the exact numerical result of relationship completion should be necessary to calculate. The figure for changing trend of interest rate and lending amount is given on figure 4-18 and figure 4-19.

**Fig 4-19 lending Amount of NBBL durring different FY**



**Figure 4- 20 Average Lending Rate of NBBL during different FYs**



### **Correlation coefficient, Coefficient of determination and t- statistics of NBBL**

From table 4-16 the correlation coefficient (simple correlation) between lending rate and lending amount  $r_{12}$  is  $-0.5249$ . According to our classification this negative correlation is of “moderate degree”. In this case it is clear that interest rate on lending and lending amount has inverse relationship. It means they move in opposite direction i.e. increase in lending rate result decrease in total lending amount. This situation matches with the actual theory. According to the theoretical concept of lending rate and lending amount people prefer or use more money when the market interest rate is low in the market. The simple determination of correlation coefficient ( $r^2_{12}$ ) is  $0.2756$  when total lending amount is taken as dependent variable and lending rate as independent variables then  $27.56$  of total variation in dependent variable is explained by lending rate and remaining percentage is due to the effect of other variables in the economy

Test of significance of correlation coefficient between lending rate and lending amount also verify the fact. The calculated value of t-statistics is  $1.379$  ( $t\text{-cal}=1.379$ ). This value is less than tabulated value,  $t\text{-tab}= 2.571$  with level of significance  $5$  and d. f  $5$ . In this condition  $H_0$  is accepted. It means that there is no significant correlation between the two variables. In other words their relation is insignificant. Though the correlation coefficient shows that these two variables have moderate level of correlation, but t-statistics verify that their relation is insignificant. In conclusion the inverse relationship between lending rate and lending amount is not exactly applicable for NBBL. Now it is clear that the increase in lending amount is not significantly correlated due to decrease in lending interest rate.

#### **4.3.5 Nepal State Bank of India (NSBI)**

The sector where NSBI granted its credit during last seven FYs and their corresponding interest rate, average interest rate and lending amount are presented in the table 4-17



**Table 4-17 Lending Rate of NSBI on different sectors during seven FYs**

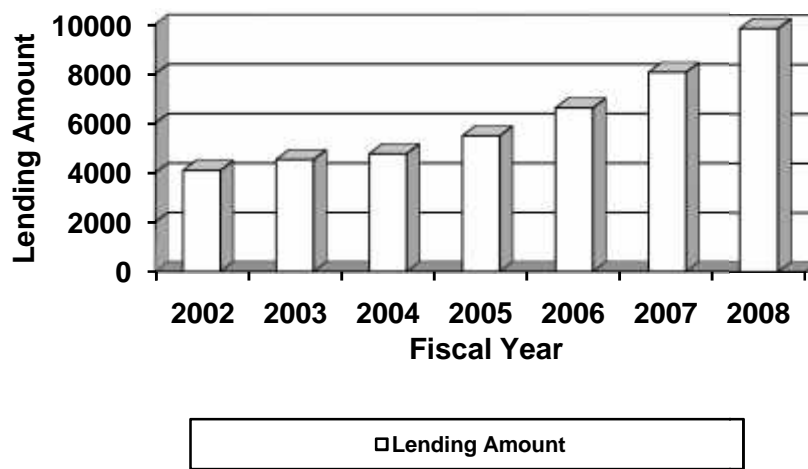
<i>Sector</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<b>Overdraft</b>	14.5	14	13.5	12.5	12.5	12.5	11
<b>Export credit</b>	11	11	11	10.5	10.5	10.5	9
<b>Import LC</b>	13	13.5	13	-	-	-	-
<b>HMG Bond</b>	9.5	9	9	7	7	7	7
<b>BG/CG</b>	11	9.5	9.5	9.5	9.5	9.5	9.5
<b>Other Guarantee</b>	-	-	-	-	-	-	-
<b>Industrial Loan</b>	13.5	14	13.5	-	-	-	-
<b>Commercial Loan</b>	14.5	14	13.5	13.5	-	-	-
<b>Priority Sector Loan</b>	14	12.5	12.5	12	12	12	11
<b>Poorer sector Loan</b>	10	9	9	9	9	9	9
<b>Term Loan</b>	14.5	14	14	12.5	12.5	12.5	11
<b>Working Capital</b>	11.5	-	-	-	-	-	-
<b>Hire Purchase</b>	-	13.5	12.5	10.5	10.5	10.5	9.5
<b>Others</b>	14.5	14	13.5	12.5	12.5	12.5	11
<b>Average Int. Rate (1)</b>	12.63	12.33	12.04	10.95	10.67	10.67	9.78
<b>Lending Amount (2)</b>	4091	4529	4761	5491	6619	8060	9847
<b>Correlation (<math>r_{12}</math>)</b>	-0.9271						
<b>Coeff. Of Det. (<math>r^2_{12}</math>)</b>	0.8595						
<b>t-statistics</b>	t-cal = 5.5306		t-tab = 2.571			Significant	
<b>Standard deviation</b>	1.0491%						

Source: Banking and financial statistics 38-47, NRB

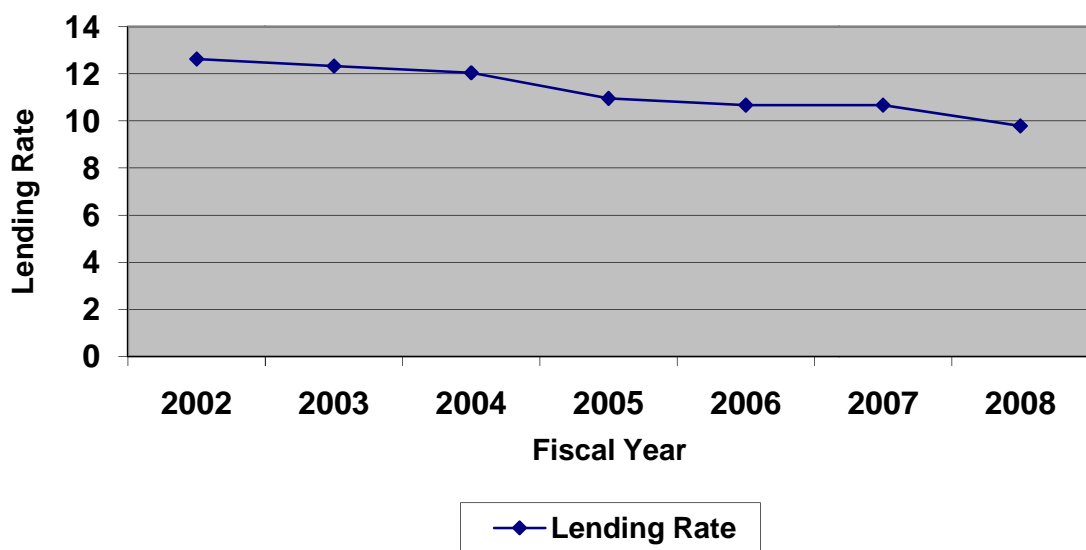
The table 4-17 shows the interest rate of NSBI on lending on seven fiscal years granted in different sectors. The average interest rate declined slowly during seven fiscal years. The interest rate falls only in decimal up to FY 2004. After then the interest rate falls with huge magnitude on FY 2005 then again interest rate falls smoothly with less magnitude. The lending rate in all sectors of at NSBI falls slowly during seven FYs. The lending rate is higher in “others” sector in comparison to other sectors. So it can be said

that the interest rate declined with almost same magnitude in both productive and non-productive sector loan. With rhythm to lending interest rate, the study of lending amount shows that it is in increasing trend. The lending amount of NSBI is 4176.3 on FY 2002 but it becomes 9847 on FY 2008 which is more two times. But to know the exact relationship it is necessary to compute the correlation coefficient. Prior to all it is rational if the data on the table 4-17 present on the figure 4-21.

**Figure4-21: Lending Amount of NSBI during different FYs**



**Figure 4- 22 Average Lending Rate of NSBI during different FY**



### **Correlation coefficient, Coefficient of determination and t- statistics of NSBI**

The correlation coefficient of NSBI between lending amount and lending rate is -0.9271 is high degree negative correlation. It indicates that increment in one variable result the decrement in other variables or vice-versa. In this case decrease in lending interest rate increases the lending amount. People preferred more credit from the NSBI when bank reduced the lending interest rate. Similarly the coefficient of determination between two variables ( $r^2_{12}$ ) = 0.8595. It means that the relationship between dependent variable and independent variable is defined up to the extent of 85.95%. In other words the increase in lending amount by decrease in interest rate is defined up to the extent of 85.95 where as remaining percentage is due to other factors.

Similarly the t-statistics for NSBI is 5.5306 (t-cal =5.5306). The tabulated value at 5 level of significance with 5 d.f is 2.571. Comparing the t-tab and t-cal, it is clear that t-cal>t-tab, so alternative hypothesis is accepted and null hypothesis is rejected. It means that the relation shown by correlation coefficient is highly significant. That is the inverse relation shown by two variables- lending rate and lending amount- is strong. The increase in demand of lending amount is due to the decrease in lending rate. Therefore according to t-statistics the lending rate is also another strong as well as important factor that shape the lending amount. In other words two variables are significantly correlated or the increase in landing amount is due to the decrease in lending rate.

#### **4.3.6. Standard Chartered Bank Limited (SCBL)**

At last another bank for analysis is standard chartered bank limited. This bank also grants the credit to its customers in different sectors. But according the NRB bulletin “Banking and Financial statistics” the bank provides the loan to its customers on following sectors.

**Table 4- 18 Lending Rate of SCBL on different sectors during seven FYs**

<i>Sector</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<b>Overdraft</b>	-	-	-	-	6.5	6.5	6.5
<b>Export credit</b>	12.5	12	12	12	12	11.5	11.5
<b>Import LC</b>	12	11.5	11	11	11	9	9
<b>HMG Bond</b>	9.5	9.5	9.5	9.5	9.5	8	8
<b>BG/CG</b>	14	13.5	10.5	10.5	10.5	9.5	9.5
<b>Other Guarantee</b>	10.5	10.5	13.5	13	13	11	11
<b>Industrial Loan</b>	14.5	14	13.5	13.5	13.5	11.5	11.5
<b>Commercial Loan</b>	15	14.5	14	14	14	11.5	11.5
<b>Priority Sector Loan</b>	-	-	-	-	-	-	-
<b>Poorer sector Loan</b>	10.5	10	10	10	10	7.5	7.5
<b>Term Loan</b>	15	14.5	14	14	14	11.5	11.5
<b>Working Capital</b>	14	13.5	13	13	13	10	10
<b>Hire Purchase</b>	13	11	9	9	9	9.5	9.5
<b>Others</b>	15	14.5	14.5	14.5	14.5	13	13
<b>Average Int. Rate (1)</b>	12.96	12.42	12.04	12	11.58	10	10
<b>Lending Amount (2)</b>	2838.7	5675.6	6028.5	6662.0	8213.5	8905.1	10538.1
<b>Correlation (<math>r_{12}</math>)</b>	-0.9257						
<b>Coeff. Of Det. (<math>r^2_{12}</math>)</b>	0.8569						
<b>t-statistics</b>	t-cal = 5.472		t-tab = 2.571		Significant		
<b>Standard deviation</b>	1.1539%						

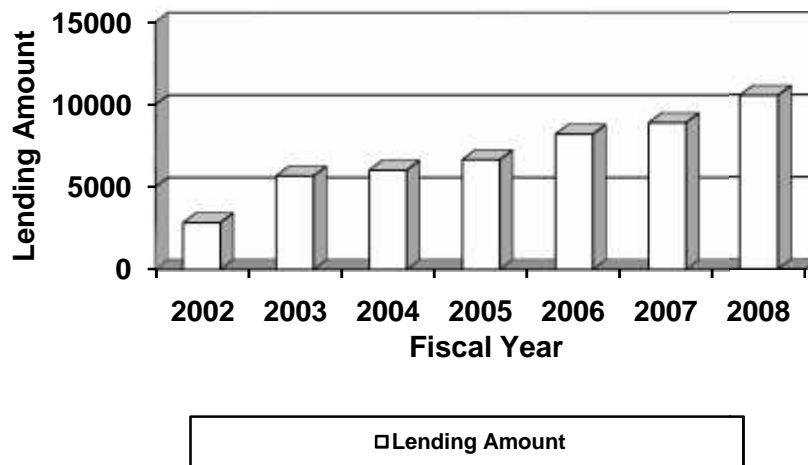
Source: Banking and financial statistics 43-49, NRB

The table 4-18 shows the lending interest rate of SCBL on different sectors in different FYs. SCBL granted credit in most of the sector. But SCBL doesn't granted credit in priority sectors loan. In past four FY bank didn't grant loan in overdraft but from FY 2006 it started to grant loan in it also. The overall lending rate of SCBL is in declining trend. In past seven FYs the highest interest rate was in "others" categories. The table 4-18 shows the interest rate falls drastically on FY 2007 but in five past FYs the interest rate falls slowly in all sectors only on decimal. Similarly the average

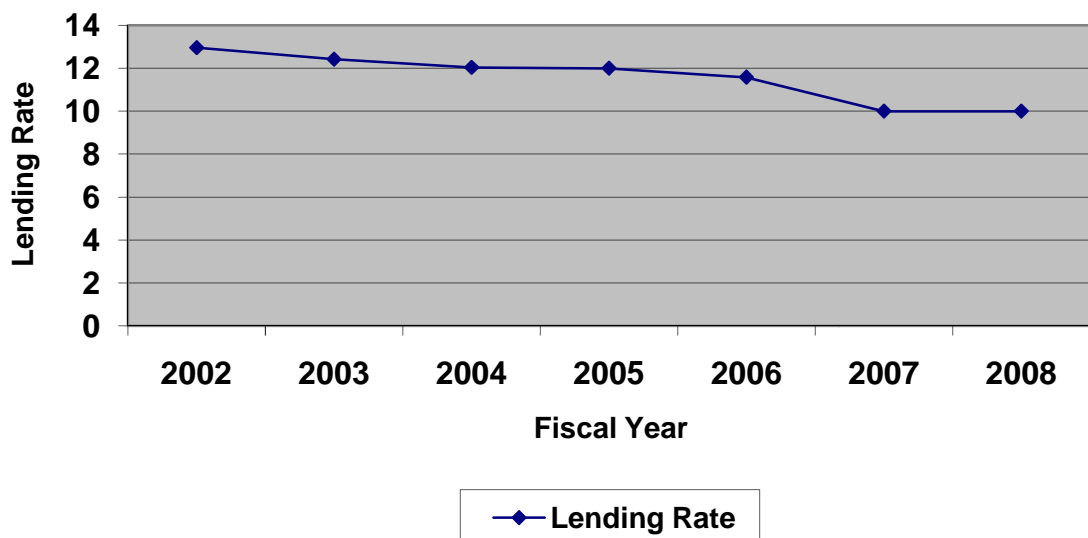
interest rate is also in decreasing trend but the decreasing magnitude is not more. To see the position, it is better to give glance on average lending rate during last seven FYs. The average interest rate was 12.96, 12.42, 12.04, 12.00, 11.58, 10 and 10 in FYs 2002, 2003, 2004, 2005, 2006, 2007 and 2008 respectively.

In effect of decline in interest rate the lending amount of SCBL is also found to be increasing slowly during the seven fiscal years except in 2003. During the period of seven years the lending amount was doubled. But to know the exact relationship it necessary to compute the correlation coefficient. The figure for changing trend of interest rate and lending amount is given on figure 4-23 and figure 4-24

**Figure4-23 Lending Amount of SCBL during different FYs**



**Figure 4- 24 Average Lending Rate of SCBL during different FY**



### **Correlation coefficient, Coefficient of determination and t-statistics of SCBL**

To find the exact relationship between the lending interest rate and lending amount, it is necessary to use some of the statistical tools like correlation coefficient student t-statistics is applied. For this case the correlation coefficient between SCBL'S for average interest rate and lending amount is  $-0.9257$  ( $r_{12} = -0.9257$ ) this is very high degree of correlation. The negative sign indicates that the two variables have opposite or inverse relationship meaning decrease in one variables leads to increase in other variables. For this case decrease in interest rate stimulates the lending amount or vice-versa. The coefficient of determination for correlation coefficient is  $0.8569$ . In other words the relationship between one variable is defined by another is up to the level of  $85.69\%$ .

To verify the correlation coefficient statistically, it is better if t-statistics is used. The calculated value for t is  $5.472$  ( $t\text{-cal} = 5.472$ ). Similarly the tabulated value for t at 5 degree of freedom with 5 level of significance is  $2.571$  i.e.  $t\text{-tab} = 2.571$ . Comparing t-cal and t-tab it is found that  $t\text{-cal} > t\text{-tab}$ . So in such case alternative hypothesis is accepted meaning the relation shown by the correlation coefficient is highly significant. In other words two variables are significantly correlated or the increase in lending amount is due to the decrease in lending rate.

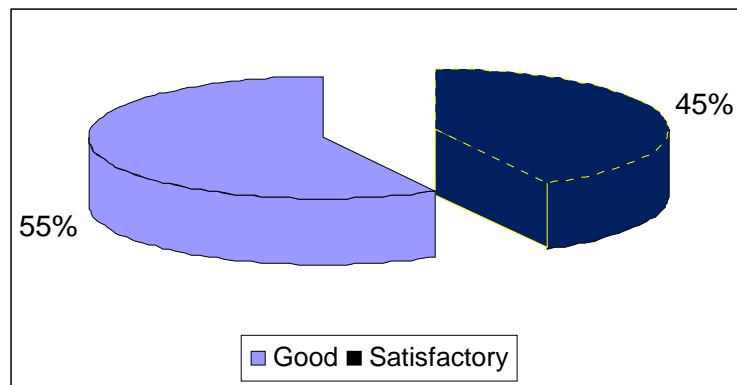
### **Presentation and Analysis of Primary Data**

In this section primary data is analyzed. The primary data collected through the questionnaire distributed to the executives and others personals officers of sample banks. Those people related to the field of banking were familiar about the interest rate and it affecting factors. Please see annex for questionnaire.

#### **Question No 1. Present condition of joint venture Banks in Financial Market.**

The first question is related about the present condition of joint venture banks in Nepalese financial market. The view points of the different respondents are presented in figure below.

**Figure 4-25**

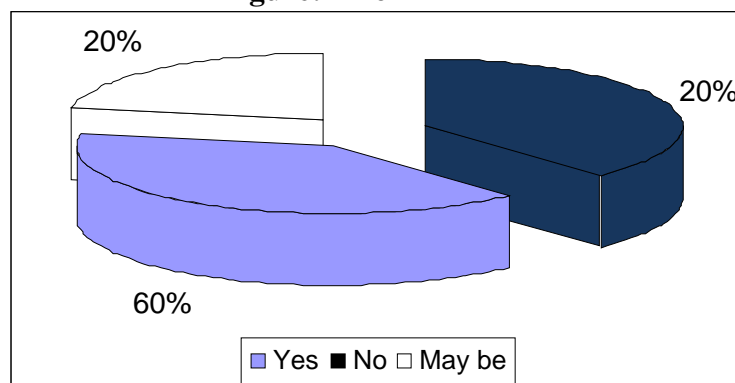


The figure 4-37 shows about the present condition of joint venture Banks in Nepalese Financial Market. 55% of the respondents agree that the joint venture banks are in good condition. But 45% of the respondents believe that the condition of banks is satisfactory and no are argue with the poor condition of the joint venture bank. Satisfactory condition indicates that the condition either may go up or go down and the economy of the country is worsening day by day so the attention must be given.

**Question No 2. Interest rate structure of the banks is appropriate to attract the investor and depositors?**

This question is related to the interest rate structure of the varies bank and wants to clear that it is suitable or mot for those inverters and depositors the view points of the different respondents are presented in figure below.

**Figure: 4-26**

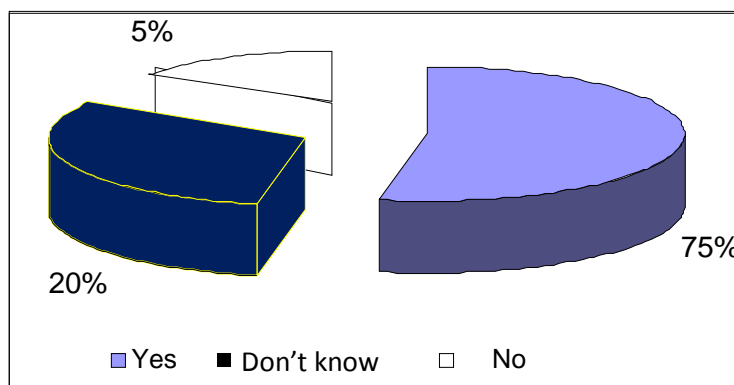


The figure 4-38 shows the 60% of respondents agree that the interest rate structure is appropriate to attract the investors and depositors. But 20% do not agree and remaining 20% aren't confirmed & hope that it may be appropriate. From the figure it is clear that must of the respondents think that interest rate structure is not appropriate so banks should think about it.

**Question No 3. There is high lending rate in non-productive sector rather than productive sector.**

The question wants to be clear about the high interest rate that is being charged on non- production sector rather than productive sector. The view points of the different respondents are presented in figure below.

**Figure 4.27**



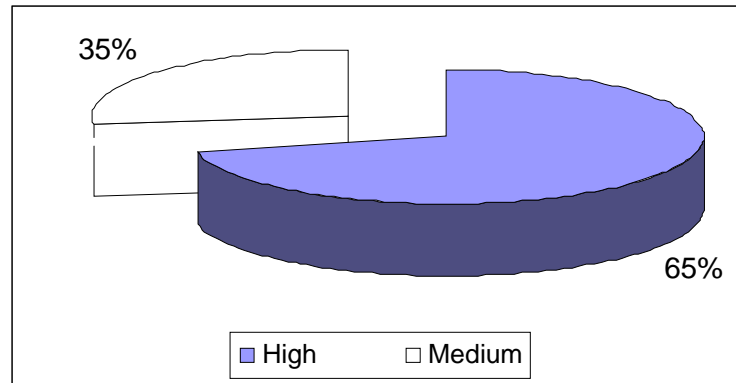
The figure 4-39 shows the 75% of the respondents agree that the lending rate is high on non-productive sectors. But 20% do not agree and remaining 5% ate unknown about the high lending rate charged on non- productive sectors. There should be low interest rate on productive sector so that people can use more funds from banks on productive sectors which ultimately leads nation towards success.



**Question No 4. People are feeling comfortable and safe to deposit their saving on the banks.**

This question tries to find out the feeling of people to deposit their saving on the banks. The viewpoints of the different respondents are presented in figure below.

**Figure 4-28**

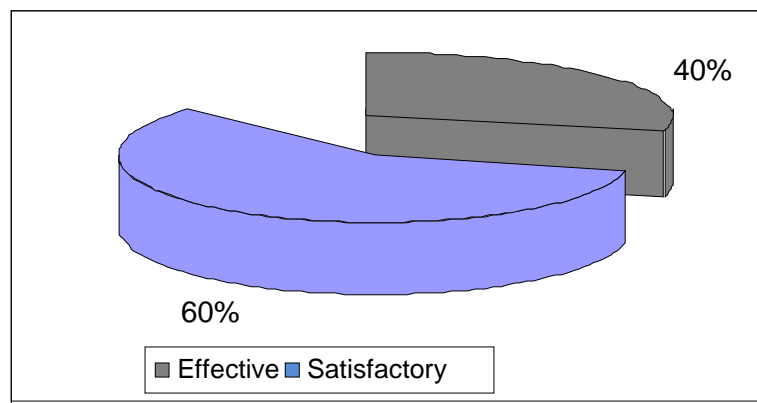


The figure 4-40 shows the 65% of respondents are feeling highly comfortable and safe to deposit their saving on the banks. But remaining 35% are moderately feeling comfortable and safe to deposit their saving on the banks.

**Question No 5. Interest rate on deposit and lending of the banks is effective in Nepalese financial market.**

This question tries to know effectiveness of interest rate on deposit and lending of the banks in Nepalese Financial Market. The result obtained from different respondents is presented below.

**Figure 4-29**

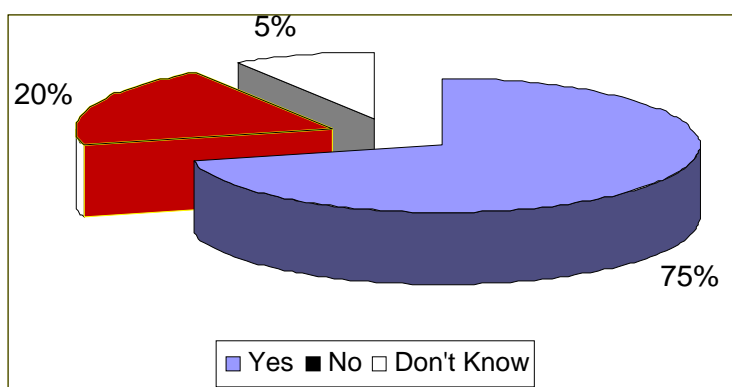


The figure 4-41 shows that only 40% of the respondents agree that interest rate on deposit and lending of the banks is effective Nepalese financial market. Even 60% think that it is satisfactory in present contest.

**Question No 6. Deposit on saving deposit scheme is effective than fix deposit scheme.**

This question wants to find out that do people like to deposit on saving deposit than fix deposit? Here is what our respondents have replied.

**Figure 4-30**

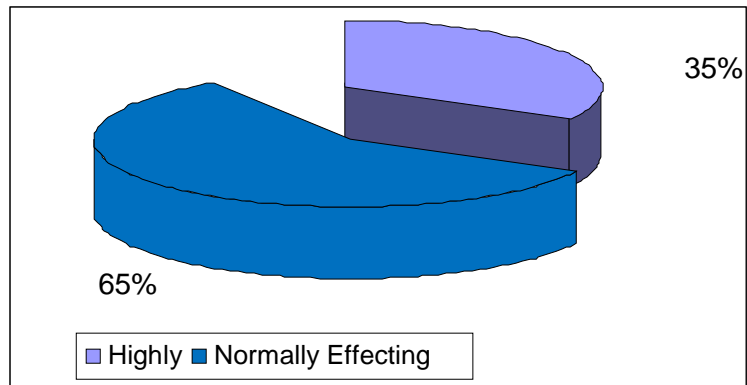


The figure 4-42 shows that about 75% of the respondents agree that people like to deposit in saving scheme. 20% respondents don't agree the statement and 5% is unknown about this. This may be because the interest provided by banks on fix deposit is decreasing day by day. Even in Nepal, people want to keep their saving in saving deposit due to its feasibility.

**Question No 7. Open borders with India affect the interest rate in borrowing and lending.**

This question wants to find out that to what extent open boarder with India affect the interest rate on borrowing and lending? The figure shows what the respondents have said.

**Figure 4-31**

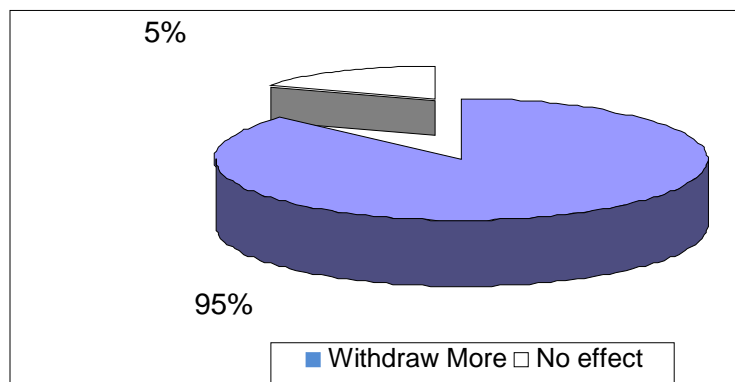


The figure 4-43 shows that about 35% of the respondents highly agree that open boarder with India affect the interest rate on borrowing and lending. 65% of respondents think that it may affect. But 9% of the respondents don't agree upon our assumption. It may suggest that open boarder with India somewhat affect the interest rate on borrowing and lending.

**Question No: 8 people deposit more or with draw in the situation of violence and insecurity.**

This question wants to clear that what the people do about their cash in the situation of violence and insecurity. The result is presented in given figure.

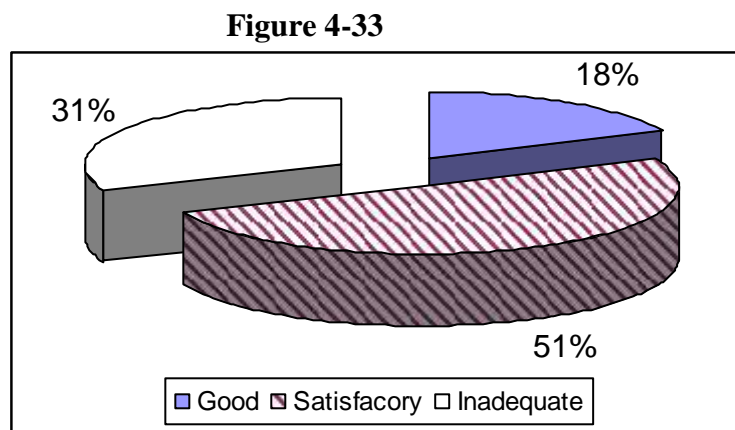
**Figure 4-32**



The figure 4-44 shows that none of respondents agree that people deposits more in the situation of violence and insecurity. But 95% of respondent don't agree this statement they have replied that people with draw more in the situation of violence and insecurity and remaining 5% have replied that there will be no effect at all. From above it is clear that people feels unsafe to deposit their saving on the bank in the situation of violence and insecurity.

**Question No 9. Rules and regulation of Nepal Rastra Bank**

This question tries to know how Nepal Rastra Bank is functioning to regulate Nepalese Commercial Bank. The result obtained from different Reasons is presented below.

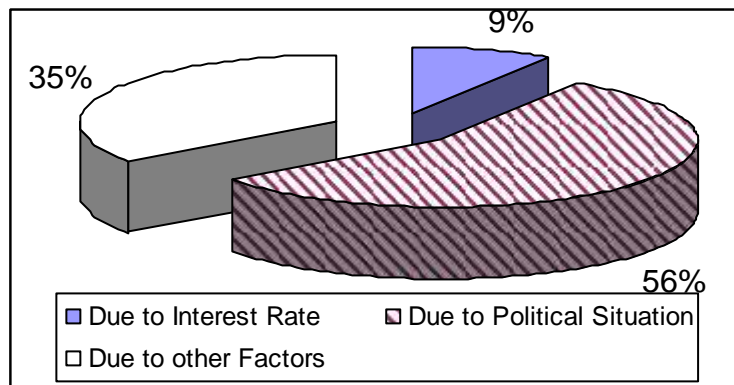


The figure 4-45 shows that only 18% of the respondents they agree that Nepal Rastra bank is functioning well. About 51% finds the role to be satisfactory. But NRB should think about 31% hoping banks function to be inadequate.

**Question No 10. Reasons that banks aren't properly utilizing the deposits in terms of loans to generate profit.**

This question wants to clear that why banks are not properly utilizing their deposit in terms of loans to generated profit. There may be several reasons but according to priority only three options are mentioned. The result obtained from different persons is presented below.

**Figure 4-34**

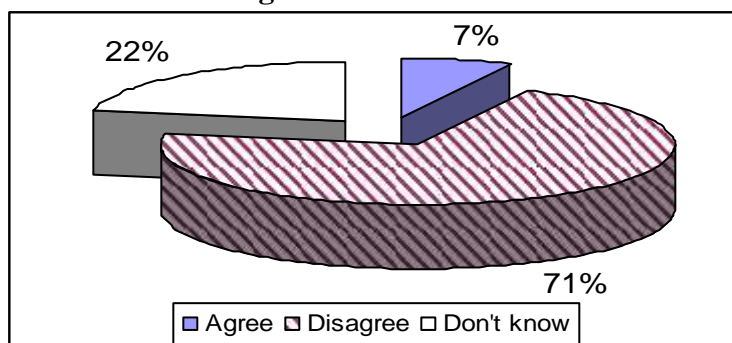


The figure 4-46 shows that only 9% of the respondents think that interest rate is main cause that is limiting banks to utilize the deposits in terms at loans to generate profit. About 56% of respondents agree that political situation is the main barrier for utilizing the loan to generate profit and remaining 35% think due to other several factors. From above it is clear that political situation may hamper the banks to function well.

**Question No 11. Lending amount decreases with the decrease in lending rate.**

This question is related about the lending amount and lending rate. The viewpoints of different respondents are presented in figure below.

**Figure 4-35**

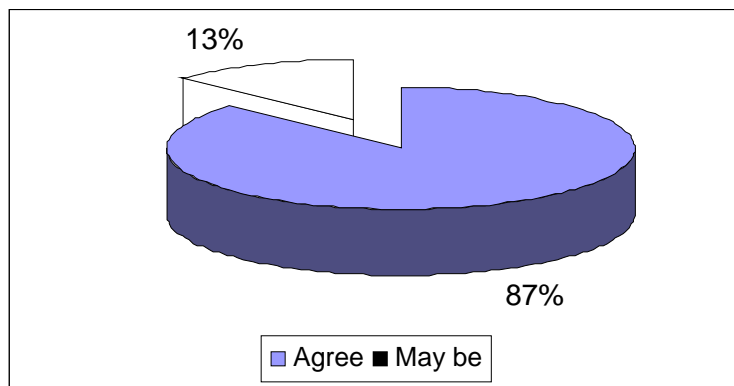


The figure 4-47 shows that only about the 7% agree that lending amount decreases with the decrease in lending rate but 71% do not agree with the statement and remaining 22% of respondents do not know about this.

**Question No 12. Joint venture banks are playing important rate in economic development of the country.**

This question wants to find out the role of joint venture bank as in economic development of the country. The figure shows what the respondents have said.

**Figure 4-36**

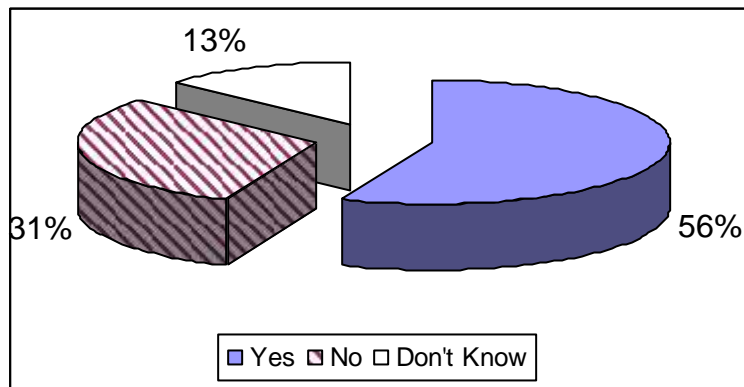


The figure 4-48 shows that about 87% of the respondents agree that joint venture banks are playing important rate in economic development of the country. No one disagree with the statement. And 13% think they may be playing import ant rate in economic development of the country.

**Question No: 13. Lending rate should be reduced to attract the investors**

This question tries to know whether lending rate should be reduced to attract investors. The figure shows what the respondents have said.

**Figure 4-37**

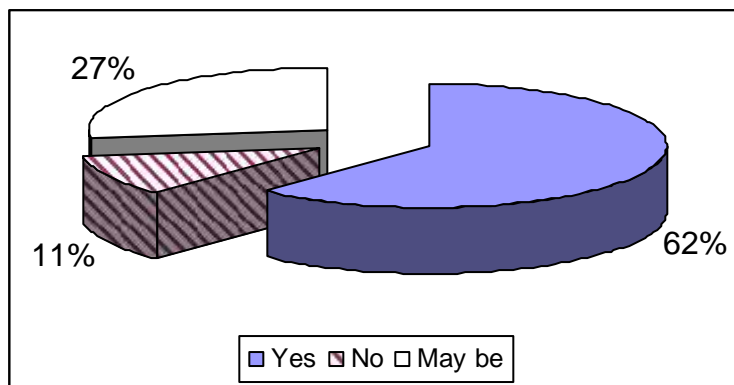


The Figure 4-50 shows that about 56% people agree that lending rate should be reduced to attract the investors. But 31% of respondents do not agree with the statement and remaining 13% are unknown about it.

**Question No 14. Inflation influences the interest rate.**

This question tries to clear about the relationship between interest rate and inflation. The viewpoints of different respondents are given below.

**Figure 4-38**



The figure 4-50 shows that about 62% of the respondents agree that inflation affect the interest rate. Even 27% hope that inflation may influence interest rate and 11% do not agree the statement.

#### **4.5 Major Findings of this study**

After presentation and analysis of relevant data of sample banks under study; using various analytical tools some findings can be drawn. The major findings of the study are as fallows.

- ) **NABIL:** Amount of saving deposit and interest rate on deposit is highly correlated. But amount of fixed deposit and interest rate on deposit is positively correlated. Amount of lending and interest rate is negatively correlated. Relation between interest amount with both saving and fixed deposit and lending amount is also insignificant it is found deposit rate and lending rate moved into same direction.
- ) **Himalayan Bank Limited (HBL):** Amount of saving deposit and interest rate on deposit is highly negatively completed. And fixed deposit amount and interest rate on deposit is also negatively correlated. Amount of lending and interest rate is also highly negatively correlated. Relation between interest amounts with saving, fixed and lending amount are significant. The deposit rate and lending rate of it is moving in same direction.
- ) **Everest Bank Limited (EBL):** Amount of deposit (saving and fixed) and interest rate on deposit is highly negatively correlated. Similarly amount of lending and interest rate is highly negatively correlated. Relation between interest amounts with deposit (saving and fixed) and lending amount is significant. The deposit rate and lending rate of it is moving in same direction.
- ) **Nepal Bangladesh Bank Limited (NBBL):** Amount of saving deposit and interest rate on deposit is highly negatively correlated but amount of fixed deposit and interest rate on deposit is positively correlated. Amount of lending and interest rate is highly negatively correlated. Relation between interest amounts with saving deposit is significant and relation between interest amounts with fixed deposit is insignificant. Similarly relation between interest amounts with lending amount is also insignificant.



) **Nepal State Bank of India (NSBI):** Amount of deposit (saving and fixed) and interest rate on deposit is highly negative correlated. Similarly the amount of lending and interest rate is also highly negatively correlated. The relation between interest amount with saving deposit and lending amount is significant and relation between interest amounts with fixed deposits amount is insignificant. It is found that deposit rate and lending rate moved into same direction.

) **Standard Chartered Bank Limited (SCBL):** Amount of saving deposit and interest rate on deposit is highly negatively correlated. But amount of fixed deposit and interest rate on deposit is positively correlated. Relation between interest amounts with deposit (saving and fixed) and lending amount is significant. Both deposit rate and lending rate moved into same direction.

) **Table 4-19 Summary of the Findings**

<b>Summary table of the Calculations</b>						
<b>Bank</b>		<b>Correlation Coefficient</b>		<b>t-calculated</b>		<b>Result</b>
		Saving Int. Rate	Fixed int. Rate	Saving Int. Rate	Fixed Int. Rate	
<b>NABIL</b>	Deposit	-0.6856	0.0122	2.105	0.027	Insignificant
	Lending	-0.7173		2.302		Insignificant
<b>HBL</b>	Deposit	-0.9628	-0.6796	7.964	2.071	Sig/Insig.
	Lending	-0.9127		4.993		Significant
<b>EBL</b>	Deposit	-0.8735	-0.7144	4.012	2.282	Sig/Insig.
	Lending	-0.8998		4.613		Significant
<b>NBBL</b>	Deposit	-0.8787	0.7403	4.115	2.462	Sig./Insig.
	Lending	-0.5249		1.379		Insignificant
<b>NSBI</b>	Deposit	-0.8843	-0.5623	4.235	1.520	Sig./Insig.
	Lending	-0.9271		5.530		Significant
<b>SCBL</b>	Deposit	-0.8685	0.5126	3.917	1.335	Sig./Insig.
	Lending	-0.9257		5.472		Significant

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter is a last part of the research study which includes all the briefing of the whole study and extracts of all the previously discussed chapters. This chapter mainly consists of three parts summary, conclusion and recommendation. In summary portion revision of all four chapters are made viz. Introduction, Literature Review, Research Methodology and Analysis of Data. Then conclusion is drawn following analysis part and comparing the theoretical aspect and analysis. Conclusion part answers whether practically relates to theory. Based on conclusion necessary suggestions are presented in recommendation part i.e. various measures are recommended to concerned organization for the improvement of the current condition of interest rate structure.

#### **5.1 SUMMARY**

After the liberalization policy various banks and financial institutions came into existence with a hope to play important role in the development of financial system of the country. Accepting deposit from savers (household, businesses or government) and transferring the collected deposit to the investment sector (i.e. lending collected amount from depositors to borrowers) is one of the major functions of banking business. Banks are the real intermediaries who transfer saving (i.e. collected deposit) to the needy investors does that money can be used in the productive sector for economic development. To collect deposit bank provide certain percentage of interest and when amount is loaned outside (which has been collected from savers) certain percentage of interest is charged to them. Even though there are various factors in the economy that effects deposit amount and lending amount interest rate is one of the major economic indicator that affect deposit and lending amount of the banks. With the curiosity to be clear about interest rate structure of commercial banks and to be clear about whether interest rate influence deposit and lending amount this study is made. With the major objective of showing relationship between deposit rate and deposit amount lending rate and lending amount this study is undertaken.

The review of literature shows that there are so many economic and non-economic factors that are on deposit and lending. But it is real fact that there is relationship of interest rate with deposit amount and lending amount. The volume of deposit amount and lending amount of banks are highly affected by their interest rate. According to the theoretical views there is positive relationship in between interest rate on deposit and deposit amount. That means, when interest rate on deposit increases that attract to the deposit and deposit amount of banks are increases or vice versa similarly there is negative relationship in between interest rate on lending and lending amount of banks. That means increases decreases in interest rate on lending, lending (loan or investment) amount decreases/ increases of banks. Various commercial banks and financial companies in Nepal are free to set their interest rate on deposit and lending so all banks are determined their interest rate as per their own policy purpose or objectives However interest rate fluctuates time with impact of economic and non-economic factors which in turn affect deposit amount and lending amount of banks.

The effect of interest on deposit and lending amount and interest rate structure on deposit and lending are analyzed from six joint venture banks of Nepal for seven years period by using statistical and financial tools mentioned in chapter three. Secondary data are collected from NRB'S economic reports, annual reports of related banks and websites and primary data are collected from the questionnaire distributed to various personnel of sample banks. The analysis of all banks shows average interest rate on deposit is in decreasing and deposit amount is in increasing trend. Similarly interest rate on lending is also decreasing and loan and advances (lending) amount is in increasing trend. This trend shows, there is reverses relationship in between deposit rate and deposit amount lending rate and lending amount of joint venture banks. The statistical analysis also shows that there is significant relationship between deposit rate and deposit amount and lending rate and lending amount of most joint venture banks except few. The interest rate spread of all the sample banks found to satisfactory except SCBL during last seven fiscal years but most of the banks found that they aren't able to use deposit in terms of loan and advances properly except NBBL.

## 5.2 CONCLUSION

From the analysis of relevant data of sample banks under the study; using various statistical tools mentioned in chapter three and from their findings following conclusions have drawn.

- 1) The interest rate on both deposit and lending of all sample banks are found to be in decreasing trend. But on the contrary to this deposit amount and lending amount is increasing every year except NBBL.
- 2) The saving deposit amount and saving interest rate have negative relationship (i.e. correlation ranging from -0.6856 to -0.9628). It means that they have highly inverse relationship if one variable increases other variable decreases and vice-versa. This case is against the theory of substitution effect. This may be due to the fact that in last FYs. People accumulated most of their funds on saving accounts though they don't get appropriate interest on it. It may be just because of unavailability of other acceptable investment opportunity, in which a separate study can be made. Similarly, the convenience of using saving accounts provokes the investor deposit on saving account. Similarly the excess supply of saving deposit reduces interest rate of saving account.
- 3) To clarify the above conclusion the t-statistic of negative correlation between saving deposit amount and saving interest rate is significant except NABIL it means that they have strong negative relationship.
- 4) Analysis of fixed deposit amount and fixed interest rate shows negative relationship except NABIL, NBBL and SCBL. The correlation coefficient for NABIL, NBBL and SCBL is 0.0122, 0.7403 and 0.5126 respectively. According to correlation coefficient, the substitution effects occur for three NABIL, NBBL and SCBL in case of fixed deposit that means fixed rate when interest rate on fixed deposit decreases/ increases. But other three banks HBL, EBL and NSBI the correlation coefficient is negative meaning people deposit more money even if the bank offer lower yield rate on fixed deposit.
- 5) The t-statistic between fixed deposit interest rate and fixed deposit amount is insignificant. It means that all sample banks have positive relationship for fixed deposit.

- 6) One of variables that affect the demand of fund (lending activity) is lending interest rate. Theoretically there is negative relationship between lending interest rate and lending amount. In this study for six sample banks, it is found that all sample banks except NABIL and NBBL have negative correlation between these two variables. By using correlation tools, it can be inferred that all the sample banks have inverse relationship as suggested by theory.
- 7) The t- test for correlation coefficient of each sample bank for negative relationship between lending interest rate and lending amount shows that the t-value for NABIL and NBBL is in significant which means that though the correlation coefficient shows moderate relationship but their relationship is not strong i.e. not significant relationship. So increase in lending amount is not due to the decrease in lending interest rate but due to other reasons. But for other banks except NABIL and NBBL the t-value is significant meaning that the one of the factor to increase the lending amount is decline in interest rates. So it can be concluded that lending interest rate is also one important factor for expansion or contraction of lending amount.
- 8) It is also found that lending interest rate of the productive sector loan such as commercial loan, Industrial loan, trade credit, working capital loan were decreased lesser in magnitude in comparison to the non- productive sector loan. In case of lending people use more money when interest rate on lending is low. Almost all banks have lent more money by lowering interest rate on lending. But borrowing has increased on non productive sectors.
- 9) During the study period it is found that there exist the high spread between deposit interest rate and lending interest rate. In the beginning of the seven FYs this spreads was large but on later years, the interest rate spread declined to some extent. That may be due to competitive financial environment and less availability of investment opportunity.
- 10) Based on analysis of sample banks it can be concluded that interest rate on deposit does not attractive for the depositors; as every year deposit rate of sample banks are seen deceasing. So it may also be concluded that commercial banks are not conceived in collecting deposit as interest rate on deposit is too lees.
- 11) From the analysis of lending rate of sample banks it can be concluded that interest rate on lending attract borrowers investors as lending rate of sample banks have decreased every year to provide better opportunities for the borrowers investors.

12) Through questionnaire to different persons, conclusion can be drawn as that the present condition of joint venture banks is an satisfactory condition, interest rate structure of the banks is most appropriate attract investors and depositors, there is high interest rate on lending on non-productive sectors compared that of productive sector, people are feeling more comfortable and safe to deposit their saving on the banks, interest rate on deposit and lending of the banks is found satisfactory in Nepalese financial market, deposit on saving deposit scheme is found effective than fixed deposit scheme, open border with India normally effect the interest rate on borrowing and lending, people withdraw more money in the situation of violence and insecurity, rules and regulation of Nepal Rastra bank to be found satisfactory. To some extent banks are not mobilizing its deposits interest of loan and advances due to political situation of the country, lending amount increases with the decrease in lending rate, joint venture banks are playing important role in economic development of country lending rate should be reduced to attract the investors and inflation influence the interest rate.

### **5.3 RECOMMENDATIONS**

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

1. Interest rates on deposit is too less in Nepal. Joint venture banks are suggested to increase the interest rate on deposit so that depositors are benefited by their saving.
2. The high spread between interest rate on deposit and lending is another factor to be considered. Higher spread merely increases the partite margin of the banks but at the same time it reduces the deposit collection and investment in the country. So financial institutions are suggested to reduce the spread as minimum as possible.

3. The central banks of Nepal, NRB should pay special attention towards decreasing trend of interest rate on deposit. It may cause different bad effect in the country such as disintermediation, lack of saving and further saving may go outside of the country.
4. As the central bank of the country, NRB has power to specify the range or spread between lending rate and deposit rate. So NRB is suggested to specify the spread whenever there is high gap between lending rate and deposit rate in the country. In order to create fair economic situation, NRB being the regulator it should watch the functions of banks very closely.
5. As the key to success for any organization and for good financial system in the country capital and investment is essential, this is possible only by proper decision making of interest. So all the joint venture banks are supposed to set proper to set proper and practical interest rate policy.
6. While reducing the lending rate, it is suggested to reduce more on productive sectors than non-productive sectors. If not possible then bankers can reduce the rate of all sectors proportionately.
7. In order to promote more lending and to promote more borrowing lending institutions should introduce new customer oriented schemes of lending and borrowing. So that more lending can be promoted and over liquidity may be solved.
8. Banks are not able to mobilize to its deposits in terms of loan due to lack of sufficient safe investment opportunities. Thus it is suggested to the government to improve the political situation of the country.
9. As NRB'S publications are the major sources of data and information regarding this topic, untimely and late publication makes the researcher wait long and even individual banks do not put available information regarding interest rate structure on their published report. So NRB and even individual joint venture banks are suggested to publish all necessary publication in time and in their publications respectively for the convenience of researcher and other interested people.

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## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Deposit of Himalayan Bank Limited.

Saving Deposit Interest Rate ( $X_2$ )	Saving Deposit Amount ( $X_3$ )	$X_2^2$	$X_3^2$	$X_2X_3$
4.25	9164.1	18.625	83980728.81	38947.425
4	9102.8	16	82860867.84	36411.2
3.75	10840.8	14.0625	117522944.6	40653
3.75	11719.7	14.0625	137351368.1	43948.875
2.5	12852.4	6.25	165184185.8	32131
2	14582.8	4	212658055.8	291569.4
2	15784.7	4	249156754.1	31569.4
$X_2=22.25$	$X_3=84047.3$	$X_2^2=76.4375$	$X_3^2=1048715005$	$X_2 X_3=252826.5$
Fixed Deposit Interest Rate( $X_4$ )	Fixed Amount ( $X_5$ )	$X_4^2$	$X_5^2$	$X_4X_5$
4.46	5668.1	19.8916	32127357.61	25279.726
4.23	6044.9	17.8929	36540816.01	25569.927
4.06	5880.7	16.4836	34582632.49	23875.642
4.06	6043.7	16.4836	36526309.69	24537.422
2.79	6364.3	7.7841	40504314.49	17756.397
2.79	6350.2	7.7841	40325040.04	17717.058
2.79	8201.1	7.7841	67258041.21	22881.069
$X_4=25.18$	$X_5=44553$	$X_4^2=94.104$	$X_5^2=287864511.5$	$X_4 X_5= 157617.24$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	4.43	0.8571	0.7347
2003	4.19	0.6171	0.3809
2004	4.01	0.4371	0.1911
2005	4.01	0.4371	0.1911
2006	2.79	-0.7829	0.6129
2007	2.79	-0.7829	0.6129
2008	2.79	-0.7829	0.6129
	$X=25.01$		$(X-\bar{X})^2=3.3363$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Deposit of Everest Bank Limited.

Saving Deposit Interest Rate ( $X_2$ )	Saving Deposit Amount ( $X_3$ )	$X_2^2$	$X_3^2$	$X_2X_3$
5.5	1384.41	30.25	1915732.81	7612.55
5.25	1733.3	27.5625	3004328.89	9099.825
4.25	2758	18.0625	7606564	11721.5
4.5	3730.7	20.25	13918122.49	16788.15
3.25	4806.9	10.5625	23106287.61	15622.425
3.25	6929.2	10.5625	48013812.64	22519.9
3.25	9018	10.5625	81324324	29308.5
$X_2=29.25$	$X_3=30360.2$	$X_2^2=127.812$	$X_3^2=178889172.4$	$X_2 X_3=112672.85$
Fixed Deposit Interest Rate( $X_4$ )	Fixed Amount ( $X_5$ )	$X_4^2$	$X_5^2$	$X_4X_5$
5.42	2470.2	29.3764	610188.04	13388.484
5.46	2694.6	29.8116	7260869.16	14712.516
4.5	2803.4	20.25	7859051.56	12615.3
4.5	2914.1	20.25	8491978.81	13113.45
2.92	3444.5	8.5264	11864580.25	10057.94
3.25	4298.2	10.5625	18474523.24	13969.15
3.42	5658.7	11.694	32020885.69	19352.754
$X_4=29.47$	$X_5=24283.7$	$X_4^2=130.4733$	$X_5^2=92073776.75$	$X_4 X_5= 97209.594$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	5.43	1.2271	1.5059
2003	5.43	1.2271	1.5059
2004	4.46	0.2571	0.0661
2005	4.5	0.2971	0.0883
2006	2.96	-1.2429	1.5447
2007	3.25	-0.9529	0.9079
2008	3.39	-0.8129	0.6607
	$X=29.42$		$(X-\bar{X})^2=6.2795$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Deposit of Nepal Bangladesh Bank Limited.

Saving Deposit Interest Rate ( $X_2$ )	Saving Deposit Amount ( $X_3$ )	$X_2^2$	$X_3^2$	$X_2X_3$
6	1694.9	36	2872686.01	10169.4
5.5	2086.9	30.25	4355151.61	11477.95
5.5	2913.6	30.25	8489064.96	16024.8
4.5	4225.9	20.25	17858230.81	19016.55
4.75	5475.2	22.5625	29977815.04	26007.2
4.5	7414.8	20.25	54979259.04	33366.6
4.5	5582.9	20.25	31168772.41	25123.05
$X_2=35.25$	$X_3=29394.2$	$X_2^2=179.812$	$X_3^2=149700979.9$	$X_2 X_3=141185.55$
Fixed Deposit Interest Rate( $X_4$ )	Fixed Amount ( $X_5$ )	$X_4^2$	$X_5^2$	$X_4X_5$
5.85	5236.8	34.2225	27424074.24	30635.28
5.65	5453.6	31.9225	29741752.96	30812.84
5.4	5013.6	29.16	25136184.96	27073.44
4.35	4875.7	18.9225	23772450.49	21209.295
4.35	3536.6	18.9225	12507539.56	15384.21
4.35	2887	18.9225	8334769	12558.45
4.35	1578.1	18.9225	2490399.61	6864.735
$X_4=34.3$	$X_5=28581.4$	$X_4^2=170.995$	$X_5^2=129407170.8$	$X_4 X_5= 144538.25$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	5.88	0.9529	0.9079
2003	5.63	0.7029	0.4940
2004	5.42	0.4929	0.2429
2005	4.38	-0.5471	0.2994
2006	4.42	-0.5071	0.2572
2007	4.38	-0.5471	0.2994
2008	4.38	-0.5471	0.2994
	$X=34.49$		$(X-\bar{X})^2=2.8001$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Deposit of NSBI Bank Limited.

Saving Deposit Interest Rate ( $X_2$ )	Saving Deposit Amount ( $X_3$ )	$X_2^2$	$X_3^2$	$X_2X_3$
5.25	1259.5	27.5625	1586340.25	6612.375
5.25	1274.7	27.5625	1624860.09	6692.175
5.25	1820.7	27.5625	3314948.49	9558.675
3.5	2024.2	12.25	4097385.64	7084.7
3.25	2684.7	10.5625	7207614.09	8725.275
3.25	2832.7	10.5625	8024189.29	9206.275
3.25	3274.7	10.5625	10723660.09	10642.775
$X_2=29$	$X_3=15171.2$	$X_2^2=126.625$	$X_3^2=36578997.94$	$X_2 X_3=58522.25$
Fixed Deposit Interest Rate( $X_4$ )	Fixed Amount ( $X_5$ )	$X_4^2$	$X_5^2$	$X_4X_5$
6.25	2929.4	39.0625	8581384.36	18308.75
4.46	3132.7	19.8916	9813809.29	13971.842
4.46	3337.6	19.8916	11139573.76	14885.696
3.46	3371.4	11.9716	11366337.96	11665.044
3.65	4086.4	13.3225	16698664.96	14915.36
3.75	6116.2	14.0625	37407902.44	22935.75
3.5	5517.3	12.25	30440599.29	19310.55
$X_4=29.53$	$X_5=28491$	$X_4^2=130.4523$	$X_5^2=125448272.1$	$X_4 X_5= 115992.99$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	6.05	1.8429	3.3961
2003	4.57	0.3629	0.1317
2004	4.57	0.3629	0.1317
2005	3.46	-0.7471	0.5582
2006	3.58	-0.6271	0.3933
2007	3.67	-0.5371	0.2885
2008	3.55	-0.6571	0.4318
	$X=29.45$		$(X-\bar{X})^2=5.3313$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Deposit of Standard Chartered Bank Nepal Limited.

Saving Deposit Interest Rate ( $X_2$ )	Saving Deposit Amount ( $X_3$ )	$X_2^2$	$X_3^2$	$X_2X_3$
3	8404.6	9	70637301.16	25213.8
2.5	9441.8	6.25	89147587.24	23604.5
2.5	10633.1	6.25	11306281.56	26582.75
2	12771.8	4	163118875.2	25543.6
1.75	13027.7	3.0625	169720967.3	22798.475
2	14597.5	4	213087006.3	29195
2	15244.2	4	232385633.6	30488.4
$X_2=15.75$	$X_3=84120.7$	$X_2^2=36.5625$	$X_3^2=1051160186$	$X_2 X_3=183426.53$
Fixed Deposit Interest Rate( $X_4$ )	Fixed Amount ( $X_5$ )	$X_4^2$	$X_5^2$	$X_4X_5$
4.04	3471.7	16.3216	12052700.89	14025.668
2.79	2264.9	7.8441	5129772.01	6319.071
2.96	1948.5	8.7616	3796652.25	5767.56
1.96	1428.5	3.8416	2040612.25	2799.86
1.71	1416.4	2.9241	2006188.96	2422.044
1.71	2163.3	2.9241	4679866.89	3699.243
1.71	3196.5	2.9241	10217612.25	5466.015
$X_4=16.88$	$X_5=15889.8$	$X_4^2 = 45.4812$	$X_5^2=39923405.5$	$X_4 X_5= 40499.461$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	3.89	1.5014	2.2543
2003	2.75	0.3614	0.1306
2004	2.89	0.5014	0.2514
2005	1.97	-0.4186	0.1752
2006	1.72	-0.6686	0.4470
2007	1.75	-0.6386	0.4078
2008	1.75	-0.6386	0.4078
	$X=16.72$		$(X-\bar{X})^2=4.0741$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Lending of NABIL Bank Limited.

Lending Interest Rate ( $X_1$ )	Lending Amount ( $X_2$ )	$X_1^2$	$X_2^2$	$X_1X_2$
12.3	8173.1	151.29	66799563.61	100529.13
11.41	7072	130.1881	50013184	80691.52
10.95	7996.9	119.9025	63950409.61	87566.055
11	8635.1	121	74564952.01	94986.1
10.91	11078	119.0281	122722084	120860.98
10.86	13021	117.9396	169546441	141408.06
10.18	15657.1	103.6324	245144780.4	159389.28
$X_1=77.61$	$X_2=71633.2$	$X_1^2=862.9807$	$X_2^2=792741414.6$	$X_1 X_2=785431.12$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	12.13	1.2129	1.470
2003	11.41	0.3229	0.1042
2004	10.95	-0.1371	0.0188
2005	11	-0.0871	0.0076
2006	10.91	-0.1771	0.0314
2007	10.86	-0.2271	0.0516
2008	10.18	-0.9071	0.8229
	$X=77.61$		$(X-\bar{X})^2=2.5075$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Lending of Himalayan Bank Limited.

Lending Interest Rate ( $X_1$ )	Lending Amount ( $X_2$ )	$X_1^2$	$X_2^2$	$X_1X_2$
12.18	8836.6	148.3524	78085499.56	107629.79
12.13	9673.5	147.1369	93576602.25	117339.56
11.89	10894.2	141.3721	118683593.6	129532.04
11.89	13081.7	141.3721	171130874.9	155541.41
10.85	13245	117.7225	175430025	143708.25
10.85	15516	117.7225	240746256	168348.6
9.25	17672	85.5625	312299584	163466
$X_1=79.04$	$X_2=88919$	$X_1^2=899.241$	$X_2^2=1189952435$	$X_1 X_2=985565.64$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	12.18	0.8886	0.7896
2003	12.13	0.8386	0.7032
2004	11.89	0.5986	0.3583
2005	11.89	0.5986	0.3583
2006	10.85	-0.4414	0.1949
2007	10.85	-0.4414	0.1949
2008	9.25	-2.0414	4.1674
	$X=79.04$		$(X-\bar{X})^2=6.7665$



## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Lending of Everest Bank Limited.

Lending Interest Rate ( $X_1$ )	Lending Amount ( $X_2$ )	$X_1^2$	$X_2^2$	$X_1X_2$
12.04	2963.7	144.9616	8783517.69	35682.948
12.33	3969.6	152.0289	15757724.16	48945.468
11.9	5030.9	141.61	25309954.81	59867.71
11.9	6116.6	141.61	37412795.56	72787.54
10.62	7914.4	112.7844	62637727.36	84050.928
9.63	10124.4	92.7369	102503475.4	97497.972
9.92	14059.2	98.4064	197661104.6	139467.26
$X_1=78.34$	$X_2=50178.8$	$X_1^2=884.1382$	$X_2^2=450066299.6$	$X_1 X_2=538299.53$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	12.04	0.8486	0.7201
2003	12.33	1.1386	1.2963
2004	11.9	0.7086	0.5021
2005	11.9	0.7086	0.5021
2006	10.62	-0.5714	0.3265
2007	9.63	-1.5614	2.4381
2008	9.92	-2.0414	1.6165
	$X=78.34$		$(X-\bar{X})^2=7.4017$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Lending of Nepal Bangladesh Bank Limited.

Lending Interest Rate ( $X_1$ )	Lending Amount ( $X_2$ )	$X_1^2$	$X_2^2$	$X_1X_2$
13.36	7022	178.4896	49308484	35682.948
13.16	7969	173.1856	63504961	48945.168
12.93	8363	167.1849	69939769	59867.71
11.3	9996	127.69	99920016	72787.54
9.56	8740	91.3936	76387600	84050.928
9.56	9011	91.3936	81198121	97497.972
9.56	833	91.3936	68939809	139467.26
$X_1=79.43$	$X_2=59404$	$X_1^2=920.7309$	$X_2^2=509198760$	$X_1 X_2=668850.59$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	13.36	2.0129	4.0516
2003	13.16	1.8129	3.2865
2004	12.93	1.5829	2.5054
2005	11.3	-0.0471	0.0022
2006	9.56	-1.7871	3.1939
2007	9.56	-1.7871	3.1939
2008	9.56	-1.7871	3.1939
	$X=79.43$		$(X-\bar{X})^2=19.4273$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Lending of NSBI Bank Limited.

Lending Interest Rate ( $X_1$ )	Lending Amount ( $X_2$ )	$X_1^2$	$X_2^2$	$X_1X_2$
12.96	2838.7	167.9616	8058217.69	36789.552
12.42	5675.6	154.2564	32212435.36	70490.952
12.04	6028.5	144.9614	36342812.25	72583.14
12	6662	144	44382244	79944
11.58	8213.5	134.0964	67461582.25	95112.33
10	8905.1	100	79300806.01	89051
10	10538.1	100	111051551.6	105381
$X_1=81$	$X_2=48861.5$	$X_1^2=945.276$	$X_2^2=378809649.2$	$X_1 X_2=549351.97$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	12.96	1.3886	1.9281
2003	12.42	0.8486	0.7201
2004	12.04	0.4686	0.2196
2005	12	0.4286	0.1837
2006	11.58	0.0086	0.0001
2007	10	-1.5714	2.4694
2008	10	-1.5714	2.4694
	$X=81$		$(\bar{X}-X)^2=7.9903$

## ANNEX

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Lending of SCBNL .

Lending Interest Rate ( $X_1$ )	Lending Amount ( $X_2$ )	$X_1^2$	$X_2^2$	$X_1X_2$
12.63	4091	159.5169	16736281	51669.33
12.33	4529	152.0289	20511841	55842.57
12.04	4761	144.9616	22667121	57322.44
10.95	5491	119.9025	30151081	60126.45
10.67	6619	113.8489	43811161	70624.73
10.67	8060	113.8489	64963600	86000.2
9.78	9847	95.6484	96963409	96303.66
$X_1=79.07$	$X_2 =43398$	$X_1^2=899.7561$	$X_2^2=295804494$	$X_1 X_2=477889.38$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	12.63	1.3343	1.7803
2003	12.33	1.0343	1.0697
2004	12.04	1.7443	0.5540
2005	10.95	-0.3457	0.1195
2006	10.67	-0.6257	0.3915
2007	10.67	-0.6257	0.3915
2008	9.78	-1.5157	2.2974
	$X=79.07$		$(\bar{X}-X)^2=6.6040$

## Annex

Questions	Options Provided	Respondents	Total	Percent
1	a) Good b) Satisfactory c) Poor	11 9 -	20	55% 45% -
2	a) Yes b) No c) May be	12 4 4	20	60% 20% 20%
3	a) Yes b) No c) Don't Know	15 1 4	20	75% 5% 20%
4	a) High b) Low c) Medium	13 - 7	20	65% - 35%
5	a) Effective b) Satisfactory c) Not-Effective	12 8 -	20	60% 40% -
6	a) Yes b) No c) Don't Know	15 4 1	20	75% 20% 5%
7	a) Highly effecting b) Normally affecting c) Not effecting at all	13 7 -	20	65% 35% -
8	a) Deposit more b) Withdrawal more c) No effect	19 1	20	95% 5%
9	a) Good b) Satisfactory c) Inadequate	3 16 1	20	15% 80% 5%
10	a) Due to interest rate structure b) Due to political Situation c) Due to other factors	8 7 5	20	40% 35% 25%
11	a) Agree b) Disagree c) Don't Know	4 15 1	20	20% 75% 5%
12	a) Agree b) Disagree c) May Be	16 - 4	20	80%  20%
13	a) Yes b) No c) Don't Know	14 3 3	20	70% 15% 15%
14	a) Yes b) No c) May Be	19 - 1	20	95% - 5%

# Annex-1

## Questionnaire

A survey on interest rate structure and its influence on deposit and lending of Joint Venture Commercial Banks in Nepal.

Name:

Position:

Institution

Address:

1. How is present condition of Joint Venture Banks in Nepalese Financial Market?  
a) Good                      b) Satisfactory                      c) Poor
2. Does interest rate structure of bank is appropriate to attract the investors and depositors?  
a) Yes                      b) No                      c) May be
3. Is there higher lending rate in non productive sector compared to productive sector?  
a) Yes                      b) No                      c) Don't Know
4. How much you feel you are comfortable and safe to deposit your saving in the banks?  
a) High                      b) Low                      c) Medium
5. Does the interest rate on deposit and lending of bank is effective in Nepalese Financial Market?  
a) Effective                      b) Satisfactory                      c) Not-Effective
6. Do you agree that saving deposit scheme is more effective than Fixed Deposit Schemes?  
a) Yes                      b) No                      c) Don't Know
7. To what degree open boarder with India affect the interest rate on borrowing and lending?  
a) Highly                      b) Normally effecting                      d) Not effecting at all

8. In your experience , whether people deposits more or withdraw more in situation of violence and insecurity?

- a) Deposit more      b) Withdraw more      c) No effect

9. What do you think about Nepal Rastra Bank's regulation regarding interest rates?

- a) Good      b) Satisfactory      c) Inadequate

10. What are the reasons that banks aren't able to utilize the deposits in terms of loans to generate profit?

- a) Due to interest rate structure  
b) Due to Political situation  
c) Due to other factors

11. Do you agree that lending amount decreases with in increment in lending interest rate?

- a) Agree      b) Disagree      c) Don't' Know

12. Joint venture bank is playing important role in economic development of the country. Do you agree?

- a) Agree      b) Disagree      d) May Be

13. Do you think that lending rate should be reduced to attract investors?

- a) Yes      b) No      c ) Don't Know

14. Does inflation influences the interest rate?

- a) Yes      b) No      c) May be

ANNEX-3

Calculation of Standard Deviation, Correlation Coefficient, Coefficient of Determination, t value (calculated) and Mean of Interest with Deposit of NABIL Bank Limited.

Saving Deposit Interest Rate ( $X_2$ )	Saving Deposit Amount ( $X_3$ )	$X_2^2$	$X_3^2$	$X_2X_3$
4.75	4917.1	22.5625	24177872.41	23356.225
3	4889	9	23902321	14667
2.75	5237.4	7.5625	27430358.76	14402.85
2.5	5994.1	6.25	35929234.81	14985.25
3	7026.4	9	49370296.96	21079.2
2	8770.8	4	76926932.64	17541.6
2	10187.4	4	103783118.8	20374.8
$X_2=20$	$X_3=47022.2$	$X_2^2=62.375$	$X_3^2=341520135.3$	$X_2 X_3=126406.93$
Fixed Deposit Interest Rate( $X_4$ )	Fixed Amount ( $X_5$ )	$X_4^2$	$X_5^2$	$X_4X_5$
4.62	3719.2	21.3444	13832448.64	17182.704
3.25	2446.8	10.5625	5986830.24	7952.1
3.45	2552.6	11.9025	6515766.76	8806.47
2.87	2310.6	8.2369	5338872.36	6631.422
3.37	2078.6	11.3569	4320577.96	7004.882
3.41	3450.2	11.6281	11903880.04	11765.182
2.875	5435.2	8.26563	29541399.04	15626.2
$X_4=23.845$	$X_5=21993.2$	$X_4^2=83.2969$	$X_5^2=77439775.04$	$X_4 X_5= 74968.96$

Year	Avg. Interest Rate (X)	$(X-\bar{X})$	$(X-\bar{X})^2$
2002	4.64	1.3129	1.7236
2003	3.2	-0.1271	0.0162
2004	3.35	0.0229	0.0005
2005	2.82	-0.5071	0.2572
2006	3.32	-0.0071	0.0001
2007	3.21	-0.1171	0.0137
2008	2.75	-0.5771	0.3331
	$X=23.29$		$(X-\bar{X})^2=2.3443$