A STUDY ON PORTFOLIO MANAGMENT OF JOINT VENTURE BANKS OF NEPAL

(With Special Reference to HBL , SCBNL and Everest BANK)

By

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for

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DECLARATION

I, hereby, declare that the work reported in this thesis entitled "**A Study on Portfolio Management Of Joint Venture Banks Of Nepal** "(With Special Reference to HBL, SCBNL & Everest Bank) submitted to postgraduate campus, Biratnagar Faculty of management Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the **Master Degree of Business Studies (MBS**) under the supervision of Mr. Hiranya Prasad Gautam Lecturer in management Post Graduate Campus Biratnagar.

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Dinesh Majhi

Researcher

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ABBREVIATION

&	:	And
ARR	:	Average Rate of Return
C.V.	:	Coefficient of variation
CAPM	:	Capital Assets Pricing Model
CML	:	Capital Market line
EVBL	:	Everest Bank Limited
Govt	:	Government
HBL	:	Himalayan Bank Limited
NEPSE	:	Nepal Stock Exchange
NRS	:	Nepal Rastra Bank
Pvt.	:	Private
RRR	:	Required Rate of Return
S.D.	:	Standard Deviation
SCBNL	:	Standard Chartered Bank Nepal Limited
SML	:	Securities Market Line
P.E	:	Probable Error
APT	:	Arbitrage Pricing Theory
IRR	:	Internal Rate of Return
TOl	:	Total outside Investment
ROA	:	Return on Assets

FY	:	Fiscal Year
e.g	:	For Example
Ltd	:	That is
No	:	Limited
Rs	:	Number
S.N	:	Rupees
Yr	:	Year
JVBs	:	Joint Venture Banks

CHAPTER -I

INTRODUCTION

1.1 Background of the Study

Development of a country is linked with the economic development of that country. Nepal is an economically weak country lying on the lap of Himalayan and surrounded by two strong countries, China and India. Economic development is connected with banking system. Without economic development there is no possibility of rising the living standard of the people of that country. A great amount of capital needs to be utilized for the economic development.

The present scenario of the world economy clearly demonstrates that the world is carrying 6.5 billion of population out of which less than $1/4^{th}$ of population only can enjoy the fruit of development. Even the poorest countries of Asia, America and Latin America adopted the capitalistic theory to recover the backward economic state and it was believed to reduce the poverty with capitalistic approach. But trickle down model did not suit the poverty with capitalistic state. Again the benefit gone at the hand of strong countries like U.S., England, France who had already gained the stages of high mass consumption.

Integrated and speedily development of the country is possible only when competitive banking and financial service reaches nook and corners of the country. To grow financial activities it requires the banking habit of the community as well as potentially strong lending opportunities. The origin of the 'Bank' linked to Latin word 'bancus' meaning a bench, Italian word 'banca' meaning a bench and French word 'banque' meaning a bench. Simply, A bank is an institution which
deals in money and credit. Bank is an establishment for depositing, withdrawing and borrowing money. Bank collects money from public by

providing attractive sound interest and can earn profit by lending it on mainly in business organization, industrial, agricultural sectors etc.

Commercial banks are the institutions who pool together the scattered saving of the people and arrange for its productive use. In other words, they accept the surplus fund of people as deposit and supply it to meet the financial needs of modern business by various means. Successfully formulation of investment policy and its proper utilization or implementation is the prime requisite for the development or performance of banks and other financial institution. Good investment policy has positive impact on economic development of the country and vice-versa. A healthy development of any banks depends heavily upon its investment policy, Bank should attract to its customer by implementing best or competitive investment policy. It helps to increase the quality deposits, loan and investment. The best investment policy helps to minimize risk, to make profit and to increase efficiency of investment operation.

Investment portfolio is one such tool that helps for proper utilization of resources of the nation, A portfolio is usually defines as the combination of assets. Portfolio is defined as a combination of various securities, bonds and stocks where the investor or institution gets maximum return and bears the minimum risk. Portfolio management is related to the efficient portfolio investment in financial assets.

Finally, commercial banks are the backbone of developing as well as growing industries. Commercial bank collects the saving and investment of the economy and reinvests them in productive sectors. So, bank are essential sector of the business activity, which are established to promote the whole industry in the economy.

1.1.1 Development of Commercial Banks in Nepal

The evolution of the organized financial sector in Nepal has a more recent history compared to that in other developing south Asian countries.

The first commercial bank who had provided industrial loan was Nepal bank Ltd. This bank had started it's activities from 1997 A.D. and up to present it has been working in financial field. After establishment of NBL, it replaced Tejrath Adda by taking over its operation and over its limitation. To manage and control banking system development, monetary policy development and to mobilize capital for economic development "Nepal Rastra Bank" came into existence as central bank of Nepal in 1956 under Nepal Rastra Bank act 2012 B.S. After that to fulfill the growing credit requirement of the country the commercial bank "Rastriya Bankijya Bank" was established in 1966 under RBB Act, 1964 with fully government equity. In 1980, the government introduced "Financial Sector Reforms". Government allowed the entry of foreign banks in Nepal as joint venture bank entered to accelerate the economic development of nation and to service high banking system. About the history of foreign joint venture banks in Nepal, Nepal Arab Bank Ltd. Was the 1st joint venture bank established in Nepal in 29th Ashad, 2041. Joint venture banks are working under commercial bank act 2031 B.S., which is the backbone for the economic development of the country. More over, the economic liberalization process initiated by the government after 2043 B.S., resulted in the flow of private and joint venture banks in the country. During the past two decades, Nepalese financial sector, especially banking sector has undergone a drastic change. The opening up of financial market to foreign joint venture banks, ending monopoly of two state owned banks is really a notable step, after which a number of private foreign affiliated joint venture banks operating in Nepal with foreign collaboration.

1.1.2 Concept and Role of Joint Venture Bank in Nepal

Among the all banks, majority of banks are established as joint venture banks. The concept of joint venture bank is a new innovation in finance and it is on growing stage, mostly in developing countries. A joint venture bank is an association of two or more persons or parties undertaken to make the operation highly effective with their collective efforts. "Joint venture is a result of a contract between two or more parties

to take a commercial venture and to share gain or loss there of in agreed proportion" (Sulks, Grewal, Gupta; 1999, p 24) but in global perspective joint venture is the model of doing business through a particular partnership among the nation or among the investor or enterprises of different nations. The concept of joint venture mode of doing business especially in bank sectors dated back to the 19th century when U.S. and British banks operated their branches in Latin American, South African and Asian countries. In 20th century also international banking has become even wide spread.

Joint venture banks play an important role for economic development of the nation. In the year 1980, when the government introduced "Financial sector Reform", Nepal allowed the entry of foreign banks as joint ventures with up to maximum 50% equity participation. A meaningful step towards financial liberalization was undertaken in the fiscal year 1987/88. There has been substantial growth in the number of joint venture banks since 1985. The main reason behind this is the government liberal policy of allowing foreign joint venture banks since 1985. The main reason behind this is the government liberal policy of allowing foreign joint venture banks to operate in Nepal. They have been adopted new banking technique, hypothecation, syndication lending policies, credit cards, master card from international banking technique. They render various services to their customers in order to facilitate their economic and social life. The main roles of joint venture banks of Nepal are pointed out below:

- Emergence of healthy competition
- Foreign investment
- New banking techniques
- Contribution to national economy

Now a days, there are many joint venture banks and financial institution, but there are little opportunities to make fair investment. Meanwhile the banks and financial institution are offering very low deposit and financial institutions are offering very low deposit and credit interest rate. So to survive in the competitive banking market one should

follow the fundamental principles of sound investment policy with minimum risk and maximum profit.

How ever, the joint venture banks are operating in Nepal and play important role in the economic development of the country.

1.1.3 Objectives of joint Venture Banks

At present, most of joint Venture Banks are operating in financial sectors especially in banking, insurance, finance and leasing etc. Less effort has been made in manufacturing, construction, designing etc. Joint venture pose serious challengers to the existence but the same challengers can be taken by the domestic banks as an opportunity to modernize themselves and sharpen their competitive zealous.

So, it is clear that joint venture banks are playing and increasing dynamic role to boost up and improve the economic status. The main objectives of joint venture banks are described as follows;

a) Providing new services:

Even through the joint venture banks so far not providing any remarkable new services that was not offered by the domestic bank they have draws a large number of customers who assume that they will eventually benefit from their association with these banks when they introduce new services.

b) Introducing new methods and technology in banking services

The joint venture banks have invited a new era of banking in this underdeveloped country by introducing high technology and efficient methods in the banking business.

c) Providing more resources for investment

The joint venture banks have played a significant role in the channeling additional resources for investment for the development of the country. Although it is assumed that joint venture argued by many resources raised to locally in prevailing market those resources would have been mobilized.

d) Creating a competitive environment

The joint venture banks have creates a competitive environment in the banking business in Nepal. It will benefit the common man, business, industry and the country as whole.

e) Offering better links with international market

The joint venture banks are usually better place to raise resources internationally for aim able projects in developing country like Nepal mainly in international market. It is very easier for Nepalese business to product international linkage through the joint venture banks.

Apart from the above objectives, other various objectives can be there, such as to introduce new techniques relating to banking services to help for the establishment of multinational companies etc.

1.1.4 Profiles of the banks under study

In this section general introduction of the banks under study is being attempted to furnish for the easy reference of the samples to the research.

i) Standard chartered bank Nepal Ltd.

Standard chartered bank Nepal Ltd. (Former Name: Nepal Grindlays Bank Ltd.) was incorporated in 1986 as a third joint venture bank under the company Act, 1964. Today the Bank is an integral part of standard chartered Group who has 75% ownership in the company with 25% shares owned by the Nepalese public.

Standard chartered group employs 30,000 people in over 5,000 locations in more than 50 countries in the Asia, Pacific Region, South Asia, The Middle east, Africa, United Kingdom and America. It is one of the words most international banks with a management team comprising 79 nationalities. Initially, ANZ Grindlays Bank PLC is the foreign joint venture partner with 50 percent equity investment. Now, the bank has its partner, standard chartered; UK by the virtue of annexation of ANZ Grindlays Bank by Standard Chartered banking group. The main objective of the bank is to collect deposits and provide loans to agriculture,

commerce and industries and provide modern banking service to the people. SCBNL offers a full range of banking product and services in wholesale and consumer banking. Catering to a wide range of customers from individuals, to mid-market local corporate to multinationals and large public sector companies as well as embassies, aid agencies, airlines, hotels and government corporations.

Capital Status of Standard Chartered Bank Ltd. , FY 2010/11

S.N.	**Share capital**	**Percentage**	**Amount**
Domestic Ownership		**25**	**402,542,000**
1	Other Institution	2.14	34,379,700
2	Individuals	22.86	368,162,300
Foreign Ownership		**75**	**1,207,626,000**
1	SC Grind lays Ltd., Australia	50	805,048,000
2	SC Bank, London, UK	25	402,542,000
Total			**1,610,168,000**

ii) Himalayan Bank Ltd.

After the opening of Nepalese door to foreign commercial bank during mid eighties, Nepal took pride in growth and progress in the banking industries with the development by Nepalese government HBL was incorporated in 1992 by a few distinguished business personalities of Nepal in partnership with employees provident fund of Habib Bank Ltd, one of the largest commercial bank of Pakistan under the company act 1964. The operation of the bank started from February, 1993. It is the first commercial bank of Nepal whose maximum shares are held by the Nepalese private sector.

At the lunch period HBL had authorized capital Rs. 240m, issued capital of Rs. 120m and paid up capital of Rs. 60m. HBL has always committed to providing a quality service to its valued customer with a personal touch. The bank wherever possible offers tailored facilities to its

clients, to meet unique needs and requirements of different clients. The main objective of the bank is to provide modern banking facilities to the businessman, industrialists and other professionals and to provide loans on agriculture, commerce and industrial sectors. The bank already offers unique services such as Himal Remit, SMS banking, prepaid credit cards and internet banking to customers and will be introducing more services like these in the near future.

HBL is pioneer to bring products like credit cards, ATM and Telibanking cheque that are hard to counterfeit and so fourth. It also provides full range of banking products and services such as current saving, call and term deposit accounts, fund transfer services, safe deposit locker, priority banking, home banking, auto loan etc. creating to a wide range of customers and agencies, airlines, hotel and govt. Corporations.

Capital Status of Himalayan Bank Ltd. , FY 2010/11

S.N.	**Share capital**	**Percentage**	**Amount**
Domestic Ownership		**80**	**1,280,000**
1	Other Institution	65	1,040,000
2	Individuals	15	240,000
Foreign Ownership		**20**	**320,000**
1	Habib Bank Ltd., Pakistan	20	320,000
Total			**1,600,000**

iii) Everest Bank Limited

Everest Bank Limited was registered on November17, 1992 and comeinto operation on October 18, 1994 with an objectives of extending professionalized and efficient banking services to various segments of the society. The bank had an initial paid up capital of Rs 3 Crore. Today the bank has grown to become one of the leading banks in Nepal. Joint Venture Partner Punjab National Bank joined hands with Everest Bank Limited as a Joint Venture in 1997 and turned it around to a highly profitable bank. There has been no looking back since then. PNB provides top management support under the Technical Service Agreement. Punjab National Bank (PNB), our joint venture partner one of the largest

nationalized bank in India having 114 years of banking history, holds 20% equity Shareholding Pattern 50 % of the shares are owned by the local promoters, 20% by our joint venture partner Punjab National Bank, India and 30% of the shares are owned by the general public.

Vision

To evolve & position the bank as a progressive, cost effective & customer friendly Institution providing comprehensive financial & related services Integrating frontiers of technology & servicing various segments of society Committed to excellence in serving the public & also excelling in corporate values

Mission

To provide excellent professional services & improve itÊs position as a leader in the field of financial related services Build & maintain a team of motivated & committed workforce with high work ethos Use latest technology aimed at customer satisfaction & act as an effective catalyst for socioeconomic developments

Values and Ethics

We at EBL believe that the long term development of an organization depends on how we build trust among our stakeholders. Our values are focused on the ethics at work place and outside. Thus we need to be as transparent as possible through proper corporate governance. We have built a code of conduct where by all employees working, needs to follow it stringently.

Awards

The bank has been conferred with „Bank of the Year 2006, Nepal" by the banker, a publication of financial times, London. The bank was bestowed with the „NICCI Excellence award" twice in 1999 and 2003 by Nepal India chamber of commerce for its spectacular performance under finance sector.

Pioneering Steps

Recognizing the value of offering a complete range of services, we have pioneered in extending various customer friendly products such as Home Loan, Education Loan, EBL Flexi Loan, EBL Property Plus (Future Lease Rental), Home Equity Loan, Loan Against Share, Loan Against Life Insurance Policy and Loan for Professionals EBL was one of the first bank to introduce Any Branch Banking System (ABBS) in Nepal EBL has introduced ÂBank on WheelÊ system, whereby the bank is installed in a vehicle and moves around to various places to serve the segment deprived of proper banking facilities through its Birtamod Branch EBL is the only bank having representative office in a foreign soil. The office facilitates

remittance and Nepalese working in India can even open accounts through the office.

Capital Status of Everest Bank Ltd. , FY 2010/11

S.N.	Share capital	Percentage	Amount
Domestic Ownership		**80**	**894,851,390**
1	Other Institution	12	130,821,400
2	Individuals	68	764,029,990
Foreign Ownership		**20**	**224,758,100**
1	Punjab National Bank., India	20	224,758,100
Total			**1,119,609,490**

1.2 Statement of Problem

The major problem in almost all underdeveloped countries and Nepal is the capital formation and proper utilization. In such country's joint venture banks have more responsibilities to avoid above problem and thereby contribute to the national economy. Nepal, as an economically back pushed country, most of the resources of the country are remained unused due to lack of financing. This inadequacy of financing can be removed by participation of foreign investors in the commercial banks to some extent. With this view welcomed the joint venture banks in Nepal. Joint venture foreign commercial banks are operating in Nepal after the government adopted the open liberal and market oriented economic policy, the financial sectors has not been enough to meet the growing resource need to the economy.

With prevailing economic condition of the country the investment in agriculture, manufacturing, industrial sectors has not grown satisfactory. Hence, the joint venture banks and commercial banks are not succeeding perfectly to shift the deposit in profitable sectors. Competitions being the burning issues at present in the country. Joint venture banks and other financial institution mushroomed in a short time span but investment opportunity is not comparatively extended.

Every investor and business entity has different expectation about the risk, return and future value in terms of dividend, interest and capital gain. And they are independent to invest their funds in either stock. They always think about expansion and growth by investing in secured area. Most of the investors are interested to invest in less risky and liquid sectors, they invest in single security. Though some of the investors invest in two of more randomly. They invest their funds in different securities on the basis of expectation and assumption of individual security to invest. There are some problem to Nepalese investors and financial institution such as lack of knowledge about the function of stock exchange, corporate funds to investment, knowledge and practice of portfolio to diversity the risk and return. Under such situation, the present study will try to analyze investment portfolio management of joint venture Banks, return on various types of investment, portfolio risk and return and performance towards investment, thus this study will deal with the following issues:

1) What is the relationship of investment and loan and advance with total deposit?
2) How far JVBs have been able to mobilize and utilize domestic resources?
3) How is the investment portfolio managed by the joint venture banks?
4) Is joint venture banks effectively utilized portfolio concept in their investment directed towards objectives of maximize return?
5) What is the trend of investment in different assets?
6) Is JVBs effectively utilized portfolio concept in their investment directed towards objectives of maximize return?

1.3 Objectives of the Study

The main objective of the study is to analyze, examine and interpret the portfolio management of Nepalese joint venture banks. The specific objectives of this research are pointed as follows:

1) Functions and services of selected Joint Venture Banks.
2) To evaluate the investment portfolio of joint venture banks.
   a) To analyze the risk and return of selected joint venture banks on investment using portfolio concept.
   b) To evaluate and interpret the financial performance of those banks in term of investment strategies.
   c) To examine the trend of investment in different sector.
3) To suggest and recommend some measure, on the basis of analyzing data and findings.

1.4 Significance of the Study

Many commercial banks are being established time to time, after the restoration of democracy in 2046 B.S. because of the fair governmental policy on industrial sector. Some banks are strongly failure and some other smoothly operated. At present, joint venture banks are going a wide popularity through the efficient management and professional service and eminent role in the economy. Regarding the economic structure of the country, the banks do not have sufficient investment opportunities. Successful formulation and effective implementation of investment policy is the prime requisite for the successful performance of banks and other financial institution. Therefore, the study is to analyze the existing investment portfolio of joint venture banks of Nepal and point out the various weakness of defect inherent in it and provide package of suggestion for its improvement. This study is significant in the following ways:

a) Importance to policy formulators and also be useful for teachers, students of the subject.
b) This study will be helpful to investors regarding the risk return statistics association with investment.
c) Importance to management bodies of sample banks for the evaluation of the performance of their banks and in comparison with other banks.

d) This study will be helpful to know about the portfolio management taken by Nepalese investor and financial institution.
e) Importance to interested outside parties such as investors customers (Depositors, loan takers as well as other types of clients), competitors and personnel of the banks, stockbroker, dealers and market makers.

1.5 Limitation of the study

This study is not a comprehensive study. This study is conducted for the partial fulfillment of degree of MBS. So there are many deficiencies may find in this study due to various limitations some of the limitations are as follows:

1) Among the various commercial banks the study is covered only two banks which are:
   i) Himalayan Bank Ltd.
   ii) Standard Chartered Bank Nepal Ltd.
   iii) Everest Bank Limited
2) This study is based on secondary data collected from financial statement, annual reports etc.
3) The study only covers the five fiscal years.
4) There are many factors that affect investment decision and valuation of the firm. However only on those factors, which are related with investment portfolio analysis will be consider in this chapter.
5) Due to the wide range of data deficiencies only simple techniques have been used in analysis.
6) Time and resources constraints may limit the areas covered by the study.

1.6 Organization of the Study

This study will be organized into five chapters as follows:

Chapter -I: Introduction

The first chapter is introduction. It includes the brief discussion of the subject matter of the study.

Chapter -II: Review of Literature

This chapter deals with the theoretical aspect of the topic on investment portfolio in more detail and descriptive manner.

Chapter -III: Research Methodology

This chapter describes the methods and process applied in the entire aspects of the study.

Chapter -IV: Data presentation and analysis

In this chapter the investment portfolio of joint venture banks in analyzed with the help of different financial and statistical tools.

Chapter -V: Summary, Conclusion and Recommendation

This chapter is the end part of the main body. It consists summary, conclusion, suggestion and recommendations.

Chapter -VI: References materials

This is the end part of the research report. It includes:

a) Bibliography
b) Appendix

CHAPTER - II
REVIEW OF LITERATURE

Review of literature means reviewing research studies or other relevant prepositions in the related areas of the study. In this chapter the focus has been made the review of literature relevant to the investment portfolio of joint venture banks. It mainly covers two parts. The first section of this chapter includes theoretical framework where as second part is confirmed to review of those students which are done by previous researcher.

The following sources are used for the study

- Journals - Annual reports - Research works
- Websites - Books - Articles

2.1 Review of supportive Text

Review of supportive text highlights the relevant literature provides conceptual framework and foundation to present study. Following subjection to this section will be explaining the conceptual matters.

2.1.1 What is Investment?

Investment, in its broadest sense, means the sacrifice of current Rupees (dollars) and resources for the sake of future Rupees (dollars) and resources. In other words, it is a commitment of money and other resources that are expected to generate additional money and resources in the future. Such a commitment takes place in the present and is certain to occur but the reward comes in the future always remains uncertain. Therefore, every investment entails some degree of risk. Investments are made in assets. Assets, generally, are of two types: real assets (land, buildings, factories etc) and financial assets (Stocks, Bonds, T-Bills etc).

These two types of investments are not competitive but complementary, highly- developed institutions for financial investment greatly facilitating real investment.

"The world investment brings fourth vision of profit, risk, speculation and wealth" (chancy, john M. and Mosses, Edward. A (1992) page 6)

According to Sharpe and Alexander "Investment in its broadest sense, means the sacrifice of certain present value for (possible uncertain) future value, "(Sharpe, William F. Gordon J. Alexander and Jeffery V. Bailey (2000)

According to F. Amling

"Investment may be defined as the purchase by an individual or institutional investor of a financial or real assets that produces a return proportional to the risk assumed over some future investment period."

According to Donald. E. Fischer and Ronald. J. Jordan,

"An investment is a commitment of funds made in the expectation of some positive rate of return. If the Investment is properly undertaken the return will be commensurate with the risk the investor assumes."

(Fisher, Donald E. and Ronald J. Jordan)

An analysis of the above definitions makes us clear that 'investment' has the following attributes.

i) Application of return
ii) Involvement of risk
iii) Time dimension

A commercial bank must always mobilize its funds and other deposits to profitable, secured and marketable sector so that it earns a handsome amount of profit as well as it should be secured and can be converted into cash as per the requirement.

There are two forms of investment, financial investment and real investment. Investment in financial assets like common stock, bond etc are

called financial investment. A real asset represents an actual tangible asset that may be seen felt, held or collected e.g. real estate, gold etc. Investment in such tangible assets is called real investment.

2.1.2 Investment Process

The investment process describes how an investor makes decisions about what securities to invest in, how extensive these investments should be, and when they should be made. The investment process involves five steps: (Francis, Jack Clark (2002) : Page 10)

1) Set investment policy;

The first step of the investment process is to set investment policy. It involves determining the investor's objectives and the amount of his or her invest able wealth. This step involves the identification of the potential categories of financial assets for consideration in the ultimate portfolio.

2) Perform Security Analysis

The second step of the investment process is to perform security analysis. Security analysis involves examining a number of individual securities (or groups of securities) within the board categories of financial assets. There are two main approaches to security analysis. They are:

(i) Technical analysis (ii) Fundamental analysis

3) Construct a portfolio

The third step of the investment process is construction of portfolio. Construction of portfolio involves identification of specific securities in which to invest, along with the proportion of invest able wealth to be put into each security.

4) Revise the portfolio

The fourth step of the investment process is portfolio revision. Portfolio revision involves both realizing that the currently held portfolio is not optimal and specifying another portfolio to hold with superior risk return characteristics.

5) Evaluate the portfolio performance

The fifth step of the investment process is evaluate the portfolio performance evaluation. It involves determination of the actual performance of a portfolio in terms of risk and return, and compares the performance with that of an appropriate "benchmark" portfolio.

2.1.3. Investment alternatives available for Nepalese investors

(i) Equity securities: common stock, Preferred stock

(ii) Debt securities: short-term debt securities-Banker's acceptance; treasury bills (issued by Nepal Rastra Bank)

(iii) Saving bonds: national saving bonds issued by Nepal Rastra Bank.

(iv) Development Bonds: Issued by Nepal Rastra bank.

(v) Corporate Bonds: Issued by business corporation and traded in NEPSE.

(vi) Rights: Issued by various commercial Banks.

(vii) Real assets: Gold, Silver, Land, Farmland, Diamonds, Prints, Fine art etc.

(viii) Mutual Funds: Nepal Capital Market (NCM) mutual funds and citizen unit scheme (CUS)

2.1.4 Concept of Return on Investment

While selecting an investment alternative the first task of the investor is to identify the amount of rate of return. Every investor wants to have a return from an investment as much as they need. Return is the motivating force in the investment process that is it is the reward for undertaking the investment. Return on a typical investment consists of two components. The first component is the period cash receipts (either interest or dividends) and the second is the appreciation (or depreciation) in the price of the asset and this is commonly called a capital gain or loss.

The total return on investment is the sum of the ordinary gain and capital gain or loss.

Total return = Capital gain (loss) + Ordinary gain

2.1.4.1 Classification of Measurement of Return

2.1.4.1 a) On the basis of from of return

i) Required Rate of return

Required rate of return is the minimum return that an investor expects at least not to suffer from loss.

ii) Expected Rate of Return

We invest today in an expectation of earning in the future. That is, investment decision, that we make today, are based on expectations of returns in the future. So, the expected returns are unknown for the investors. The return which we expect in the future is the weighted average rate of return, using the probability of each rate of return as the weight. Expected rate of return will always more than the required rate of return, the expected rate of return is calculated by summing the products of the rates of return and their respective possibilities.

$$\textit{Expected Value, } E(r) = \sum_{j-1}^{n} r_j \, p_j$$

Where, $\sum(r)$ = Expected rate of return

Pj = Probability associated with return of investment

rj = Rate of return of investment

When historical returns are used, the following formula is used to calculate the rate of return.

$$\sum^{n}$$

Expected Value, $E(r) = \frac{t-1}{n} r_t$

Where, n= Total number of years

2.1.4 (b) On the basis of time period of investment

(i) Signal period rate of return

Single period return may be defined as the change in value plus any cash distributions expressed as a percentage of the beginning of period investment value.

$$Single\ \ Period\ \ rate\ \ of\ \ return,\ \ r_t = \frac{(\text{Price}\ \ Change) + Cash\ \ divided}{Purchase\ \ \text{Price}\ \ at\ \ start\ \ of\ \ the\ \ period}$$

(ii) Multi period return

A Multi period return is the return earned during the multiple periods of holding the securities.

$$\bar{R} = \frac{r_1 r_2 r_3 + \ldots\ldots\ldots\ldots r_n}{n}$$

Where

$\bar{r}$ = Average rate of return

R_1, R_2 = Observed rate of return of periods

n = Total number of periods

2.1.1.1.c. On the Basis of Average Return

(i) Arithmetic Mean

The arithmetic mean is calculated by dividing the total return of multiple periods by the number of observation or returns. The mean return in question is as follows:

$$\bar{R} = \frac{r_1 r_2 r_3 + \ldots\ldots\ldots\ldots r_n}{n}$$

Where

$\bar{r}$ = Arithmetic Mean return

R_1, R_2 = Single period return at time t

n = No. of observations or returns

$$GM = \sqrt[n]{(1+r_1)(1+r_2).....(1+r_n)}$$

Where

GM = The geometric Mean return

R_1 = The return for time period 1

n = The total number of time periods

2.1.5 Concept of Risk on Investment

Risk is the variability of return. The deviation between the expected and actual return brings variability in the return and the variability is termed as risk. The higher the deviation between expected and actual return, the higher will be the risk.

Risk in the other words, is defined as uncertainly of returns and if there is creativity there is no risk at all. Risk and return in investment go together and without risk no more return can be expected. Numerous factors may contribute to investment uncertainty. The uncertainly makes investment risky. The sources of uncertainly the contribute to investment risk are as follows.

- Liquidity Risk
- Interest Rate Risk
- Default Risk
- Call ability Risk
- Convertibility Risk

- Bull - Bear market Risks
- Industry Risk
- Management Risk
- Political Risk
- Purchasing Power Risk

2.1.6 Introduction to Portfolio Management

Portfolio is the diversification of investment in this manner that weighted average return will be maximize. It was originally proposed by Harry M. Markowitz on applied economist in this article "Portfolio Selection", Published in journal of finance in 1952. Portfolio is collection or group of assets. It is a collection of securities. The basic assumption of portfolio theory is to maximize the return from the given level of risk. It also assumes that investors are basically risk averse, meaning that, given a choice between two assets equal rates of return they will select the assets with the lower level of risk.

Portfolio management is related with efficient portfolio investment in financial assets. Primary objectives of the portfolio are to maximize returned and to minimize risk. Whereas, the secondary objective includes regular return, stable income, appreciation of capital, liquidity, easy marketability, safety investment and tax benefit.

According to Weston and Brigham,

"A portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment is called a portfolio. "(Weston, J.Fred and Eugene F. Brigham, 9th edition)

According to Keith Ambachtcheer,

"Portfolio management concerns itself with selecting 'good' stocks or a bond is fading. "(Keith, Ambachtscheer (1974)

Diversification can be defined as "not putting the all eggs in a single basket." It means the investor should invest their wealth in different stocks of the company to minimize the risk and to maximize the return.

Portfolio theory can be used to determine the combination of securities that will create the set of efficient portfolios. The selection of the optimal portfolio depends on the investor's preferences for risk and return an appreciation of the theory will provide the investor will a better understanding of how risk is measured in a portfolio context and the relationship between return and risk.

2.1.7 Diversification and Portfolio Analysis

Diversification is the one important means that control portfolio risk. The objective of portfolio analysis is to reduce risk. By combining securities of low risks with securities of high risk, success can be achieved by an investor in making a choice of investment out lets. Diversification is essential to the creation of the efficient investment because it can reduce the variability of returns around the expected return. (Bodie Kane and Marcus, Page 162, 2008)

Diversification of portfolio helps to minimize risk and different diversification techniques have been developed for reducing portfolio risk.

(i) Simple diversification (naive or random diversification)

The simple diversification would be able to reduce unsystematic or diversifiable risk. Simple diversification is the random selection of securities that are to be added to a portfolio. Simple diversification is defined as "not putting all the eggs in one basket" or "spreading the risk", simple diversification reduces a portfolio's total diversifiable risk to zero and only the undiversifiable risk remains. It was found in many research studies that 10-15 securities in the portfolio would bring adequate returns. So this approach assume that an investor can expect a reasonable return for a given level of risk.

(ii) Superfluous diversification (over diversification)

It refers to the investors spreading himself in so many investment on his portfolio. Large number of assets spreading of the portfolio assets is superfluous diversification. No further risk reduction is possible by superfluous diversification but instead it arouses more portfolio management problem like high research cost, high transactions costs, impossibility of good portfolio management etc. The performance of portfolio will not improve and will lower the net return to the investor.

(iii) Diversification across industries

Another techniques to diversify the portfolio is diversification across industries. Under this technique, assets in the portfolio are selected from different industries rather than from one industry. Investment diversify their portfolio to minimize the total risk, though many empirical researchers have shown that diversifying across industries is not much better than selecting securities randomly. Studies of the rates of return from securities in many industries have shown that nearly all industries are highly correlated with one another.

(iv) Simple diversification across quality rating categories

Diversification of portfolio also possible across the quality rating assets or securities. Different rating agencies rate different companies and their assets on the basis of the possibility of default risk or the risk of bankruptcy, under a simple diversification across quality rating categories, we select assets randomly from the homogeneous quality rating. The highest quality portfolio or randomly diversified stocks will be able to achieve lower level of risk than the simple diversified portfolio of lower quality stocks.

(v) Markowitz Diversification

A more analytical technique to diversify a portfolio is Markowitz diversification. Harry M. Markowitz developed this theory of

diversification in 1952. This is also called the modern theory of portfolio management. Markowitz diversification is the combining of assets, which are less than perfectly positively correlated in order to reduce portfolio risk. It can sometimes reduce risk below the unverifiable level.

Markowitz diversification is based on the correlation. Under this theory, if portfolio is made by combining assets which are less than perfectly positively correlation (+1), the reduction in risk is possible without sacrificing portfolio returns. The lower the correlation between assets, the more the Markowitz diversification will be able to reduce the portfolios risk. If the assets are perfectly negatively correlated (-1), the risk less portfolio is possible.

2.1.8 Expected Return and Expected Risk on Portfolio

2.1.8.1 Meaning of Expected Return on Portfolio

'Expected return of the portfolio is the weighted average expected return of assets included in the portfolio. Where the weights are the proportion of investment initially made in each assets included in the portfolio. The weights are the proportion of total funds invested in each security and the sum of weights equal to 100% (Cheney, john M. & Mosses, Edward. A (1992) Page 652). A portfolio weight can be either positive or negative.

The formula for calculating the portfolio weight is:

$$W_A = \frac{Doller\ \ amount\ of\ \ \text{sec}urity\ 'A'\ \ bought}{Total\ \ equity\ \ investment\ \ in\ \ the\ \ portfolio}$$

The portfolio expected return on portfolio consisting of two securities is defined in equation as follows.

$$E(r_p) = W_A \text{ x } E(r_A) + W_B \text{ x } E(r_B)$$

Where,

$E(r_p)$ = Expected return on portfolio

W_A = Weight of securities A

W_B = Weight of securities B

$E(r_A)$ = Expected return on securities A

$E(r_B)$ = Expected return on securities B

The portfolio expected return consisting more than two securities is defined in equation as follows.

$$E(r_p) = \sum_{i=1}^{n} W_j E(r_j) = W_1 E(r_1) + W_2 E(r_2) + ... + W_n E(r_n)$$

Where,

W_j = Weight of the funds invested in a securities j

$E(r_j)$ = Expected return on individual stock

n = no. of securities in the portfolio

2.1.8.2 Meaning of Risk on Portfolio

'The calculation of a portfolio risk is not as straightoforward as the calculation of a portfolio's expected return. A statistical measure of total risk is the variance or its square root, the standard deviation. The standard deviation or the variance of returns from an investment is the total risk of investment' (Cheney, Jhone M. Mosses, Edwrds, A (1992), page 653) The variance of returns from a portfolio's made up of an assets is defined by following equation.

$$Var(r_p) = \sum_{i=1}^{n} \sum_{i=1}^{n} W_1 W_j Cov_{ij}$$

Where,

W_1= Proportion of investment in security i

W_j= Proportion of investment in security j

Cov_{ij} = Covariance of the returns between security I and security j

N = No. of assets included in the portfolio

$Var(r_p)$ =Variance of returns of portfolio

2.1.8.3 Covariance and Correlation Coefficient in Portfolio Risk

2.1.8.3 a. Meaning of Covariance in Portfolio Risk

The covariance is an absolute measure of the degree of relationship between the returns a pair of securities. In other words, covariance is the joint variance of any two securities. It is a statistical measure of the relationship between two random variables. A positive value of covariance indicates that the securities returns tend to more in the same direction. A negative value of the covariance indicates the return of securities move in the opposite direction and the zero value of the covariance indicates no relationship between the securities return. The covariance between the securities return can be calculated by using following equation:

(i) If past data are used

$$\text{Cov}(r_i, r_j) = \frac{\sum[r_i - \sum[r_j \sum(r_j)}{n}$$

(ii) If probabilities are used

$$\text{Cov}(r_i, r_j) = \sum[ri - \sum(ri][rj - \sum(rj)]$$

Where,

Cov (r_j, r_j) = Covariance between return on securities I and security j

r_i, r_j = Single period return on security I and j

e(r) = Expected rate of returns

n = No. of observations

p = Probability of return

2.1.8.3 b Meaning of Correlation in Portfolio risk

"(Correlation is a relative measure of relationship that is bounded by + 1.0 and -1.0). Weston. J Fred Eugene F Brigham. Page 195). It is a statistical measure of the extent to which the returns on any two securities are related, however, it denotes only association not causation. The correlation measure the degree of relationship of movement of securities return. Correlation is measured by using the following formula.

$$Pij = \frac{Cov_{ij}}{\sigma_i \sigma_j}$$

Portfolio risk Reduction Depends on:

1. The number of securities in the portfolio
2. The correlation between the return from the individual securities in the portfolio.
3. The weight of the individual securities in the portfolio in relation to their correlation among one another.

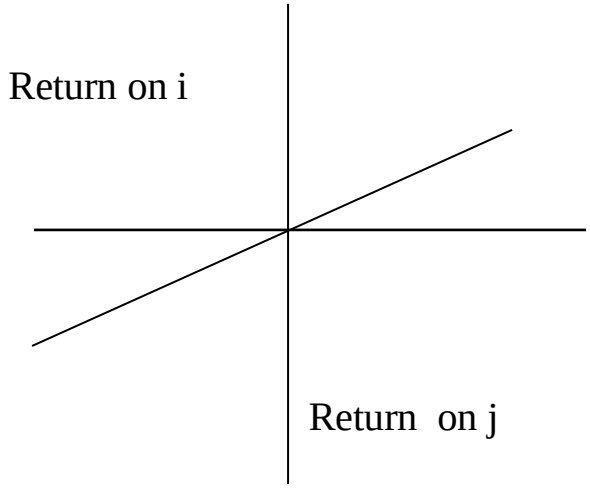
Various cases of correlation and risk condition

Case 1 - perfect positive correlation ($p_{ij} = +1$)

Returns on two perfectly positively correlated stock would move up and down together and a portfolio consisting of two such stocks. Would be exactly as risky as the individual stocks. Thus diversification does nothing to reduced risk if the portfolio consists of perfectly positively correlation stock. It is presented in the figure below.

Figure No. 2.1

Figure presenting the perfectly positively correlated return

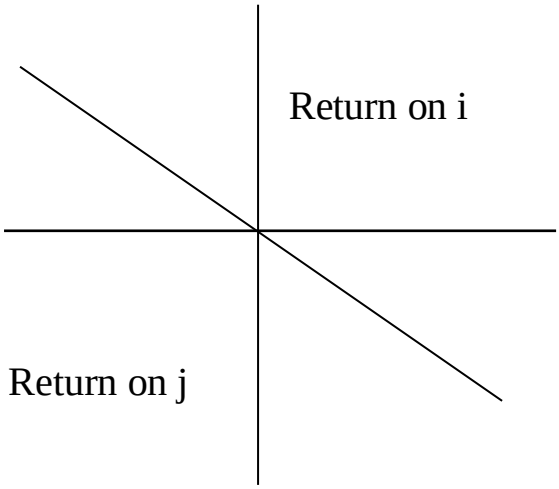


Case -2 perfect negative correlation ($p_{ij} = -1$)

Return on two perfectly negatively correlated stocks would move perfectly together but in exactly opposite directions. In the condition, risk can be completely eliminated. Perfect negative correlation almost never found in the real world. It is presented in the figure below:

Figure No. 2.2

Figure presenting the perfectly negatively correlated return

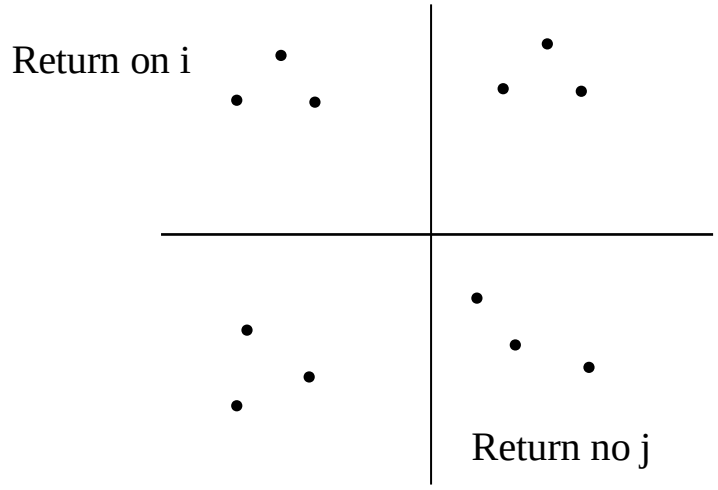


Case 3: No relationship between returns ($p_{ij} = 0$)

When the correlation between two stocks is exactly zero, there is no relationship between the returns, they are independent of each other. In this condition, some risk can be reduced. It is shown in figure below:

Figure No. 2.3

Figure presenting the uncorrelated return



Cases 4: Intermediate risk (P_{ij} = +0.5)

Most stocks are positively correlated but not perfectly. On average the returns on two stocks would lie on the range of +0.4 and +0.75 under this condition combining stock into portfolios reduces but does not eliminated at completely.

2.1.9 The characteristic line and the CAPM

2.1.9.1 The characteristic line

Characteristic line is the line of best tit through a scatter plot of rate of return for individual risky assets and for the market portfolio of risky asset our some designated past period. It is also known as regression line total risk of an assets consist of systematic risk and unsystematic risk. The characteristic line is used to measure stat is tickly the diversifiable risk and undiversified risk of individual assets and portfolios. The characteristic line shows the relation between the return on an asset and the return on market portfolio. A part from this it expresses systematic risk of assets in

terms of market forces which simultaneously affect the prices of all securities. The equation for the characteristic line is as follows.

$$r_{it} = a_i + b_i r_{mt} + e_{it}$$

Where ,

r_{it} = rate of Saturn for asset i during period t

r_{mt} = rate of Saturn for the market portfolio during period t

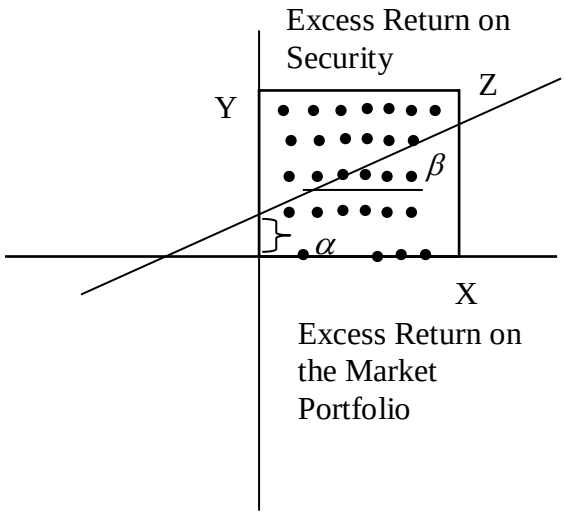
a_1 = Constant term or intercept of the regression

b_1 = Slope coefficient for the regression, a measure of undiversitiable risk.

e_{it} = The random error around the regression line for security I during time period t.

Figure No. 2.4

Figure Presenting the Security characteristic line



Diversifiable Risk

'Diversifiable risk is also unsystematic risk. This type of risk is unique to an organization and can be largely eliminated by holding a diversified portfolio of investment. It is caused by events particular to the firm like, labor strikes, management errors, inventions, advertising campaigns, shifts in consumer taste and lawsuits etc '(Francis, Jack Clark (2003), page 265

The unsystematic risk is unique to each firm, an efficiently diversified portfolio of securities can successfully eliminate most of the unsystematic risk inherent in individual securities.

Undiversifiable Risk

Undiversifiable risk is also known as systematic risk. This risk is that type of risk which affects the overall market. Undiversifiable risk occurs due to the changes in the macro-economic factors like, interest rate, inflation, investors expectations, gross domestic product etc. Moreover, it is the causes of external environment (Political, economic, sociological and technological) of the firm.

Undiversifiable risk is that part of the total risk that con not be eliminated by allocating capital to a diversified portfolio of investment. The beta coefficient (β) is an index of systematic risk of assets. Mathematically the systematic risk beta is measured as the covariance of the stock returns with the market returns expressed per unit of market variance as follows: (Weston, J. Fred and Thomas E. Copeland, page 392)

$$Beatacoefficient\,(b_i = \frac{Cov(r_i r_m)}{\sigma^2{}_m}$$

Where,

B_i = beta coefficient of ith assets

$\sigma^2{}_m$ = variance of market return

Cov (r_i, r_m) = Covariance between the returns of security and the market

2.1.9.2 Capital Assets Pricing Model (CAPM)

Harry M. Markowitz laid down the foundation of modern portfolio theory in 1952. The CAPM was developed 12 years later by William Sharpe, John Linter and Jan Mossin.

CAPM is a model on the presentation that any stocks required rate of return is equal to the risk of rate of return plus its risk premium, where risk

is measured by the beta coefficient capital assets are long term financial as well as real assets and CAPM is based on the pricing of these assets. Modern portfolio theory of Markowitz suggests that the investment decision should be based on the risk and the price of assets should also be determined on the basis of the total risk. But the CAPM suggests that, any investor can create the portfolio of assets that will elimite virtually all diversifiable risk, the only relevant risk is non diversifiable risk, therefore, the investment decision and the pricing of capital assets should be based on the undiversiable risk.

The CAPM represents the trade - off systematic risk fro the returns that investors expect and are fettled to receive. CAPM suggests that in equilibrium market, every security available in the market is priced and they provide risk - adjusted rate of return. CAPM combines the principles of portfolio theory with certain assumption regarding investor's expectations and market characteristics.

Assumptions of CAPM

1) All investors have the same one period investment horizon.
2) No taxes and no transaction costs for buying and selling securities exist.
3) No inflation and no change in the level of interest rates exist.
4) The capital markets are in equilibrium.
5) All investments are infinitely divisible, fractional shares may be purchased in any portfolio or any individual asset.
6) All investors are Markowitz- efficient diversifiers who delineate and seek to attain the efficient frontier.
7) An infinite amount of money can be borrowed or lent at the risk free interest.

The CAPM equation is written as follows:

$$E(ri) = rf + [E(rm) - rf] bj$$

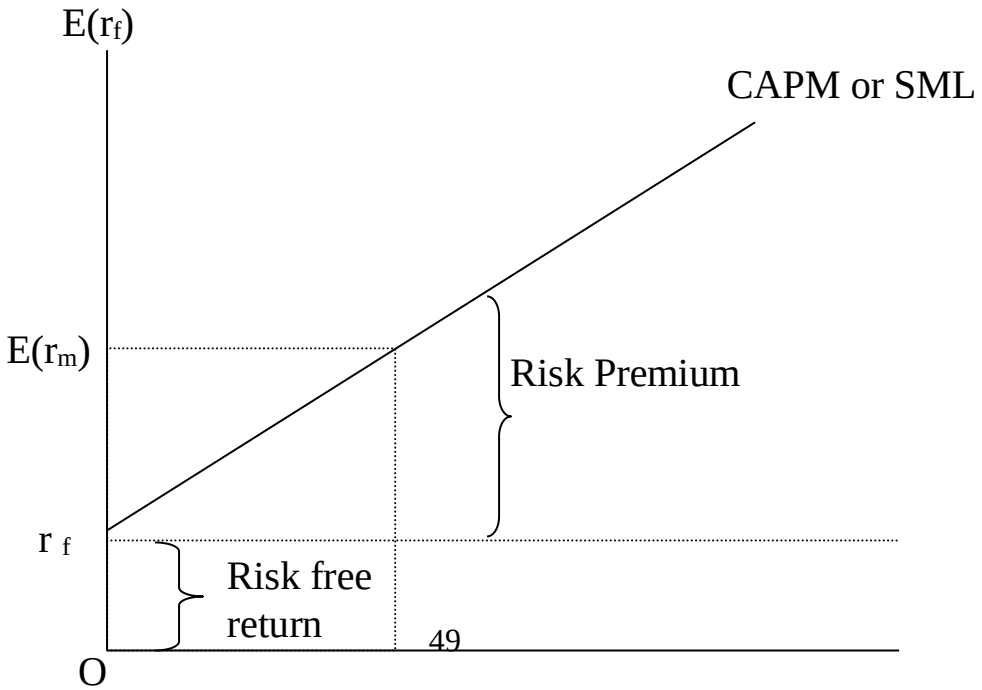
Where,
E(ri) = required rate of return on asset i,
rf = risk free rate of return
E (rm) = Expected return on market portfolio,
bi = beta or systematic risk index of asset i.

2.1.10 Security Market Line (SML)

Security market line is the line showing the relationship between systematic risk index (beta) and the required rate of return. It is the graphical representation of CAPM.

SML is the line that shows the relationship between risk as measured by beta and the required rate of return for individual security.

Figure No. 2.5
Figure presenting the CAPM or SML



Overpriced and a Under priced

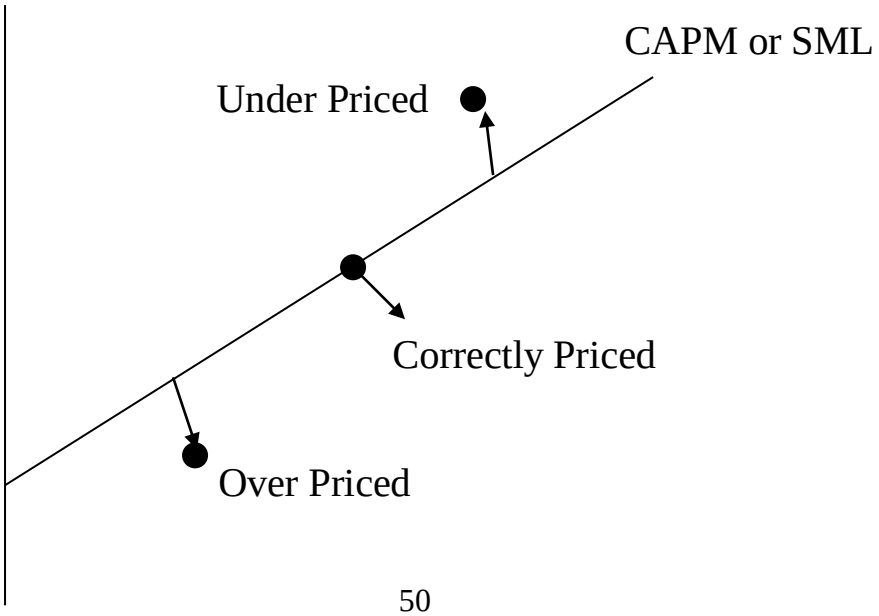
The primary concern of portfolio management is to identify the under priced and overpriced securities. Over-priced and under-priced securities are identified either by a comparison of their value with market price or a comparison of the required rate of return (return calculated by using CAPM education) and expected return.

An asset that has its expected return falling in the SML is correctly priced asset, those expected returns falling above the security market line are under priced and those expected returns falling below the SML are over-price assets.

S.N.	Condition	Pricing
1.	Required rate of return >Expected rate of return	Overpriced
2.	Required rate of return <Expected rate of return	Under Priced
3.	Required rate of return = Expected rate of return	Correctly Priced

Figure No. 2.6

Figure presenting the overpriced and underpriced securities.



2.1.11. Portfolio of Risk and Risk free Asset

Portfolios can be made with risk free and risky assets. Risk free and risky assets are categorized on the basis of chances of default of an organization. The chances of default of government securities are assumed to be zero. Therefore, the government securities are risk free securities and the remaining (corporate) securities are risky securities a portfolio of risk asset is also known as market portfolio.

Market Portfolio

The market portfolio contains all risky assets in proportion to their market value, it is by definition, a perfectly diversified portfolio. The volatility of the market portfolio is due to macro economic factors that affect all risky assets and not to company or industry-specific factors. Volatility in returns created by unsystematic risk, this can be diversified away by adding risky assets to a portfolio. (Cheney, John & Mosses, Edward, A 1992, page 690).

If the investor purchases a risk free asset at the beginning of a holding period then he or she known exactly what the value of the assets will be at the end of the holding period. As there is no uncertainly about the terminal value of the risk free assets, the standard deviation of the risk-free assets is by definition zero.

In the case of market portfolio, there is no unsystematic or diversifiable risk, and total risk is equal to systematic risk. Since, it is possible to eliminate all unsystematic risk through perfect diversification, the capital markets do not reward investors for facing unsystematic risk.

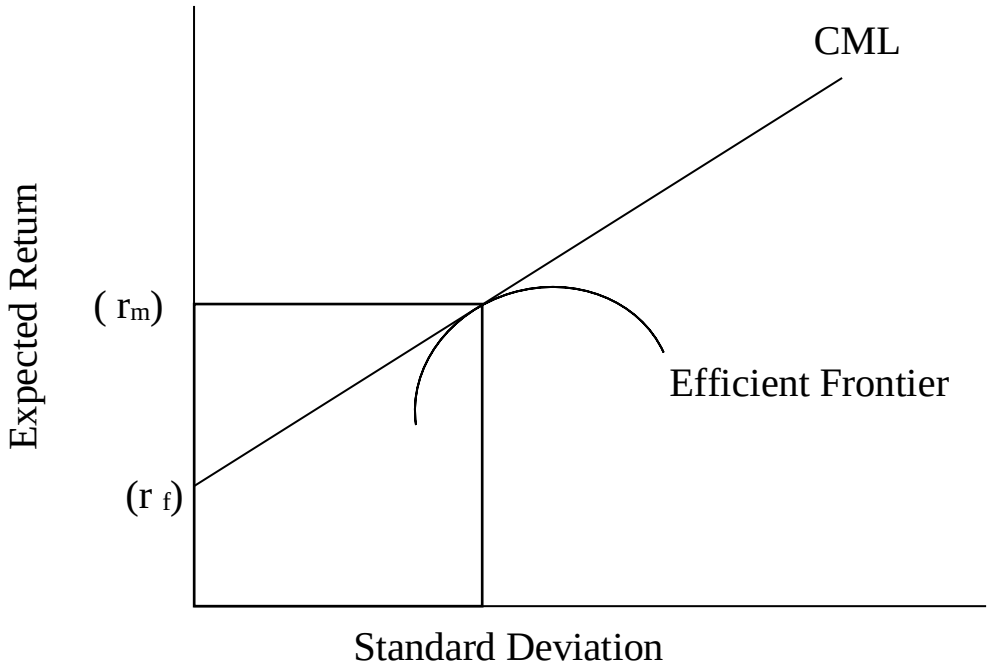
2.1.12. Capital Market Line (CML)

Capital market line (CML) represents the equilibrium relationship between the expected return and the standard deviation of the efficient portfolios. The line of efficient portfolio is called efficient frontier.

When we introduce a risk-free asset into Markowitz portfolio analysis the efficient frontier is changed from a curve to a straight line. This new efficient frontier is called a capital market line (CML) and shown in the figure.

Figure No. 2.7

Figure Presenting the CML



The slop of CML is the market equilibrium price of risk. If somebody wants to invest in the risky portfolio in the market how much extra return over a risk free rate of return does he/she requires for one unit of market risk that is explained by the slop of CML. This can be calculated by using the following formula.

$$Slope\ of\ \ CML = \frac{E(r_m) - r_f}{\sigma_m}$$

The CML shows the trade off between return and risk for efficient portfolios, the unit of risk must be the portfolio standard deviation. Therefore the equation for the CML is

$$E(r_p) = r_f + \frac{E(r_m) - r_f}{\sigma_m} x\sigma_p$$

Where,

$E(r_p)$ = The required rate of return on any efficient portfolio on the CML

r_f = The risk free rate of return

$E(r_m)$ = The expected rate of return on market portfolio.

σ_m = The standard deviation of returns on the market portfolio

σ_p = The standard deviation of returns on the efficient portfolio

This equation states that the required return on an efficient portfolio in equilibrium is equal to the risk-free rate plus the market price of risk multiplied by the amount of risk on the portfolio begin considered.

2.1.13. Arbitrage Pricing Theory and Arbitrage Portfolio

Arbitrage means the earning of risk less profit by taking advantage of differential pricing for the same physical asset or security. It is a process of making profit without risk and with no net exposure o capital. In practice, it requires an Arbitrage simultaneously to buy and sell the same asset or assets that have the same risk class.

Arbitrage pricing theory was developed by Stephen Ross, it is based on one price. The basis assumption of Arbitrage pricing theory is that securities returns are related to an unknown number of unknown factors. Therefore, securities returns are guided by the number of factors and each asset having identical risk must provide the same return and should also have the same price. APT suggests there is not only one risk

factor but multiple factors tat affect the security's return. So, while pricing the security or determining the required rate of return all those factors should be considered. APT is also known as the factor model of the asset's pricing. The multiple factor APT model is as follows:

$$E(r_i) = \lambda_o + \lambda_1 b_{i1} + ... + \lambda_n b_{in}$$

Where,

$E(r_j)$ = required rate of return on asset 1 or dependent variable

λ_o = risk free rate of return

$\lambda_1 ..... \lambda_n$ = constant variables

b = systematic risk factor or independent variable

Arbitrage Portfolio

Portfolio is a combination of assets. It is used to maximize the return while minimizing the risk. Arbitrage portfolio is attractive to any investor who desire a higher return an is not concerned with not factor risk. Some conditions of Arbitrage portfolio:

Condition 1: Assets must be over-priced and under priced

Two assets having equal risk should not have different prices and should not provide unequal risk.

Condition 2: Arbitrage Portfolio requires no addition fund

It is a portfolio that does not require any addition funds from the investor. Total investment of the investor must be equal to zero.

Condition 3: The Arbitrage portfolio has no sensitively to any factor i.e. the weighted average beta of the portfolio must be equal to zero.

Arbitrage is a process of earning a positive return without additional exposure of the capital and without risk. The weighted average factor sensitivity (beta) should also be equal to zero.

Condition 4: The arbitrage portfolio should have a positive expected return.

Investment do not require additional fund and they do not bear any risk, however they should have a positive expected return from the portfolio.

2.2 Review of Relevant Study

2.2.1 Review from Books.

Harry M. Markowitz developed the theory of portfolio. This is also called the modern theory of portfolio management. It is based on the correlation Harry M. Markowitz derived the expected rate of return for a portfolio of assets and an expected risk measure. To find the efficient set of portfolios and select the most efficient one, the portfolio manager will need to know the expected returns and the risk of there returns for the individual securities. Basic assumption of Markowitz Model.

1. Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period.
2. Investors Maximize one- period expected utility, ant their utility curves demonstrate diminishing marginal utility of wealth.
3. Investors estimate the risk of the portfolio on the basis of the variability of expected returns.
4. Investors utility curves are only a function of expected return and risk.
5. For a given risk level, investors prefer higher returns to lower return. Similarly for a given level of expected returns investors prefer less risk to move risk. (Markowitz, Harry M. (1952) page 77 to 93)

William Sharpe developed a ratio called Sharpe ratio to evaluate the performance of portfolios. It measures the amount of return from an investment portfolio for given level of risk. It does this by dividing a

Measure of portfolio volatility into the excess returns generated by the portfolio over a risk free rate of return for the some period. Treynor also suggest same as Sharpe's model but instead of total risk he used systematic risk to calculated the performance index. (Sharpe, William F. (September, 1964) Page 425 to 442.

Jensen's suggests that average return on the portfolio over and above that predicted by the CAPM, given the portfolio beta and the average market return. Jack Treyner's measure is also not different from Sharpe's measure but Treyner's uses systematic risk instead of total risk to measure the performance index. Therefore, Treyner suggests the uses of beta coefficient of portfolio, a measure of systematic risk index. Instead of standard deviation of portfolio.

2.2.2. Review from Related Dissertations

There are very few topic regarding the analysis of portfolio management in Nepal. Before this thesis, some student have conducted several thesis works. Some of them as are supposed to be relevant for this study, are presented below.

Mr. N.M. Pradhan, in his thesis paper, "A study on investment policy of Nepal Bank Ltd. "has emphasized that there is a greater relationship between deposits and loan and advances. His recommendation was to grant the loans and advances without its lengthy process.

Mr. Prakash Ghimire, in his thesis paper, "Portfolio management of Nepalese listed companies" shows that the portfolio is the act of investing the funds in different securities so that the loss occurred in one securities can be covered by other, and the portfolio comprises of two or more than two securities.

Mr. Mukunda Prasad Lamichhane, in his thesis, "Investment policy of the joint venture banks in Nepal" had analyzed between investment policy and different variables like deposits, commission and discount, net profit,

interest on loan and advances. He concluded that most of the joint venture banks have focused their banking services specially to big clients such as to purchase shares and debentures of other financial and non financial companies.

Mr Durga Hari Bhattarai in his thesis paper entitled." Risk and return analysis of common stock investment" shows that there exists a positive relationship between risk and return.

CHAPTER - 3
RESEARCH METHODOLOGY

3.1 Introduction

"To research is to search again, to take another, more careful look, to find out more. The word research is composed of two syllables; re and search. The dictionary defines the former as a prefix meaning again, a new or over again and the later as a verb meaning to examine closely and carefully, to taste and try or to probe. Together they form a noun describing a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts of principles." (Kothari CR, 1996)

Research means an intensive a powerful search for knowledge and understanding of social and physical phenomena. So, the researcher does the act of research work. Research methodology describes the methods and process applied in the entire aspects of the study. In order word research methodology is the process of arriving at the solution of the problem through planned and systematic dealing with the collection, analysis and interpretation of facts and figure.

The main purpose of this study is to analyze portfolio management. To achieve this objective, some methodology have been adopted which includes research design, population and sample, source of data, data collection technique, data analysis techniques and so on.

3.2 Research Design

A research design is a plan that shows how a researcher intends to fulfill the goals of a purposed study. In other words, research design is the logical and systematic planning and direction of a piece of research. The preparation of a research plan for a study aids in establishing direction to the study and in knowing exactly what has to be done and how and when it has to be done at every stage. It enables the researcher to consider beforehand the various decisions to be made what are the objectives of the study? What are the investigative questions? What are the sources of data? What is the universe of the study? What sampling method is appropriate? And so on.

A research plan prescribed the boundaries of research activities and enables the researcher to channel his energies in the right work. With clear research objectives in view, the researcher can proceed systematically toward their achievement. Finally, A research design is the program that guides the investigator in the process of collecting, analyzing and interpreting observations.

3.3 Data Collection Procedure

3.3.1 Population and Sample

A population is any group of individual that have one or more characteristics in common that are of interest to the researcher. The term population of data denotes for the data of each organization which is within the boundary of specific organization. The large group about which the generalization is made is called the population under study.

The representative proportion of the population is called sample. In other words, A sample is a small specimen or a separated part of the whole population, representing its general questions, as far as possible. It is a smallest set of values selected from the population, reflecting its characteristics. The procedure of selection of the sample from he

population is called the sampling method. The sampling technique is a procedure for the selection of a sample from the given population.

This study is concerned with the portfolio management of major two joint venture banks of Nepal. So, the population data for this study comprises all the joint venture banks, which are currently operating in Nepal. For this study two banks are taken as the sample. The selected sample banks for the analysis are as follows:

1) Himalayan Bank Limited
2) Standard Chartered Bank Nepal Limited

3.3.2 Sources and Types of Data

The information facts of opinions collected by a researcher either from internal sources or from external sources, in order to verify a hypothesis is called data. Data can be obtained either from the primary sources or secondary sources. Primary data re collected from primary sources in the field. The data collected from some one else and used already and made available as published or unpublished statistics are known as secondary data. Primary sources are always the most authoritative because the information has not been filtered or interpreted by a second party. So, mainly this study will be based on secondary data. Sources of secondary data will be published data like annual reports of bank, financial statement, review and reports, previous thesis works, related books and so on. Data and information collection will be made by following way:

- Library research
- Internet
- Study articles, journals & related books
- Collection and study of review and reports of HBL and SCBNL

3.4 Tools for Analysis

In order to ascertain investment analysis of any firm, various analytical tools can be used. According to the nature of the statement of data, suitable or appropriate tools make the analysis more effective and significant for achieving objective. Data can be analyzed by using various statistical and financial tools. In this study, the collected data are analyzed by using both financial tools. In this study, the collected data are analyzed by using both financial and statistical tools.

3.4.1 Statistical Tools

Various statistical tools can be used to analyze the data available to the researcher. These tools are used in research in order to draw the reliable conclusion through the analysis of financial data.

3.4.1.1 Arithmetic Mean

Arithmetic mean is the most familiar statistical measure to any investor or individual. Therefore, the world means refer to the arithmetic mean unless otherwise specified. This mean is calculated by dividing the total return of multiple periods by the number of observations or returns. Let, X_1, X_2, X_3, ... X_n denotes 'n' variate values of the random variable X, then the arithmetic mean denotes by $\overline{X}$ is defined by the following formula.

$$\overline{X} = \frac{X_1 + X_2 + X_3 + \ldots\ldots\ldots\ldots\ldots + X_N}{n} = \frac{\sum x}{n}$$

Where,

= Arithmetic mean

= Sum of observations

n = Number observations

The arithmetic mean return is appropriate as measure of the central tendency of a distribution consisting of returns calculated for a particular time, such a year. It is a single value of selected series which represents them in average.

3.4.1.2 Standard Deviation

Standard deviation is a statistical measure of the variability of distribution around its mean. The standard deviation is the measurement of risk of the deviation of returns from their mean value. It is the absolute measure of variability, it is generally not suitable for comparing investment with different expected returns. Standard deviation, usually denoted by the letter σ (sigma) of the Greek alphabet, is defined as the positive square root of the arithmetic mean of the squares of the deviations of the given observations from their arithmetic mean. Thus, if X_1, X_2, X_3, ... X_n is a set on 'n' observations then its standard deviation is given by:

$$\text{S tan dard deviation } (\sigma) = \sqrt{\frac{\sum (X - \overline{X})^2}{n-1}}$$

$\overline{X}$ = Arithmetic mean

X = Observation set

N = No. of observation

Standard deviation is an absolute measure of dispersion and does not consider the dispersion of outcomes in relationship to an expected value.

3.4.1.3 Coefficient of variation (C.V.)

Coefficient of variation is another method of measuring the risk. It is the standardized measure of the risk per unit of return, calculated as the standard deviation divided by the expected return. The coefficient of variation shows the risk per unit of return and it provides a more meaningful basis for comparison when the expected return on the two alternatives is the same. "It is the relative measure of dispersion, comparable across distribution which is defined as the ratio of the standard deviation to the mean expressed in percent. "(Levin, Richard I and David S. Rubin (1994), Page 114) It is denoted by C.V. it is calculated by following equation:

Coefficient of Variation (C.V.) = $\frac{S.D.}{Mean} x100 = \frac{\sigma}{X} x100$

Where, $\sigma = S\tan dard\ \ Deviation$

$\overline{X}$ = Mean

"C.V. is also useful in comparing the amount of variation in data groups with different mean. A distribution with smaller coefficient of variance is said to be more homogeneous or uniform than the other." (Gupta, S.C., 2000, Page 415)

3.4.1.4 Correlation

Correlation is the relationship between two or more paired variables or two or more sets of data. The degree of relationship is measured and represented by the coefficient of correlation. Correlation is a measure of statistical co variation. Two variables are said to be correlated if the change in one variable result in a corresponding change in other variable. Correlation may be identified by either the letter r, the Greek letter rho (p). The correlation coefficient between two variables X any Y usually denoted (X, Y) r_{xy} is a numerical measure of linear relationship between them and is define by

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{N\sum X^2 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}} = \frac{COV_{(X,Y)}}{\sigma_X \sigma_Y}$$

Where, r_{xy} = Correlation coefficient between variable X and Y

N = No. of observation

The correlation coefficient lies always between -1 and +1, When r =+1, there is perfect positive correlation, similarly, if r= -1, There is perfect negative correlation between the variables. And, it has a zero value i.e. r = 0, there is no correlation between the variables.

Probable Error

Probable error correlation is an old measure testing the reliably of an observed value of correlation coefficient. It is calculated to find the extend

to which correlation coefficient is dependable as it depends upon the condition of random sampling. Probable error of correlation coefficient denoted by P.E. (r) is obtained as,

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

Where,

r = calculated correlation coefficient

n = Number of observation

3.4.1.5 Least Square Linear Trend

The general tendency of the time series data to increase or decrease or stagnate during a long period of time is called trend. This method is the most popular and widely used in practice. It provides basis for obtaining the line of best fit in the series. As per this method, the trend line between dependent variable y and the independent variable x be represented by,

$$Y = a + bx$$

Where,

Y = Dependent variable

x = Independent variable i.e. time

a = y - intercept

b = Slope of the trend line

3.4.2 Financial Tools

As this study is related to investment portfolio analysis, financial tools are more applicable. Financial tools are those which are used for the analysis and interpretation of financial data. For the sake of analysis, following various financial tools have been used in order to meet the purpose of the study.

- Risk and return on individual investment assets and investment portfolio
- Financial ratios

3.4.2.1 Risk and Return on Individual Investment Assets and Investment Portfolio

i) Return on Government Securities

The return on government securities is calculated by dividing interest earned from government securities by total investment on government securities. This can be calculated as:

$$\text{Return on Government Securities} = \frac{\text{Interest Earned from Governement Securities}}{\text{Total Investment on Governement Securities}}$$

ii) Return on Loan and Advances

The return on Loan and advances is calculated by dividing interest earned from loan and advances by total amount of loan and advances. This can be calculated as:

$$\text{Return on Loan and Advances} = \frac{\text{Interest Earned from Loan and Advances}}{\text{Total amount of Loan and Advances}}$$

iii) Average Rate of Return

When historical returns are used, following formula is used to calculate an average rate of return.

$$\text{AverageRate of Return} = (r) = \frac{\sum_{t=1}^{n} r_t}{n}$$

$$or, r = \frac{r_1 + r_2 + r_3 + ...r_n}{n}$$

Where,

r_1, r_2, r_3 = Rate of Return in different period

n = No. of period

iv) Risk on Individual Assets

Risk on individual assets can be measure by the help of standard deviation. Standard deviation is defined as the positive square root of the mean of the square of the deviation taken from arithmetic mean.

Risk on individual assets or standard deviation for assets can be calculated using historical returns with this equation:

$$S\tan dard\ \ devuation(\sigma) = \frac{\sum (r - \bar{r})^2}{n}$$

Where,

r = Rate of return on individual assets

$\bar{r}$ = Average rate of return on individual assets

n = No. of years or observations

v) Return on Portfolio

The return on portfolio is simply the weighted average expected returns of assets included in the portfolio. Where the weights are the proportion of investment initially made in each asset included in the portfolio.

Return on portfolio (r_p) = $\sum_{i=1}^{n} W_1 E(r_1)$

Or, $r_p = W_1 E(r_1) + W_2 E(r_2) + ...+ W_n E(r_n)$

Where,

$E(r_p)$ = Expected return of portfolio

W_1 = Weight of ith asset of stock

$E(r_1)$ = expected return of ith asset

n = No. of assets included in the portfolio

vi) Risk on Portfolio

Expected risk on a portfolio is a function is a function of the proportions invested in the components, the risky- ness of the components

and correlation of returns on the component securities. It is measured by standard deviation and calculated by using following formula.

For two assets

$$\sigma_p = \sqrt{W^2 A\sigma^2 A + W^2 B\sigma^2 B + 2r_{AB}\sigma_A\sigma_B W_A W_B}$$

Where,

W_A, W_B = Weights of securities A and B

$\sigma_A\sigma_B$ = Standard deviation of A and B

r_{AB} = Correlation between securities A and B

3.4.2.2 Financial ratios

An arithmetic relationship between two figures is ratio. In other words, the relationship between two according figures expressed in mathematical term is known as financial ratio. "Ratio analysis is used to compare a firms financial performance and status to that of other firms or to itself on time". Gitman, Lawarance, J. (1988), Page 275) Ratio is always computed by dividing one item of relationship with the other.

Ratio analysis is an important technique of financial analysis. In this study, only such rations which are related to investment portfolio of joint venture banks are taken here. Hence, in this study, following ratios are calculated and analyzed.

i) Total Investment to Total Deposit Ratio

This ratio can be calculated by dividing total investment by total deposit. It can be calculated as.

$$Total\ \ Investment\ to Total\ \ Deposit\ \ Ratio = \frac{Total\ \ Investment}{Total\ \ Deposits}$$

ii) Government Securities to Total Deposit Ratio

This ratio can be calculated by dividing investment on government securities by total deposit. This ratio can be stated as:

$$Government\ Securities\ to Total\ Deposit\ Ratio = \frac{Investment\ \text{on Government Securities}}{Total\ Deposits}$$

iii) Share and Debenture to Total Deposit Ratio

This ratio can be calculated by dividing investment on share an debenture by total deposit. This ratio can be stated as:

$$Net\ \text{Profit}\ Total\ Deposit\ Ratio = \frac{Investment\ \text{on Share and Debenture}}{Total\ Deposits}$$

iv) Net profit to total deposit ratio

This ratio can be calculated by dividing net profit by total deposits. This ratio can be stated as:

$$Net\ \text{Profit}\ Total\ Deposit\ Ratio = \frac{Net\ \text{Profit}}{Total\ Deposits}$$

v) Return on Total Assets Ratio

This ratio can be calculated by dividing net profit after tax by total assets. This ratio can be stated as:

$$\text{Return}\ on\ Total\ Assets\ Ratio = \frac{Net\ \text{Profit}\ after\ Tax}{Total\ Assets}$$

vi) Cash and Bank Balance to Total Deposit Ratio

This ratio can be calculated by dividing cash and bank balance by total deposit. This ratio can be stated as:

$$Cash\ and\ bank\ balance\ Total\ Deposit\ Ratio = \frac{Cash\ \text{and Bank Balance}}{Total\ Deposits}$$

vii) Investment on government securities to total outside investment ratio

This ratio shows that the bank's investment on government securities in comparison to the total outside investment. It can be calculated by dividing investment on government securities by total outside investment i.e.

Investment on government securities to total outside investment =

$$\frac{Investment\ on\ Government\ Secutities}{Total\ Outside\ Investment}$$

viii) Loan and Advances to total outside Investment

This ratio shows that the banks investment on loan and advances out of total outside investment. It can be calculated by dividing loan and advances by total outside investment i.e.

$$Loan\ and\ advances\ to\ Total\ outside\ investment\ ratio = \frac{Loan\ and\ Advances}{Total\ Outside\ Investment}$$

ix) Investment on share and debenture to Total outside Investment

This ratio shows that the banks investment on shares and debentures of other companies. It can stated as:

$$Investment\ on\ Share\ and\ Deventure\ to\ TOI = \frac{Investment\ on\ Share\ and\ Debenture}{Total\ Outside\ Investment}$$

Chapter –IV
PRESETATION AND ANALYSIS OF DATA

In this chapter, the data have been analyzed and interpreted using financial tools following the research methodology deals in the third chapter. In the source of analysis, data gathered from the various sources have been inserted in the tabular form according to their homogenous nature. The various tables prepared for the analysis purpose have been shows in annexure. The result of the analysis have been compared with conventional standard with respect to ratio analysis, directives of NRB and other factors while using the tools, furthermore, many suitable graphs, lines and diagrams have also been used to clarity the actual position of the banks. In this section, the investment portfolio of joint venture banks is analyzed with help of following tools.

- Risk and return on individual investment assets and investment portfolio
- Analysis of ratio
- Least square linear trend
- Correlation analysis
- Multiple regression analysis

4.1 Risk and Return on Individual Investment Assets and Investment Portfolio

Risk is an important element since investments with greater risk require a higher return than investment with lower risk. The relationship between risk and return is described by individual perception about risk and their demand for consumption. In this section, standard, deviation and co-efficient of variation are taken as the measuring tools of risk and mean return is taken as to measure expected return.

4.1.1 Risk and Return on Government Securities

Government securities are the fixed income securities issued by the government. These securities are among the safest of all investment, as the government is unlikely to default on interest on principle repayments, development bond, national saving bond etc. can be calculated as follow.

The return on government securities is computed by dividing interest income on government securities by total investment on government securities i.e

$$\textit{Return on Government Securities}\,(r_g) = \frac{\text{Interest Income on Government Securities}}{\text{Total Investment on Government Securities}}$$

$$\text{Average rate of return on Government Securities } (\bar{r}_g) = \frac{\sum_{t=1}^{n} r_g}{n}$$

Now, Risk on Government Securities is denoted by σg and can be calculated by using following formula.

$$\sigma_g = \frac{\sqrt{\sum_{t=1}^{n} (r_g - \bar{r}_g)^2}}{n}$$

$$\textit{Coefficient of variation}\ (C_{vg}) = \frac{\sigma_g}{v_g}$$

Where,

N= no of historical years (period)

Calculated of risk and return on government securities

Table 4.1

Risk and Return on Government Securities of HBL

(Rs in million)

Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2005/06	172.242	5133.211	3.35
2006/07	191.559	6454.873	2.97
2007/08	201.310	7471.668	2.69
2008/09	354.949	4212.300	8.43
2009/10	216.036	4465.372	4.84
Total	1136.096	27737.424	22.28
Mean			4.456
S.D.			2.121
C.V			47.59%

Sources: Annual Report of HBL

Figure 4.1

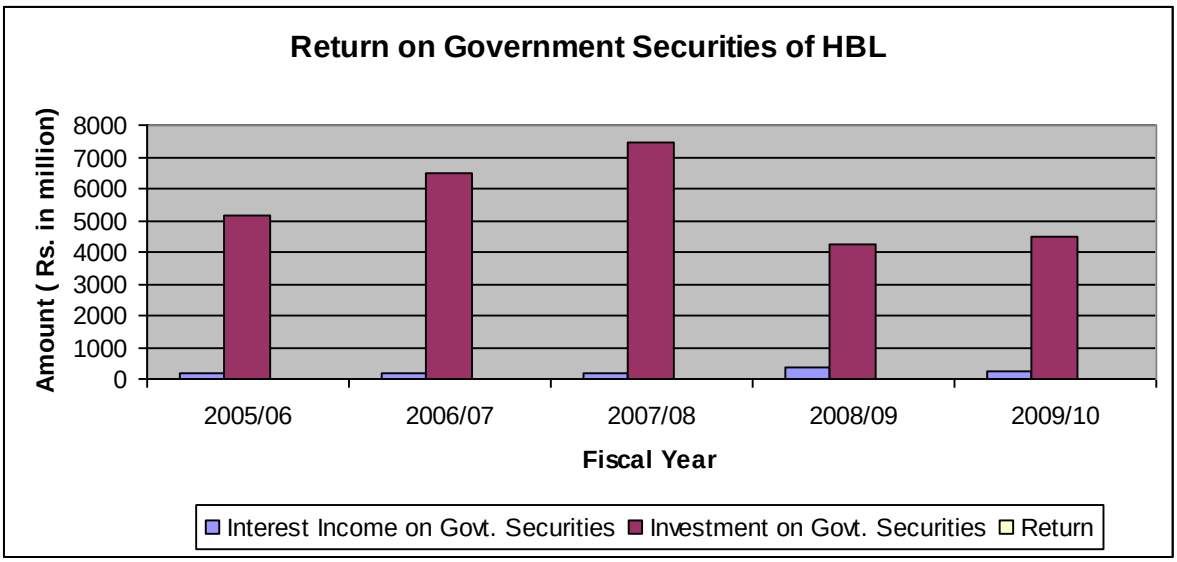


Table 4.2

Risk and Return on Government Securities of SCBNL

(Rs in million)

Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2005/06	355.291	8644.855	4.11
2006/07	326.549	7107.937	4.59
2007/08	319.606	8137.615	3.93
2008/09	406.325	9998.753	4.06
2009/10	436.305	8531.519	5.11
Total	1844.076	42420.679	21.8
Mean			4.36
S.D.			0.4365
C.V			10.01%

Sources: Annual Report of SCBNL

Figure 4.2

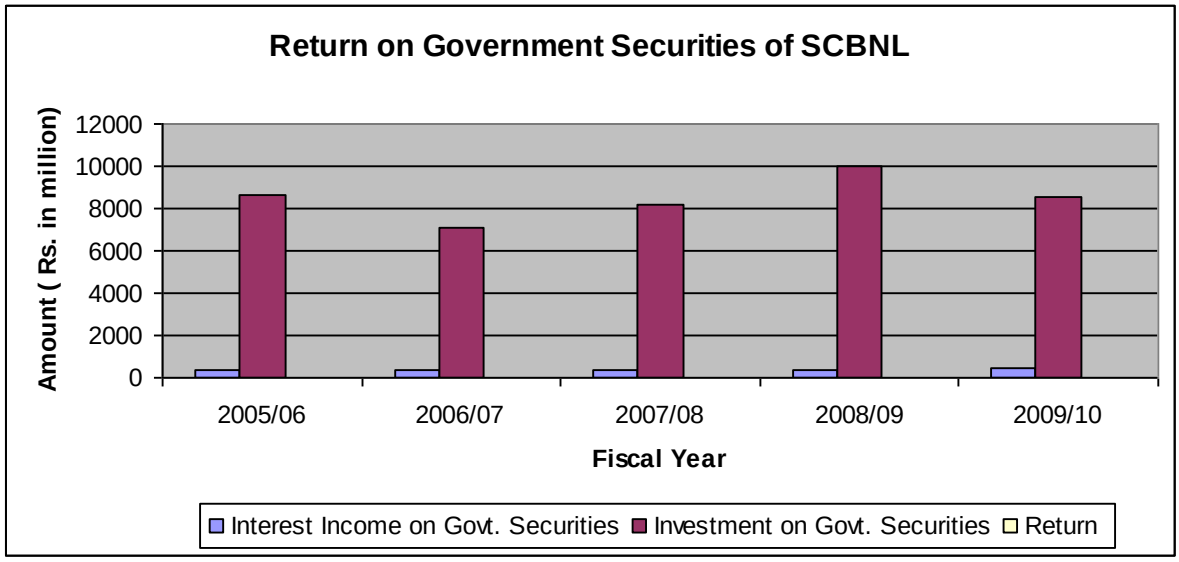


Table 4.3

Risk and Return on Government Securities of Everest Bank

(Rs in million)

Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2005/06	97.272	3548.617	2.74
2006/07	128.566	4704.632	2.73
2007/08	180.219	4821.605	3.74
2008/09	289.765	5146.046	5.63
2009/10	238.993	4354.353	5.49
Total	934.815	22575.253	20.33
Mean			4.066
S.D.			1.2746
C.V			31.35%

Sources: Annual Report of Everest Bank

Figure 4.3

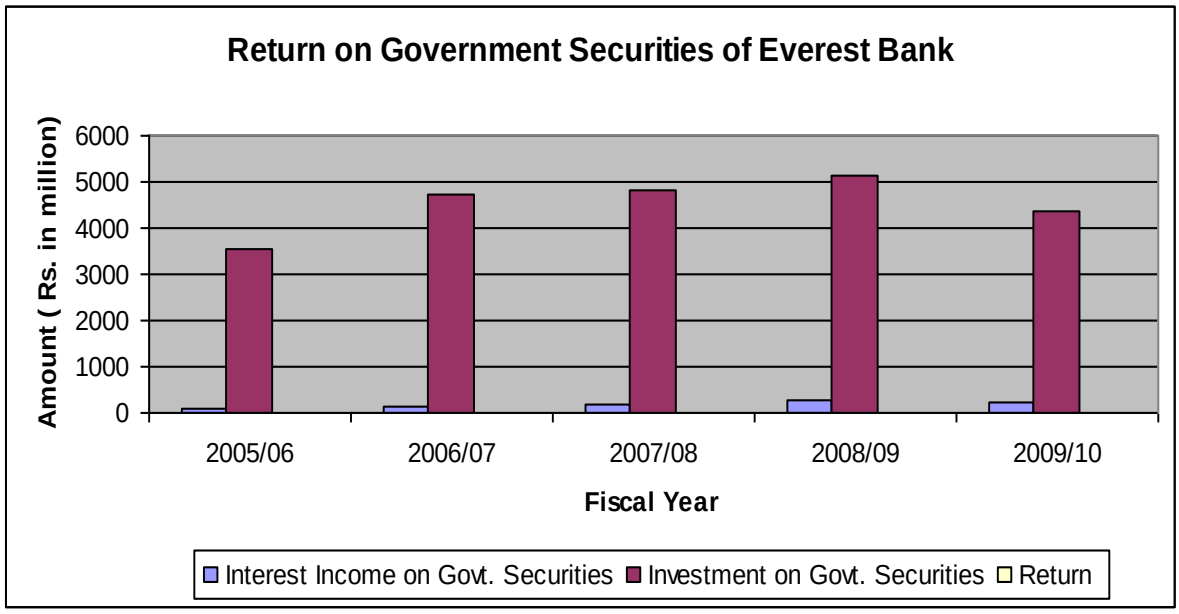


Table 4.4

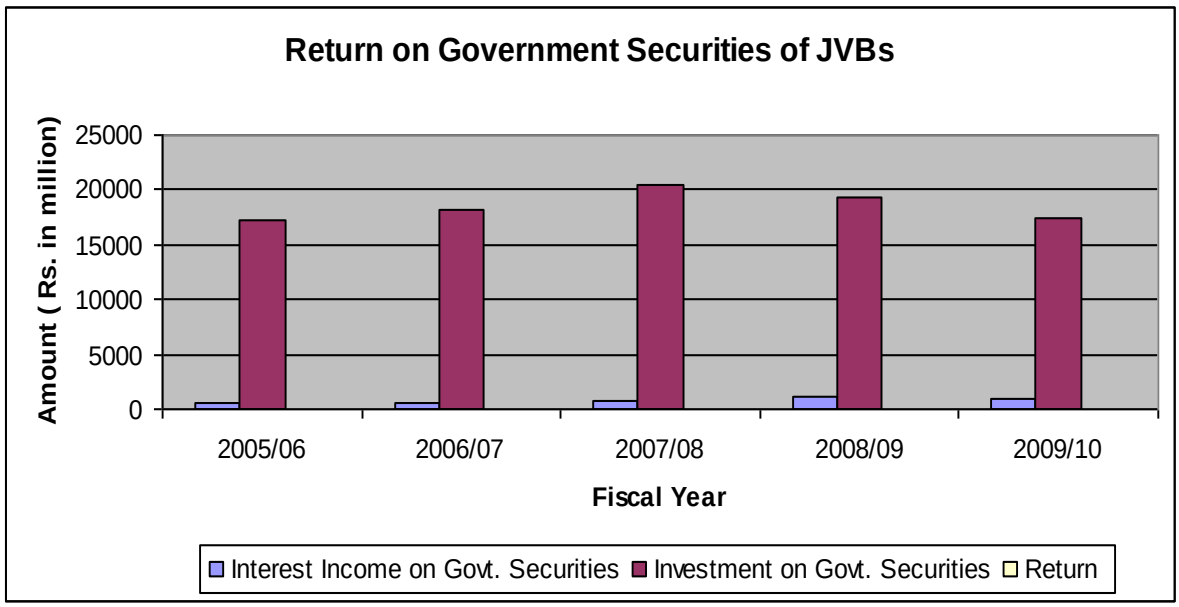
Risk and Return on Government Securities of JVBs

(Rs in million)

Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2005/06	624.805	17326.683	3.61
2006/07	646.674	18267.442	3.54
2007/08	701.135	20430.888	3.43
2008/09	1051.039	19357.099	5.43
2009/10	891.334	17351.244	5.14
Total	3914.987	92733.356	21.15
Mean			4.23
S.D.			0.8681
C.V			20.52%

Sources: Table 4.1, 4.2 and 4.3

Figure 4.4



The Table 4.1, 4.2, 4.3 and 4.4 shows the return on government securities of HBL, SCBNL, Everest Bank and JVBs respectively. Tables shows that return on investment on government securities has no any fixed trend. Similarly, there is no

fixed trend to investment on government securities and interest income from government securities during the study period year from 2005/06 to 2009/10. While examining Average Return it is 4.456% of HBL, 4.36% of SCBNL, 4.06% of Everest Bank and 4.23% of JVBs similarly the SD is 2.121% of HBL, 0.4365% of SCBNL, 1.2746 of Everest Bank and 0.8681% of JVBs. Like which the CV.is 0.4759 of HBL, 0.1001 of SCBNL, 0.3135 of Everest Bank and 0.2052 of JVBs show that risky less of return on government securities

4.1.3 Risk and Return on Loan and Advances

The major portion of short-term investment of commercial banks is the loan and advances provided to various sector of the market. It is the main sources of income for commercial banks. Joint Venture Banks provide loans and advances from the money.

The risk and return on investment in the form of loan and advances can be calculated as follows.

Return on Loan & Advance $(r_l) = \frac{\textit{Interest income on loan and advances}}{\textit{Investment on loan and advances}}$

Average rate of return on loan and advances $(\bar{r}_l) = \frac{\sum_{t=1}^{n} r_l}{n}$

Now, Risk on Loan and advances are denoted by

$$\sigma_l = \frac{\sqrt{\sum_{t=1}^{n} (r_l - \bar{r}_l)^2}}{n}$$

Coefficient of variation $(CV_l) = \frac{\sigma_L}{v_L}$

Where, N= No of historical years (period)

Table 4.5

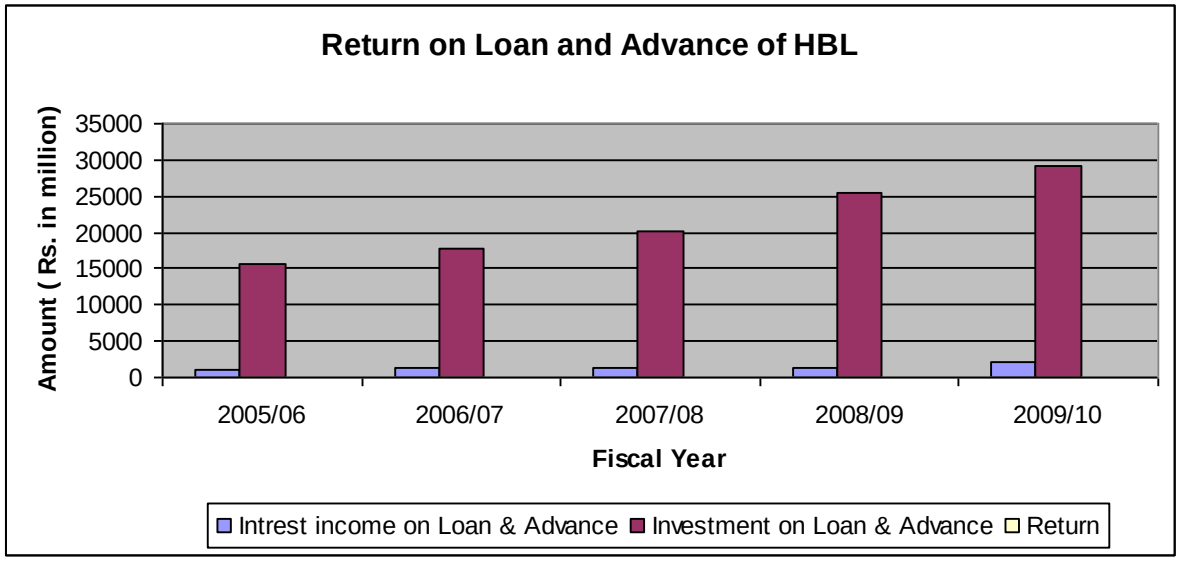
Calculation of Risk and Return on loan and Advances of HBL

Fiscal Year	Interest income on Loan & Advance	Investment of loan & Advances	Return

2005/06	**1140.687**	**15761.977**	**7.24**
2006/07	**1242.850**	**17793.724**	**6.98**
2007/08	**1444.245**	**20179.613**	**7.16**
2008/09	**1449.887**	**25519.519**	**5.68**
2009/10	**2003.146**	**29123.755**	**6.88**
Total	**7280.815**	**108378.588**	**33.94**
Mean			**6.778**
S.D			**0.5685**
C.V			**8.3874**

Sources: ***Annual Report of HBL***

Figure 4.5



From the above listed Table 4.5 shows the risk and return on loan and advances of Himalayan Bank Limited. The return on loan and advances of HBL is no any fixed trend. Investment on loan and an advance and the income received from the loan and advance are in increasing trend. The Average Return is 6.778%, the SD is 0.5685% and the CV is 8.3874%.

Table 4.6

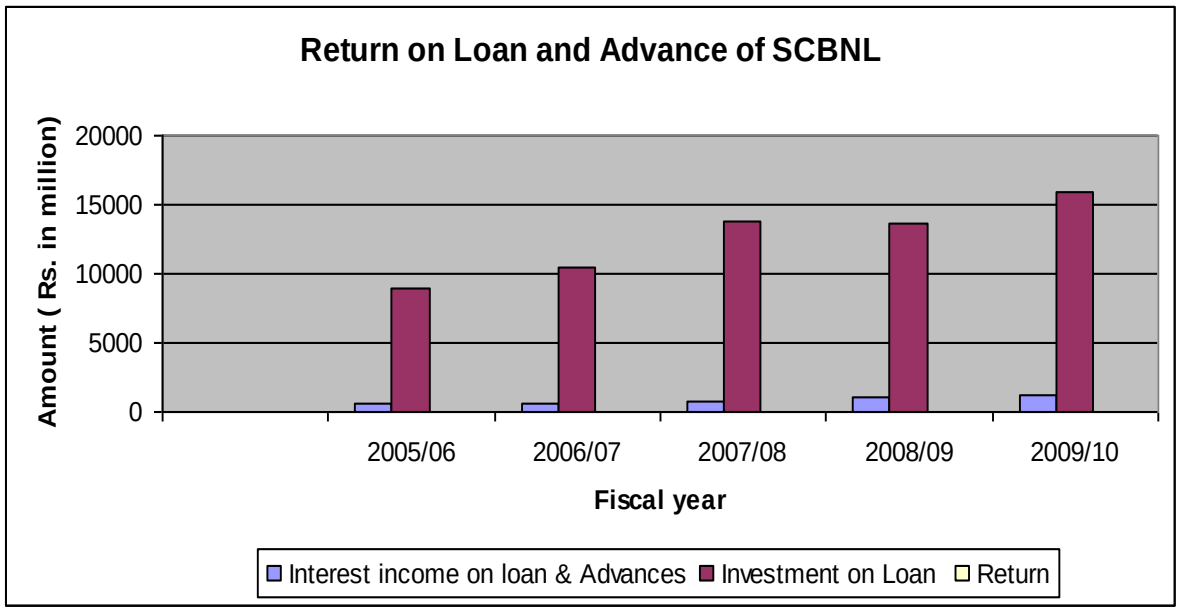
Calculation of risk and return on Loan and Advances of SCBNL

Fiscal year	**Interest income on loan & Advances**	**Investment on Loan & Advances**	**Return**

2005/06	**596.622**	**8935.418**	**6.68**
2006/07	**665.157**	**10502.637**	**6.33**
2007/08	**813.195**	**13718.597**	**5.93**
2008/09	**1027.707**	**13679.757**	**7.51**
2009/10	**1265.219**	**15956.955**	**7.93**
Total	**4367.9**	**62793.364**	**34.38**
Mean			**6.876**
S.D.			**0.7408**
C.V.			**10.77%**

Source:- Annual Report of SCBNL

Figure 4.6



From the above Table 4.6 shows risk and return on loan and advances of SCBNL are in decreasing trend in FY 2005/06 to 2007/08 then increasing trend in FY 2008/09 to 2009/10. Investment on loan and advances of SCBNL is in increasing trend but income received from loan and advances is not fixed, so the Return is in decreasing trend. The Mean Return is 6.876, SD is 0.7408 and the CV is 10.77% shows the risky ness of return on Loan and Advances.

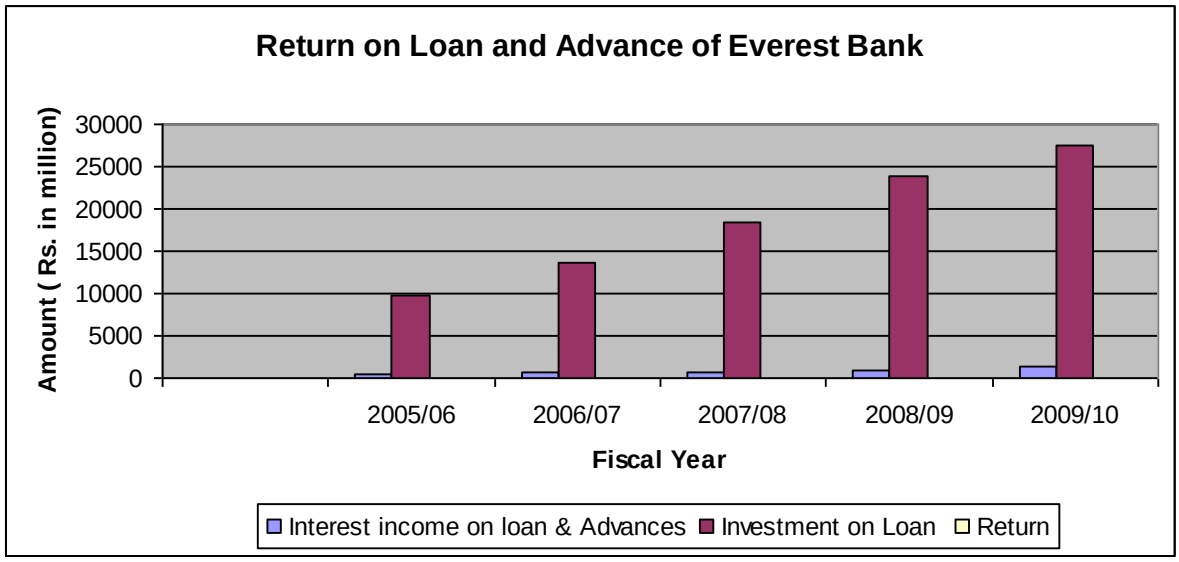
Table 4.7

Calculation of risk and return on Loan and Advances of Everest Bank

Fiscal year	Interest income on loan & Advances	Investment on Loan & Advances	Return
2005/06	**459.167**	**9801.308**	**4.68**
2006/07	**584.479**	**13664.082**	**4.28**
2007/08	**794.889**	**18339.086**	**4.33**
2008/09	**1019.081**	**23884.674**	**4.27**
2009/10	**1410.629**	**27556.356**	**5.12**
Total	**4268.245**	**93245.506**	**22.68**
Mean			**4.536**
S.D.			**0.3288**
C.V.			**7.25%**

Source:- Annual Report of Everest Bank

Figure 4.7



From the above listed Table 4.7 shows risk and return on loan and advances of Everest Bank are in decreasing trend in FY 2005/06 to 2008/09 then increasing trend in FY 2009/10. Investment on loan and advances of Everest Bank is in increasing trend but income received from loan and advances is not fixed so the return is in decreasing trend. The Mean Return is 4.536, SD is 0.3288 and the CV is 7.25% shows the risky ness of return on Loan and Advances.

Table 4.8

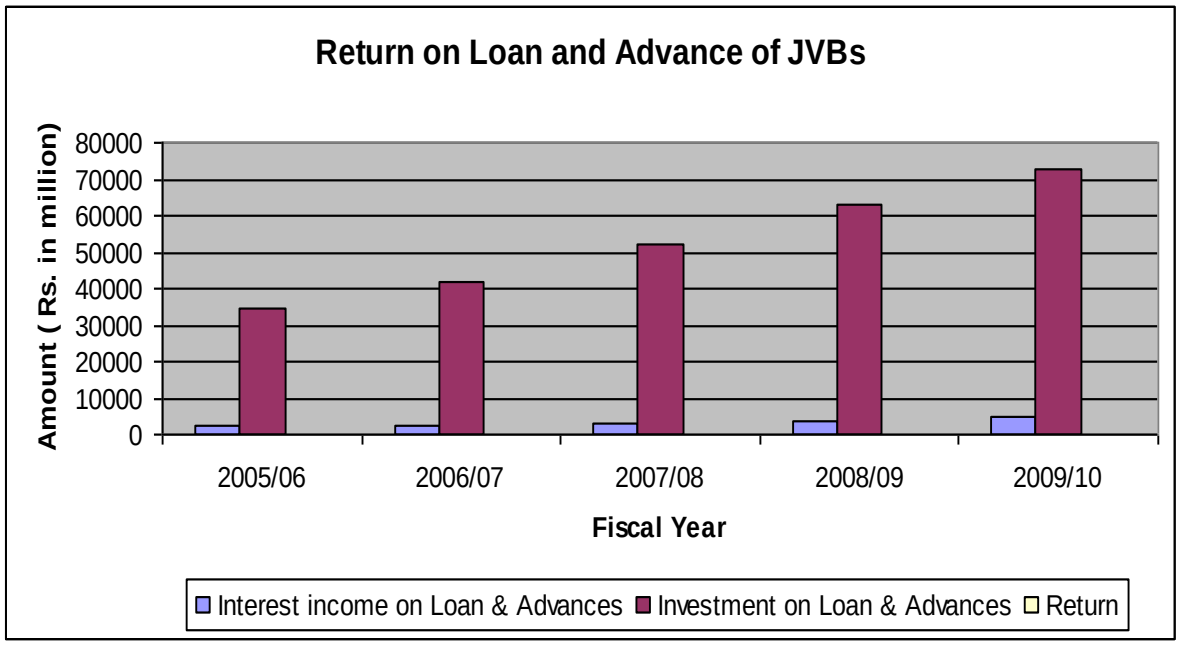
Calculation of Risk and Return on Loan and Advances of JVBS

(Rs.in Million)

Fiscal Year	Interest income on Loan & Advances	Investment on Loan & Advances	Return
2005/06	2196.476	34498.703	6.37
2006/07	2492.486	41960.443	5.94
2007/08	3052.329	52237.296	5.84
2008/09	3496.675	63083.95	5.54
2009/10	4678.994	72637.006	6.44
Total	15916.96	264417.458	30.13
Mean			6.026
S.D.			0.3370
C.V.			5.59 %

Source: - Table No.4.5, 4.6 and 4.7

Figure 4.8



Here,

$$\sum r_l = 30.13 \quad \bar{r} = \frac{\sum r}{n} = \frac{30.13}{5} = 6.026$$

$$\text{S.D. } (\sigma_L) = \sqrt{\frac{\sum (r_L - \bar{r}_l)^2}{n}} = \sqrt{\frac{0.5679}{5}} = 0.337$$

$$C.V_l = \frac{\sigma_L}{r_l} = \frac{0.337}{6.026} = 5.59\% or 0.0559$$

From the above listed Table 4.8 the risk return on government securities of Joint Venture Banks in Nepal. The Averages Return on Loan and Advances is 6.026%, SD is 0.3370% and CV is 5.59%.

4.1.4 Portfolio Return on investment

The expected return on a portfolio (rp) is simply the weighted average of the expected returns on the individual assets in the portfolio with the weights being the fraction of the total portfolio in each asset. In this study, investment portfolio is calculated by investment on government securities and loan and advances. The weight of the investment on various assets is calculated and average rate of return are presented as follows.

Table No. 4.9

Calculated of weight of the Investment on Various Assets.

S.N.	Assets	Investment Amt.Rs.In M	Proportion weight (x)	Average Rate of return ($\bar{r}$)
1	Government securities	92733.356	0.28	4.23%
2.	Loan & Advances	236861.102	0.72	6.026%

Here, for two assets

$$\textit{Portfolio Return } (\bar{r}_P) = w_g \bar{r}_g + w_l \bar{r}_l)$$

= 0.28 × 4.23% + 0.72 ×6.026 %

= 5.52 %

: The portfolio return on Investment on Joint venture banks ($\bar{r}$) =5.52%

Table 4.10

Calculation of portfolio Return of Joint Venture Banks

Investment on various Assets is in Rs.in million and return in %

Year	Investment on Govt. securities	Proportion of weight (wg)	Investment on loan & Advances	Proportion of weight (WL)	Return on government loan &advances (rL)	Return on government securities(rg)	Protfolio return
2005/06	17326.683	0.18	34498.703	0.14	6.37	3.61	1.54
2006/07	18267.442	0.20	41960.443	0.18	5.94	3.54	1.78
2007/08	20430.888	0.22	52237.296	0.22	5.84	3.43	2.04
2008/09	19357.099	0.21	63083.95	0.27	5.54	5.43	2.64
2009/10	17351.244	0.19	45080.71	0.19	6.44	5.14	2.20
Total	92733.356	1	236861.102	1	30.13	21.15	10.20

Table 4.11
Calculation of correlation coefficient between Investments Securities of JVBs

Fiscal year	**Return on Loan and Advances (rg)**	**Return on Loan & Advance (rL)**	**rgrL**	**rg^2**	**rL^2**
2005/06	3.61	6.37	23.00	13.03	40.58
2006/07	3.54	5.94	21.03	12.53	35.28
2007/08	3.43	5.84	20.03	11.76	34.11
2008/09	5.43	5.54	30.08	29.48	30.69
2009/10	5.14	6.44	33.10	26.42	41.47
Total	21.15	30.13	127.24	93.22	182.13

Now

Correlation between assets G and L will b

$$r_{gL} = \frac{n\sum r_g r_L - \sum r_g \sum r_L}{\sqrt{n\sum r_g{}^2 - (\sum r_g)^2} - \sqrt{n\sum r_L{}^2 - (\sum r^L)^2}}$$

$$= \frac{5\times 127.24 - 21.15\times 30.13}{\sqrt{5\times 93.22 - (21.15)^2}\sqrt{5\times 182.13 - (30.13)^2}}$$

$$= \frac{-1.0495}{2.65}$$

$$= -0.396$$

Table 4.12
Calculation of the portfolio standard Deviation between Investment Securities

	Weight(W)	Standard
Government Securities	0.28	0.8681
Land and Advances(L)	0.72	0.3370

Here, Portfolio Standard deviation

$$\sigma_{p(G+L)} = \sqrt{w^2 G + W^2 L\sigma^2 + 2r_{GL}\sigma_{GL}\sigma_G\sigma_L W_G W_L}$$

$$= \sqrt{(0.28)^2(0.0.8681)^2 + (0.72)^2(0.337)^2 + 2x(-0.396)\times 0.8681}\times 0.337\times 0.28\times 0.72$$

$$= \sqrt{0.07124}$$

$$= 0.2669\%$$

$$\text{Coefficient of Variation } (Cv_p) = \frac{\sigma_p}{r_p} = \frac{0.2669}{5.52} = 4.84\%$$

: . Portfolio return on investment of joint ventures banks (r) = 5.52%

: . Standard deviation of portfolio on investment of joint ventures banks

$(\sigma_p) = 0.2669\%$

: . Coefficient of variation (CV) = 0.0484 or 4.84%

From the above calculation, Portfolio Return on Investment of Joint Venture Banks is found as 5.52% and Expected Risk of the Portfolio is found as 0.2669. Which is considerably less than Expected Risk of Investment on Loan and Advances i.e. 0.2669< 0.337 and also less than the expected risk of investment on government securities I.e. 0.2669< 0.868. Return of investment on loan and advances and government securities is a low degree negatively correlated i.e. 5.52% is less than the average rate of return on investment on loan and advances

i.e. 5.52< 6.026 but it is more than the average rate of return on investment on government securities i.e. 5.52 > 4.23.

From the above calculation it is clear that the investment on loan and advances is more risky than the investment on government securities but averages rate of return on loan and advances is more than the average of return on government securities.

4.2 Analysis of Ratios

A ratio is calculated by dividing one item relationship with other. As a tool of financial analysis, ratio can be expressed in term of percentage .Ratio analysis is a very important tool of financial analysis. The purpose of this chapter is to evaluate and analyze the financial position and performances of the HBL, SCBNL and Everest Bank. In this section only those ratios are calculated which are mainly related to the investment mechanism of Joints Venture Bank.

4.2.1 Total Investment to Total Deposit ratio

Total investment to total deposit ratio is calculated by dividing total investment by total deposit. In general, high ratio indicates high success to mobilize the funds of banks as investment as vice-versa.

It is compound as:

$$\frac{\textit{Total Investment}}{\textit{Total Deposit}}$$

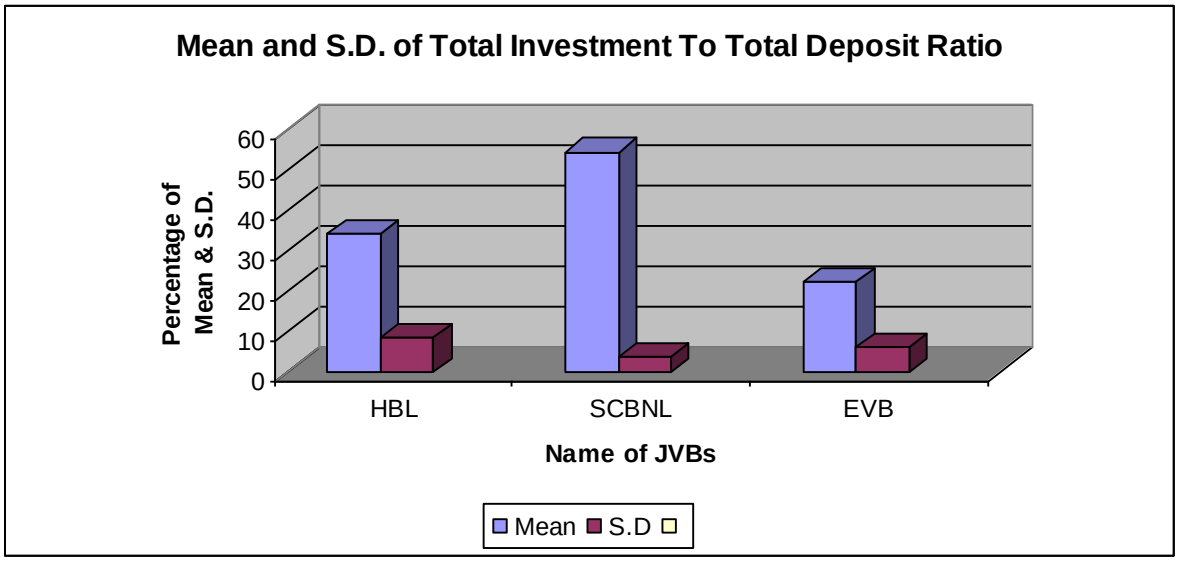
Table 4.13
Total investment to Total Deposit Ratio

Fiscal year	HBL	SCBNL	Everest Bank	JVBS
2005/06	41.10	55.71	30.43	44.10
2006/07	39.35	54.99	27.41	41.66

2007/08	41.89	46.76	21.10	37.75
2008/09	25.12	57.24	17.85	33.76
2009/10	22.45	56.41	13.56	30.35
Mean	33.98	54.22	22.07	37.52
S.D	8.41	3.80	6.1575	5.0207
C.V	24.75 %	7.01%	27.90%	13.38%

Sources: *Annexure' A*

Figure 4.13'



From the comparative Table 4.13 show that the ratio of total investment to total deposit of Joint Venture Banks is in decreasing trend through the Fiscal Year 2005/06 to 2009/10. It means that the ratio is not fixed. During the study period from 2005/06 to 2009/10 between three Joint Venture Bank SCBNL HBL and Everest Bank. SCBNL has highest ratio of investment to total deposit i.e 54.22% than the HBL and Everest Bank i.e 33.98% and 22.07% on the basis of average ratio, it can be said that the SCBNL 'capacity to mobilize its deposit on investment is better than HBL and Everest Bank.

Like wise, the CV in the ratio of SCBNL is 7.01% , Everest Bank is 27.90.% and the HBL is 24.75%. The CV of SCBNL is less than the CV of HBL

and Everest Bank. It concludes that the variability of the CV of HBL and Everest Bank is higher than the CV of SCBNL. It concludes that HBL and Everest Bank is the more inconsistent than SCBNL.

4.2.2 Government Securities to Total Deposit Ratio

Government securities to total deposit ratio is calculated by dividing total investment of government securities by total deposits. The high ratio indicates the efficiency of the firm in utilizing collected deposits to government securities and vice-versa. This ratio explains as to what extent the banks are able to invest their deposit's fund on government securities. It is computed as:

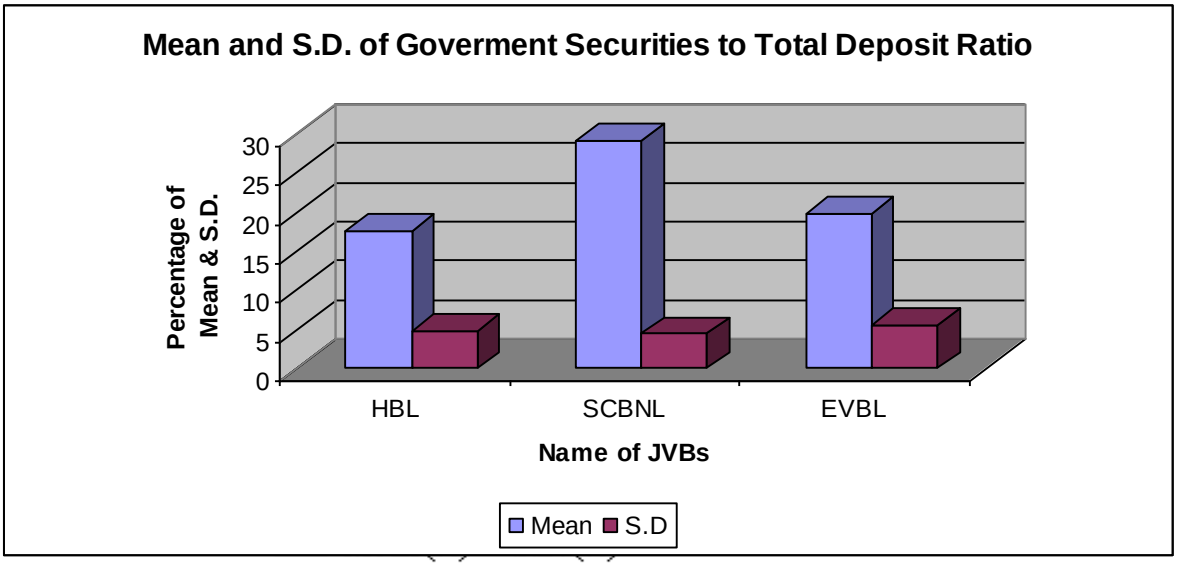
$$\frac{\textit{Investment Government Securities}}{\textit{Total Deposit}}$$

Table 4.14
Government securities to total deposit ratio

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	19.38	37.49	25.71	27.35
2006/07	21.48	28.84	25.89	25.06
2007/08	23.46	27.36	20.11	23.88
2008/09	12.15	28.28	15.44	18.73
2009/10	11.87	24.25	11.79	15.81
Mean	17.66	29.24	19.78	22.16
S.D	4.7974	4.4177	5.5728	4.2519
C.V	27.17%	15.11%	28.17%	19.18%

Sources: A*nnexure 'B'*

Figure 4.14



From the above Table 4.14 it can be observed the ratio of investment on government securities to total deposit. Here it is found that SCBNL has highest mean of government securities to total deposit than Everest Bank and HBL i.e 29.24>19.78>17.66 over the study period 2005/06 to 2009/10. The CV of SCBNL is lower than the CV of HBL and Everest Bank i.e 15.11<27.17<28.17 show that the ratio of SCBNL is more consistent than the ratio of HBL and Everest Bank,

similarly more CV of HBL and Everest Bank show the ratio is more inconsistent than the ratio of SCBNL.

From the above analysis it can be conclude that the SCBNL is more successful to utilize its total deposit on invest to government securities than HBL.

4.2.3 Share and Debenture to Total Deposit Ratio

Investment on share and debenture to total deposit ratio shows that the portion of invest on share and debenture from total deposit fund. It explains as to utilize the depositors fund to earn profit by investment on share and debenture. This ratio is calculated by dividing investment on share and debenture by total deposit. The high ratio represents the efficiency of the firm in utilizing collected deposits to share and debenture and vice-versa. It is computes as:

$$\frac{\textit{Investment on share and Debenture}}{\textit{Total Deposit}}$$

Table 4.15

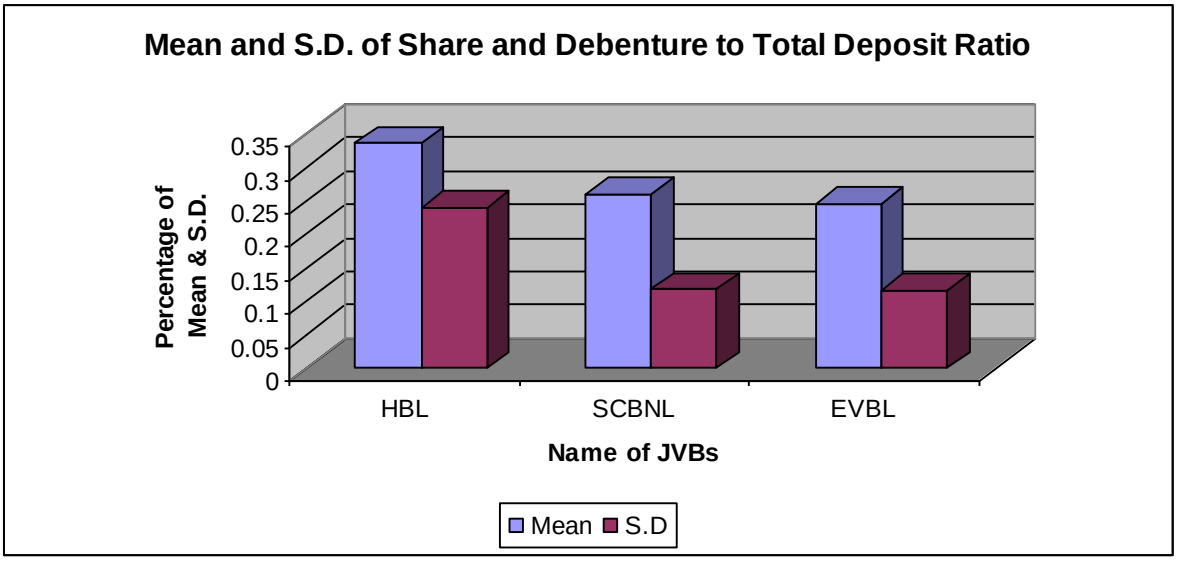
Share and Debenture to Total Deposit Ratio

(in Percentage)

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	0.15	0.07	0.14	0.12
2006/07	0.24	0.18	0.10	0.19
2007/08	0.81	0.39	0.42	0.35
2008/09	0.27	0.33	0.30	0.30
2009/10	0.21	0.33	0.27	0.27
Mean	0.336	0.26	0.246	0.246
S.D	0.2403	0.1176	0.1152	0.0816
C.V	7.52%	45.23%	46.83%	33.17%

Sources: *Annexure 'C*

Figure 4.15



The comparative Table listed above shows that the share and debenture to total deposit between three Joint Venture Banks HBL and SCBNL and Everest Bank. HBL has highest mean ratio of share and debenture to total deposit i.e. 0.2403 than SCBNL and Everest Bank. It means that HBL is more successful to utilize its deposited funds on share and debenture than SCBNL and Everest Bank. Similarly, between these three Joint Venture Banks SCBNL has lowest CV i.e 45.23 % shows that ratio is more consistent, similarly, the highest CV of HBL and Everest Bank i.e 71.52% and 46.83% shows that the ratio is least uniform.

4.2.4 Net Profit to Total Deposit Ratio

Net profit to total deposit ratio is the profitability ratio that actually measure the extent to which the banks are successful to gain profit by mobilizing its depositor's funds. It is also useful to analyze whether the bank utilize its total deposits efficiency or not. The high ratio indicates the effective utilization of collected deposits in different asset and yields higher return for the bank and vice-versa. It is computes as:

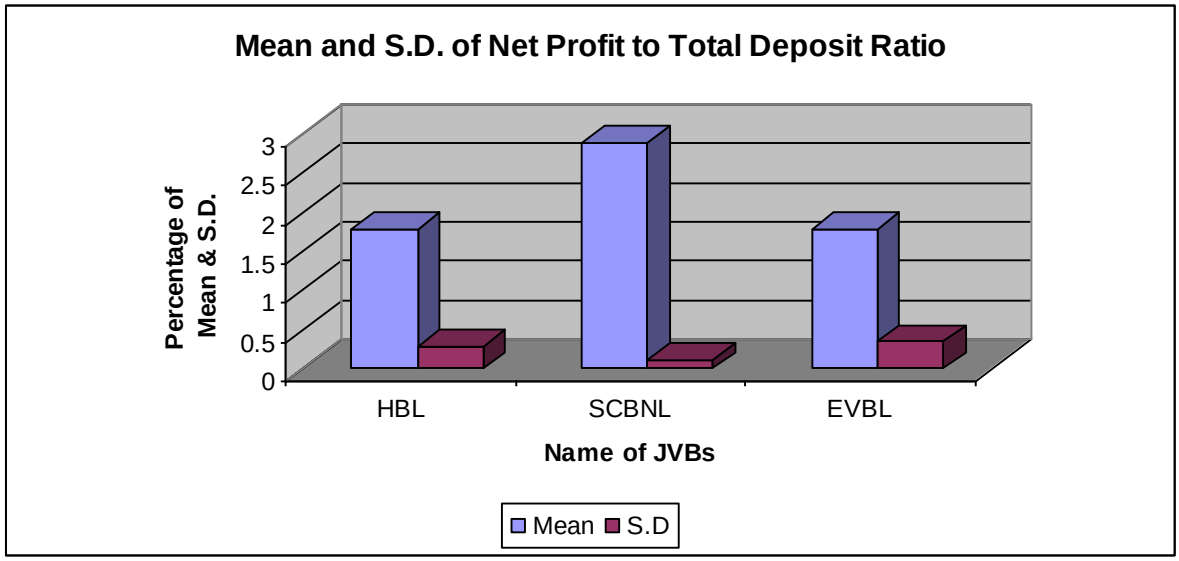
$$\text{Net profit to Total Deposit Ratio} = \frac{\textit{Net profit after tax}}{\textit{Total Deposit}}$$

Table 4.16
Net profit to Total Deposit Ratio

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	1.73	2.86	1.22	2.03
2006/07	1.64	2.81	1.63	2.03
2007/08	1.99	2.75	1.88	2.23
2008/09	2.17	2.90	1.92	2.34
2009/10	1.35	3.09	2.25	2.21
Mean	1.776	2.882	1.78	2.168
S.D	0.2839	0.1155	0.3425	0.121
C.V	15.99%	4.007%	19.24%	5.58%

Sources: A*nnexure 'D'*

Figure 4.16



From the above listed comparative Table, shows the ratio of net profit to total deposit. The ratio of Joint Venture Banks is not fixed through out the study period 2005/06 to 2009/10. During the study period, the average mean ratio of SCBNL is highest i.e. 2.882 than Everest Bank and HBL i.e. 2.25 and 1.776 it means that SCBNL is more successful to gain net profit by utilizing total deposit than Everest Bank and HBL, similarly, the average mean ratio of HBL is lower

than the mean ratio of JVBs i.e 1.776<2.168 but the SCBNL and Everest Bank have higher than JVBs i.e. 2.882 and 2.25 >20168.

The CV between HBL, SCBNL and Everest Bank, SCBNL has lowest ratio i.e 7.0076% means that the variability of the ratios is most consistent than HBL and Everest Bank. Similarly, the highest CV of HBL and Everest Bank i.e. 15.99% and 19.24% show highly variable or more inconsistent than SCBNL.

From the above calculation it can be conclude that SCBNL is the best bank in relation to net profit to total deposit ratio during the study period 2005/06 to 2009/10

4.2.5 Return of Total Assets Ratio

Return on total assets ratio is calculated by dividing net profit after tax by total assets of the firm. Thus, it measures the profitability of the banks with respects to the total assets. The higher ratio indicates the effective utilization of resources and yields a higher return for the banks. It is calculated as:

$$\text{Return on Total Assets Ratio} = \frac{\text{Net profit after Tax}}{\text{Total Assets}}$$

Table 4.17
Return on Total Assets Ratio

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	1.55	2.56	1.05	1.80
2006/07	1.47	2.42	1.38	1.77
2007/08	1.76	2.46	1.66	1.97
2008/09	1.91	2.56	1.73	2.08
2009/10	1.19	2.70	2.01	1.95

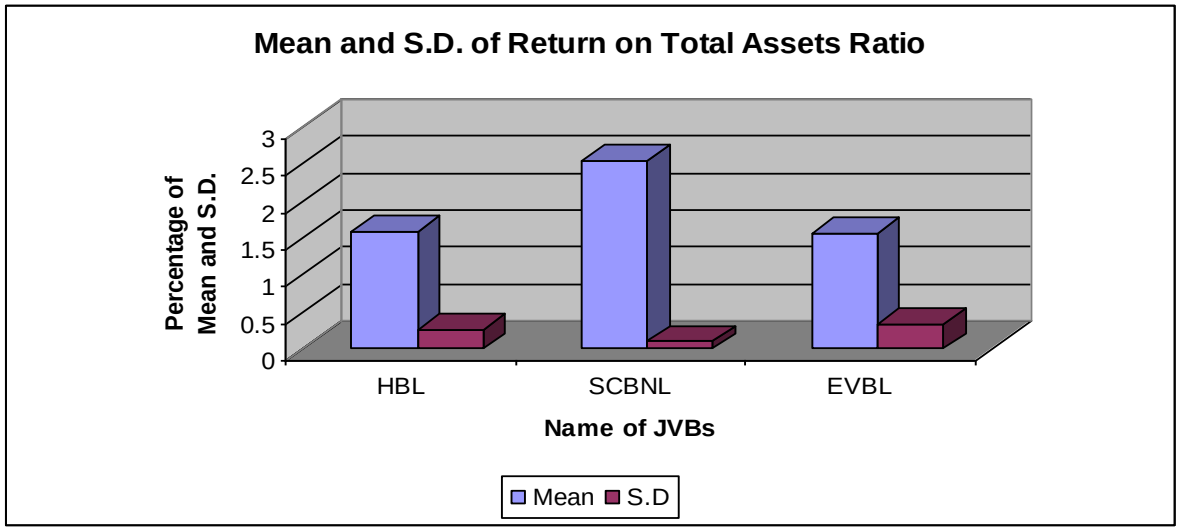
Mean	1.576	2.54	1.566	1.914
S.D	0.2475	0.0972	0.3267	0.1146
C.V	15.70%	3.83%	20.86%	5.99%

Sources: A*nnexure 'E'*

The above listed Table 4.17 shows return on total assets ratio for the Fiscal Year 2005/06 to 2009/10. During the study period SCBNL has the highest ratio than HBL and Everest Bank. While examining the mean ratio SCBNL has 2.54%, HBL has 1.576% and Everest Bank has 1.566% it shows that SCBNL has highest mean ratio than HBL and Everest Bank. Similarly the CV of HBL, SCBNL and Everest Bank are 15.70% and 3.83% and 20.86% respectively. The lowest CV of SCBNL i.e. 3.83% shows that the return of total assets of SCBNL is more consistent than HBL and Everest Bank. The highest CV of HBL and Everest Bank are highly variable than SCBNL. The high CV of HBL and Everest Bank than SCBNL are due to the low return during the selective last five Fiscal Year.

From the above analysis it can be concluded that the SCBNL utilize the overall resources efficiently than HBL and Everest Bank. It can be also cleared by following figure.

Figure 4.17



4.2.6 Cash and Bank Balance to Total Deposit Ratio

Cash and Bank balance to total deposit ratio can be calculated by dividing cash and bank balance by total deposit. The high ratio indicates the efficiency of the firm in utilizing collected deposits to cash and bank balance and vice-versa. It is computed as:

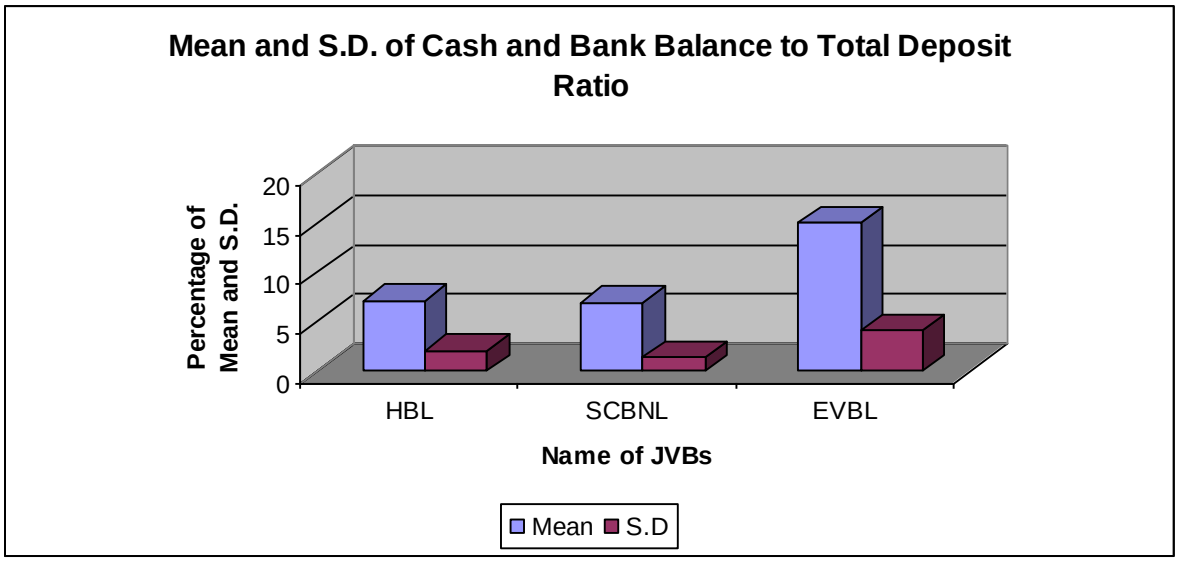
$$\textit{Cash and Bank Balance to Total Deposit Ratio} = \frac{\textit{Cash and bank balance}}{\textit{Total Deposit}}$$

Table 4.18
Cash and Bank Balance to Total Deposit Ratio

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	6.48	5.53	11.25	7.18
2006/07	5.85	8.20	13.15	8.47
2007/08	4.55	6.89	11.13	7.21
2008/09	8.79	8.87	18.50	11.95
2009/10	10.28	5.48	21.17	12.41
Mean	7.19	6.99	15.04	9.44
S.D	2.0677	1.3726	4.0687	2.2866
C.V	28.76%	19.64%	27.05%	24.22%

Sources: *Annexure 'F'*

Figure 4.18



From the above listed Table 4.18 shows the cash and bank balance to total deposit ratio for the Fiscal Year 2005/06 to 2009/10. During the study period the mean ratio of cash and bank balance to total deposit of Everest Bank is higher than the mean ratio of HBL and SCBNL i.e. 15.04>7.19>6.99. Similarly the CV of HBL is 28.76%, SCBNL is 19.64%. and Everest Bank is 27.05%. It shows the CV of SCBNL is lower than the CV of HBL and Everest Bank. The lower CV of SCBNL shows that the cash and bank balance to total deposit ratio of SCBNL is more consistent than HBL and Everest Bank.

From the above analysis it can be concluded that SCBNL utilize its resources in cash and bank balance more effectively.

4.2.7 Investment on Government Securities to Total Outside Investment Ratio

Now a days commercial bank area interested to investment on government securities such as treasury bills, development bonds, national saving bonds, special bonds etc, its are high liquid. Investment on government securities to total out side investment ratio in investment useful to know the extent on which the banks are successful in mobilizing their total investment on total different types of government securities. It is calculated by dividing investment on government securities by total outside investment. Thus, the high ratio indicates better mobilization of founds on government securities and vice.-versa. It is computed as:

$$\frac{\textit{Investment on Government securities}}{\textit{Total Deposit}}$$

Where,

TOI = Total Investment + Loans advances and bills purchase

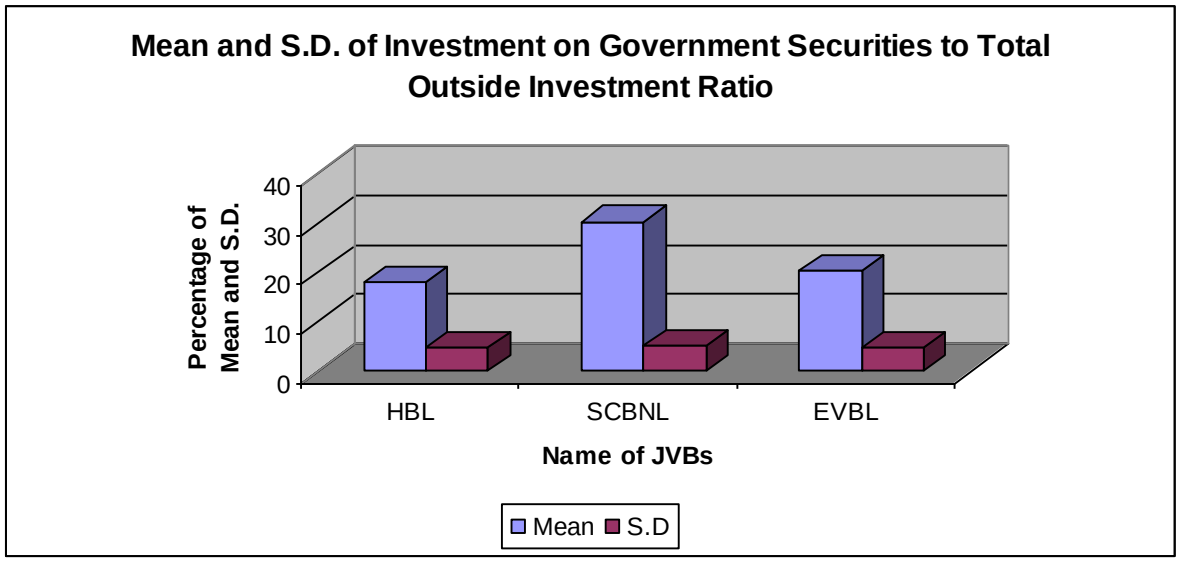
Table 4.19

Investment on government Securities to Total outside investment Ratio

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	20.11	39.69	25.34	28.26
2006/07	22.40	29.55	25.23	25.54
2007/08	22.75	29.46	20.61	24.36
2008/09	12.57	29.48	17.25	19.90
2009/10	12.26	23.83	13.37	16.56
Mean	18.02	30.40	20.36	22.92
S.D	4.6649	5.1366	4.6284	4.1719
C.V	25.89%	16.90%	22.73%	18.20%

Sources: Annexure 'G''

Figure 4.19



The above inside table revels that the investment on government securities to Total outside investment of joint venture banks have mixed trend. Between three banks, SBNL has invested higher amount i.e.30.40% on government securities such as treasury bills, development bounds, national saving bonds etc. Similarly, HBL and Everest Bank have invested lower amount on government securities than SCBNL i.e. 18.02% and 20.36% of total outside investment.

Likewise, the CV of SCBNL is lower than Everest Bank and HBL i.e. 16.90<22.73<25.89. This shows that the variability of the ratios between investment on government securities and total outside investment of SCBNL is most uniform than Everest Bank and HBL. The higher ratio of Everest Bank and HBL show that it has more variability in investment on government securities to total outside investment.

Lastly, it is clear that SCBNL invest highest part of total outside investment on government securities whose ratio is also most consistent.

4.2.8 Loan and Advances to Total Outside Investment Ratio

This ratio is very useful to know the extent on which the banks are successful in mobilizing their total outside investment on loan and advances.

Basically, commercial banks are invested more portion of total outside investment on loan and advances. This ratio is calculated by dividing investment on loan and advances by total outside investment. Thus the high ratio indicates better mobilization of depositor's fund on loan and advances and visa-versa computes as:

Investment on Loan and Advances

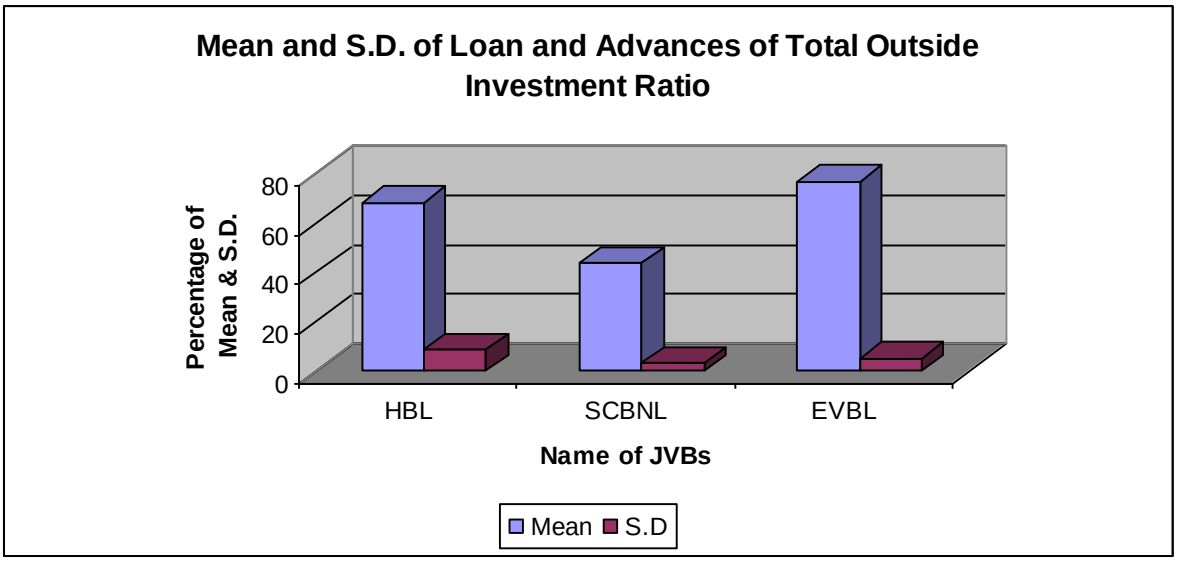
Total Outside Investment

Table 4.20
Investment on loan Advances to Total outside investment

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	61.74	41.02	70.00	56.26
2006/07	61.74	43.66	73.27	58.67
2007/08	61.45	49.67	78.38	62.29
2008/09	78.17	40.33	80.06	64.87
2009/10	79.95	44.57	84.62	69.31
Mean	68.61	43.85	77.27	62.28
S.D	8.5516	3.3114	5.1360	4.5913
C.V	12.46%	7.55%	6.65%	7.37%

Sources: Annexure 'H'

Figure 4.20



The above comparative Table 4.20 shows the investment on loan and advances to total outside investment ratio. Between three Joint Ventures Bank HBL, SCBNL and Everest Bank, Everest Bank has highest mean ratio i.e.77.27 than SCBNL and HBL i.e.43.85 and 68.61. It means that between there three Joint Venture Banks Everest Bank utilize highest percentage of total outside investment on loan and advances.

The CV of Everest Bank is lower than that of SCBNL and HBL i.e. 6.65%<7.55%<12.46%. That predicates that the given ratio of Everest Bank is stable or less variable than SCBNL and HBL. While CV of SCBNL and HBL are highest show that the ratio of SCBNL and HBL are less stable or more variable than Everest Bank.

From the above analysis it is cleared that the mobilization of total outside investment into loan and advances of Everest Bank is higher and the ratio of the bank is more uniform.

4.2.9 Investment on Share and Debenture to Total outside Investment Ratio

Investment on share and Debenture

Total outside investment ratio

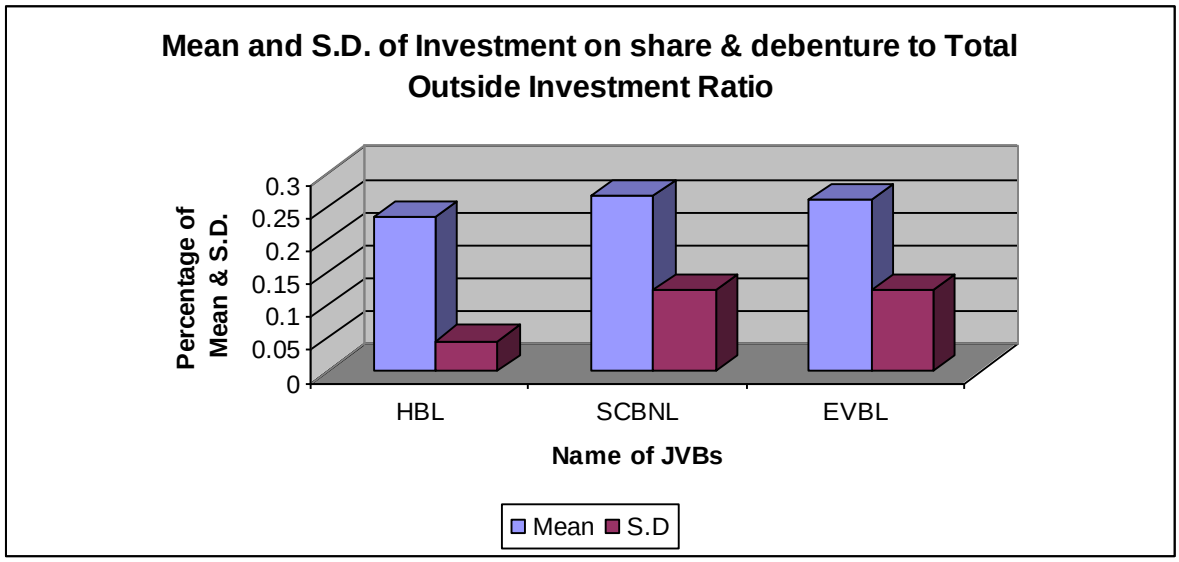
Table 4.21

Share and Debenture to Total outside Investment Ratio

Fiscal Year	HBL	SCBNL	Everest Bank	JVBS
2005/06	0.1563	0.0704	0.1363	0.1212
2006/07	0.2548	0.1868	0.1023	0.1922
2007/08	0.2727	0.4147	0.4255	0.3621
2008/09	0.2802	0.3403	0.3367	0.3185
2009/10	0.2166	0.3224	0.3084	0.2812
Mean	0.2361	0.2669	0.2618	0.2550
S.D	0.0454	0.1227	0.1231	0.0087
C.V	19.23%	45.97%	47.02%	3.41%

Sources: Annexure 'I'

Figure 4.21



The above Table 4.21 reveals that the of investment on share and debenture to total outside investment for the study period 2005/06 to 2009/10.It shows that

Joint Ventures Banks invest very low amount on share and debenture from total outside investment. Between three Joint Ventures Banks HBL, SCBNL and Everest Bank, SCBNL has highest mean ratio of share and debenture to total outside investment i.e. 0.2669% than that of HBL and Everest Bank i.e. 0.2361% and 0.2618%. That means between these three banks SCBNL utilize highest percentage of total outside investment into share and debenture.

Similarly, lowest CV of HBL i.e. 19.23% shows that the ratio of the bank is more consistent and less variable. Likewise, highest CV of SCBNL and Everest Bank i.e. 45.97% and 47.02% show that the ratio of bank is more inconsistent than HBL over the study period.

Lastly, it can be concluded that the joint venture bands are not successful to mobilize their racecourse in the field of share and debenture. They have invested very nominal percentage of total outside investment on share and debenture.

4.2.10 Total Outside Investment of Joint Venture Banks.

In this section, the ratio between various investment assets to total outside investment is calculated after the total outside investment of joints investment is calculated after the total outside investment of Joint Venture Bank is portioned into different types of investment assets. In other words, in this section, it is found that how many percentages of totals outside investment is invested in which investment assets. Ratio made by total outside investment assets are tabulated in below:

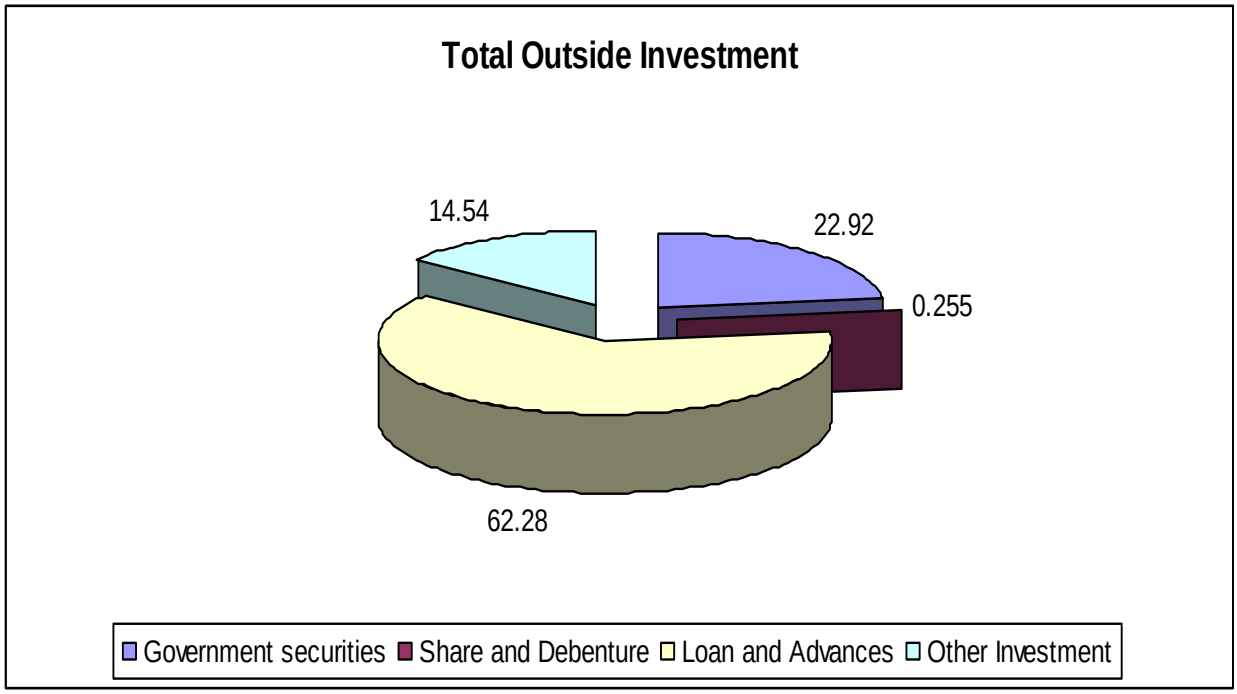
Table 4.22

Total outside Investment of JVBs
Government Securities to total Deposit Ratio

Fiscal Year	Government securities	Share and Debenture	Loan and Advances	Other Investment
2005/06	28.26	0.1212	56.26	15.36
2006/07	25.54	0.1922	58.67	15.60
2007/08	24.36	0.3621	62.29	12.99
2008/09	19.90	0.3185	64.87	14.91
2009/10	16.56	0.2812	69.31	13.85
Mean	22.92	0.2550	62.28	14.54
S.D	4.1719	0.0087	4.5913	0.9809
C.V	18.20%	3.41%	7.37%	6.75%

Annexure 'G','H','I'

Figure 4.22



From the above Table 4.22 it is shows that Joint Ventures Banks have invested funds mainly on loan and advances. They have low invested on share and debenture. As per above calculation Joint Ventures Banks invested 62.289% on loan and advances, 23.73% on others Investment, 22.92% on Government Securities and 0.255% on Share and Debenture out of total outside investment. The lowest CV of investment on share and debenture is more consistent than on other securities.

Lastly it can be said that Joint Ventures Banks are mainly interested to invest on loan and advances which gives high return. They are not interacted to invest on share and debentures which also give high return but also invested on government securities more consistently which are less risk and low return.

4.3 Least square Linear Trend Analysis

Trend analysis is a mathematic method, which is widely used to find out future tendencies best on past assumptions. Future more, it is periodically in absolute amount. It is computed by using the following formula:

$$Y = a + bx$$

Where,

a = y intercept

b = Slop of the trend line or amount of change that comes in y for a unit change in x

To make calculation easier, the deviation of the independent variable (i.e. time are taken from the middle of the time period so that $\sum X = 0$. Then the value of 'a' and 'b' can be easily by using following formula.

$$a = \frac{\sum y}{n} \qquad b = \frac{\sum xy}{\sum x}$$

Hence future value for coming five years (Up to 2015 AD) have been analyzed and forecasted the help of analysis. There are

- Total deposits
- Total investment
- Loan and advances
- Share and Adventure
- Government Securities
- Net profit
-

4.3.1 Least Square Liner Trend of Total Deposits

Under this topic, efforts has been made to analyzed trend of total deposits of the joints ventures banks for five years (up to 2009/10) and forecast of the same for next five years. The following table shows the trend values of total deposits of joint ventures banks.

Table 4.23

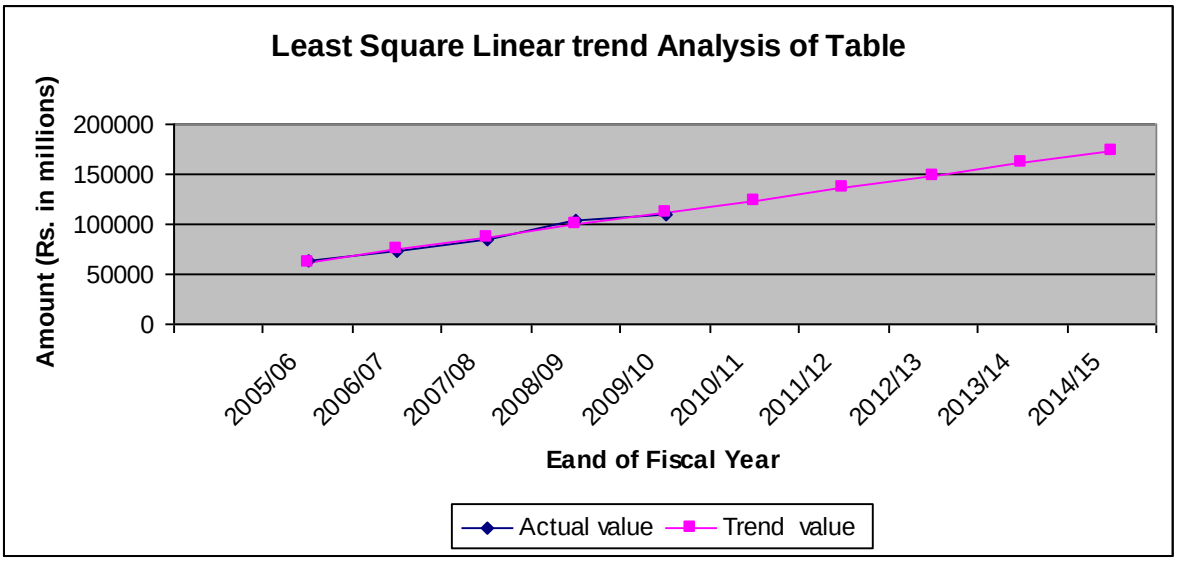
Least square linear trend Analysis of total Deposit

(Rs is Million)

End of fiscal year (t)	**X = t-2007/08**	**Actual value**	**Trend value= Yc = 86976.2832 + 12321.8193X**
2005/06	-2	63354.329	62332.6446
2006/07	-1	72881.692	74654.4639
2007/08	0	85563.085	86976.2832
2008/09	1	103356.077	99298.1025
2009/10	2	109726.233	111619.9218
2010/11	3		123941.7411
2011/12	4		136263.5604
2012/13	5		148585.3797
2013/14	6		160907.199
2014/15	7		173229.0183

Scource :- Annexure J.1'

Figure 4.23



From the above Table 4.23 shows that 'a',i.e. y- intercept and 'b' i.e. slope of the trend line of total deposits of Joints Venture Banks are Rs.86976.2832 and Rs. 12321.8193 millions receptively. It is also shows that the deposit of Joint Ventures Banks is increasing by 12321.8193 per year. So trend equation of total deposits is

$$Yc = 86976.2832 + 12321.8193X$$

From the above equation forecasted total deposit for coming five years would be Rs. 123941.7411, 136263.5604, 148585.3797, 160907.199 and 173229.0183 receptivity.

4.3.2 Least square Liner Trend Analysis of total Investment.

In the section, trend of total investment of the Joint Venture Banks has been analyzed for five years (up to 2009/10) and forecast of the same for next five years. The following table shows the trend values of total investment of Joints Ventures Banks.

Table 4.24

Least square linear trend Analysis of total Investment

(Rs is Million)

End of fiscal year (t)	X = t-2007/08	Actual value	Trend value Yc = 31759.2374+1526.2053X
2005/06	-2	27937.081	28706.8268
2006/07	-1	30360.533	30233.0321
2007/08	0	32302.553	31759.2374
2008/09	1	34895.292	33285.4427
2009/10	2	33300.728	34811.648
2010/11	3		36337.8533
2011/12	4		37864.0586
2012/13	5		39390.2639
2013/14	6		40916.4692
2014/15	7		42442.6745

Source:- Annexure 'j.2'

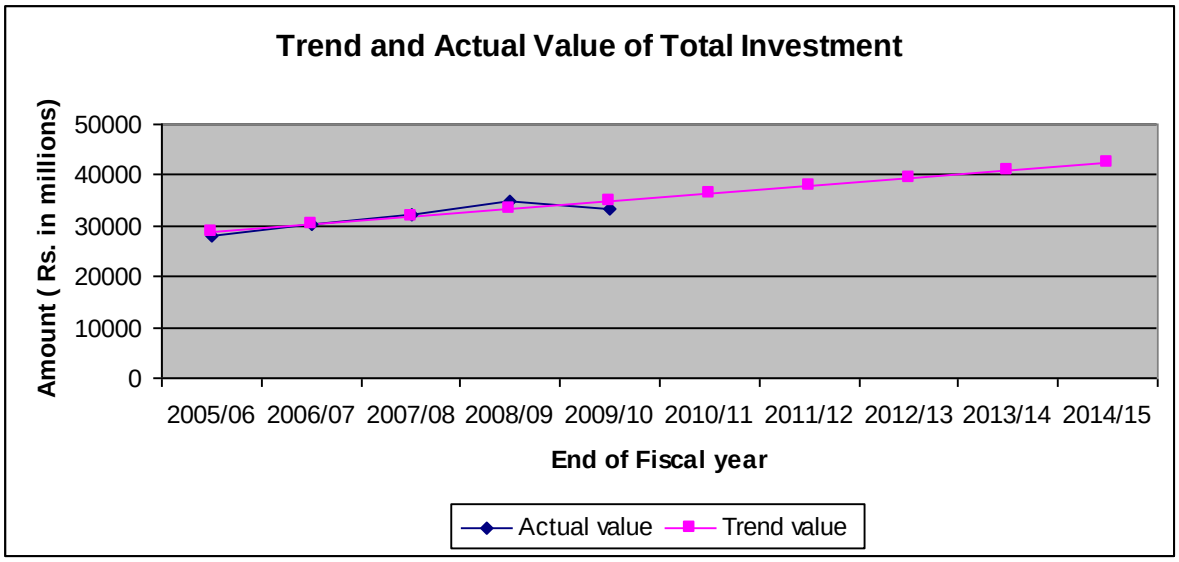
From The above Table 4.24 shows that 'a' i.e. y- intercept and 'b' i.e. slope of the trend line of total investments of Joints Ventures Banks are Rs. 31759.2374 and Rs. 1526.2053 millions respectively. From this it is clear that total investment of Joint Venture Banks is increasing by Rs. 1526.2053, million per year.

So, trend equation of the total investment is

Yc = 31759.2374+1526.2053X

From the above equation forecasting total deposit for coming five years would be Rs. 36337.8533, 37864.0586, 39390.2639, 40916.4692 and 42442.6745 respectively. Following figure shows the trend and actual value of total investment of Joint Venture Banks.

Figure 4.24



4.3.3 Least Square Linear Trend Analysis of Investment on Loan and Advances

In this section trend of investment on loan and advances of the Join Venture Banks has been analyzed for five years (up to 2009/10) and forecast of the same for next five years. The following table shows the trend values of investment of loan and advances.

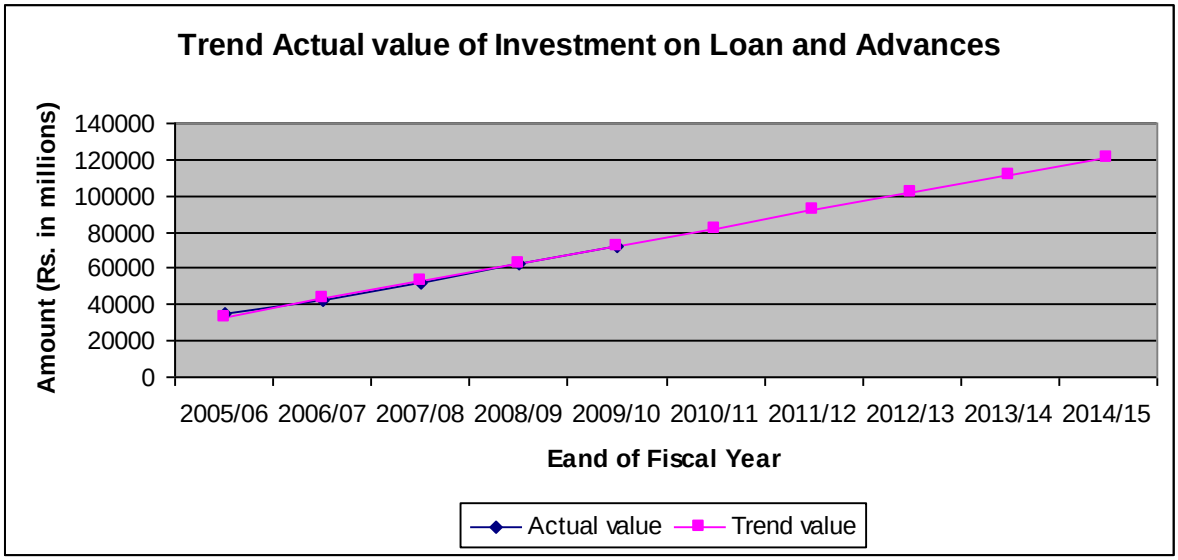
Table 4.25

Least square linear Analysis of Investment of Loan and Advances.

End of fiscal year (t)	X = t-2007/08	Actual value	Trend value Yc = 52883.4796 + 9740.0113X
2005/06	-2	34498.703	33403.457
2006/07	-1	41960.443	43143.4683
2007/08	0	52237.296	52883.4796
2008/09	1	63083.95	62623.4909
2009/10	2	72637.006	72363.5022
2010/11	3		82103.5135
2011/12	4		91843.5248
2012/13	5		101583.5361
2013/14	6		111323.5474
2014/15	7		121063.5587

Source:- Annexure 'j.3

Figure 4.25



Above trend Table 4.25 shows that 'a' i.e. y- intercept and 'b' i.e. slop of the trend line of investment on loan advances of Join Venture Banks are Rs. 52883.4796 and Rs. 9740.0113 respectively. From this it is clear that investment

on loan and advances of Joint Venture Banks is increasing by 9740.0113 millions per year. So, trend equation of total investment is

$$Yc = 52883.4796 + 9740.0113X$$

From the above equation forecasting total investment on loan and advances for coming five years would be Rs. 82103.5135, 91843.5248, 101583.5361, 111323.5474 and 121063.5587 respectively. Following figure shows the trend and actual value of total investment on loan and advances of Joint Venture Banks.

4.3.4 Least square linear Trend Analysis of Net Profit

In this section trend of Net Profit of the Join Venture Banks has been analyzed for five years (up to 2009/10) and forecast of the same for next five years. The following table shows the trend values of Net Profit.

Table 4.26
Least square linear trend Analysis of Net Profit

End of fiscal year (t)	X = t-2007/08	Actual value	Trend value **Yc = 1902.6912 + 322.0797X**
2005/06	-2	1284.429	1258.5318
2006/07	-1	1479.900	1580.6115
2007/08	0	1906.008	1902.6912
2008/09	1	2416.683	2224.7709
2009/10	2	2426.436	2546.8506
2010/11	3		2868.9303
2011/12	4		3191.0100
2012/13	5		3513.0897
2013/14	6		3835.1694
2014/15	7		4157.2491

Source:- Annexure 'j.4

Figure 4.26

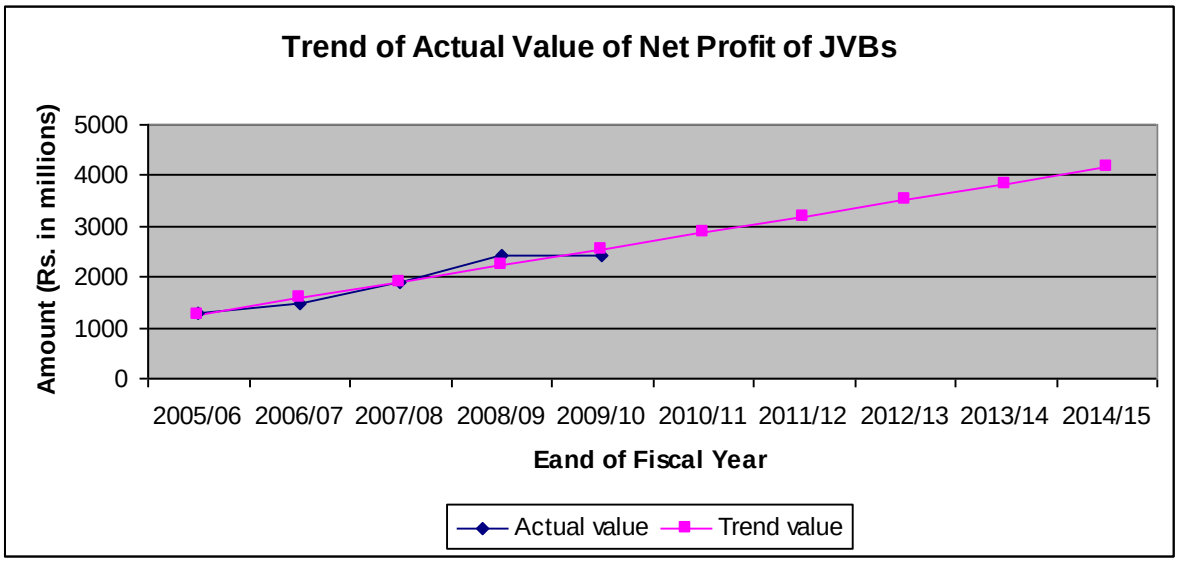


Table 4.26 exhibits that 'a' i.e.- intercept and 'b' i.e. slope of the trend line of Net Profit of Joint Venture Banks remained Rs. 1902.6912 and Rs. 322.0797 millions respectively. During the study period, the amount of net profit revealed gradually increasing trend. On the average it is increased by Rs. 322.0797 million per year.

Therefore trend equation of the Net profit is

$$Yc = 1902.6912 + 322.0797X$$

According to above equation forecasted value of Net profit for next five years be Rs. 2868.9303, 3191.0100, 3513.0897, 3835.1694 and 4157.2491 respectively.

4.3.5 Least square Liner Trend Analysis of Investment on Government securities.

In this section, an attempt is made to calculate the trend values of investment on government securities of Joint Venture Banks. The effort has been made for five year up to 2009/10 and forecast of the same for next five years. The following table shows the trend values of investment on government securities.

Table 4.27
Least square Liner Trend Analysis of Investment on Government Securities

End of fiscal year (t)	X = t-2007/08	Actual value	Trend value Yc = 18546.6532 + 113.8689X
2005/06	-2	17326.683	18318.9154
2006/07	-1	18267.442	18432.7843
2007/08	0	20430.888	18546.6532
2008/09	1	19357.009	18660.5221
2009/10	2	17351.244	18774.391
2010/11	3		18888.2599
2011/12	4		19002.1288
2012/13	5		19115.9977
2013/14	6		19229.8666
2014/15	7		19343.7355

Source:- Annexure 'j.5'

Figure 4.27

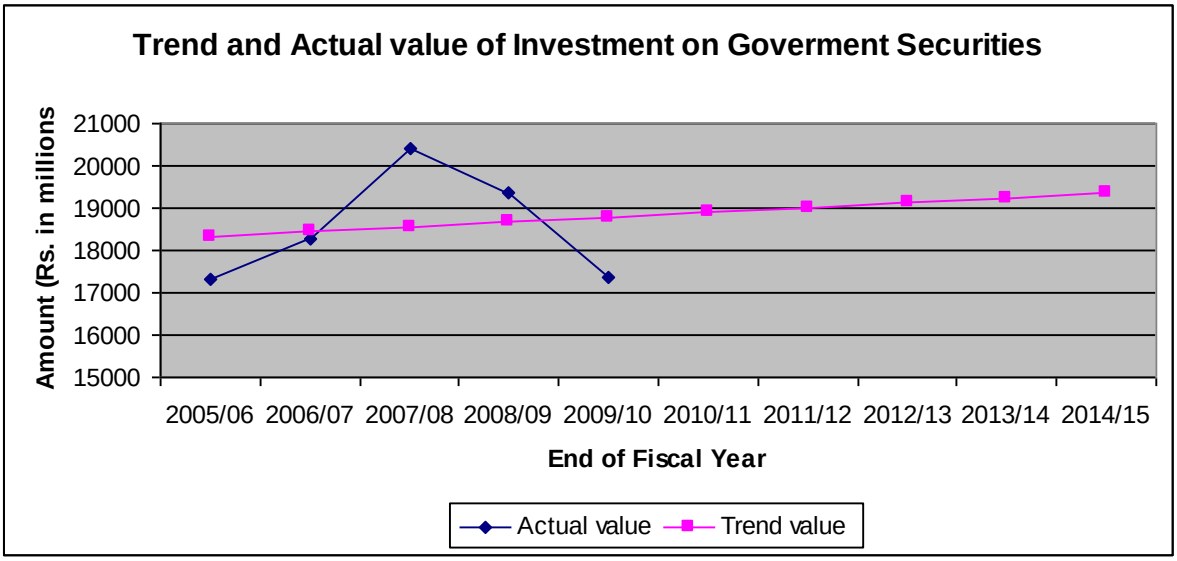


Table 4.27 exhibits that 'a' i.e.- intercept and 'b' i.e. slope of the trend line of investment on government securities of Joint Venture Banks remained Rs.

18546.6532 and Rs. 113.8689 millions respectively. During the study period, the amount of investment on government securities revealed gradually increasing trend. On the average it is increased by Rs. 113.8689 million per year.

Therefore trend equation of the investment on government securities is

$$Yc = 18546.6532 + 113.8689X$$

According to above equation forecasted value of investment on government securities for next five years be Rs. 18888.2599, 19002.1288, 19115.9977, 19229.8666 and 19343.7355 respectively.

4.3.6 Least Square Liner Trend Analysis of Investment on Share and Debenture.

In this section, an attempt is made to calculate the trend values of investment on share and debenture of Joint Venture Banks. The effort has been made for five year up to 2009/10 and forecast of the same for next five years. The following table shows the trend values of Investment on Share and Debenture.

Table 4.28

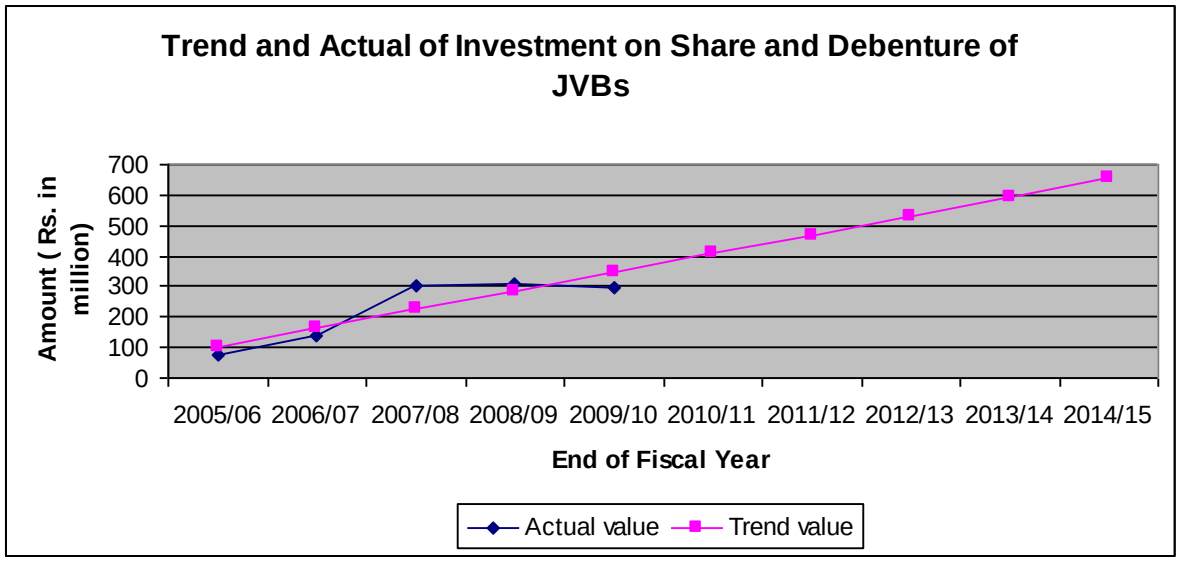
Least square Liner Trend Analysis of Investment on Share and Debenture

(Rs in million)

End of fiscal year (t)	X = t-2007/08	Actual value	Trend value $Y_c = 223.9818 + 61.3081X$
2005/06	-2	74.333	101.3656
2006/07	-1	137.459	162.6737
2007/08	0	303.646	223.9818
2008/09	1	309.736	285.2899
2009/10	2	294.735	346.598
2010/11	3		407.9061
2011/12	4		469.2142
2012/13	5		530.5223
2013/14	6		591.8304
2014/15	7		653.1385

Source:- Annexure 'j.6'

Figure 4.28



From the above Table 4.28 show that the investment on share and debenture of Joint Venture Banks are in increasing trend and shows that the 'a' i.e. y intercept and 'b' i.e. slop of trend line of investment on share and debenture are Rs. 223.9818 and 61.3081million respectively. On the average it is increased by Rs. 61.3081 million per year.

So, trend equation of investment on share and debenture

$$Y_c = 223.9818 + 61.3081X$$

On the above equation forecasted investment on share and debentures for coming five years up to 2014/15 would be Rs. 407.9061, 469.2142, 530.5223, 591.8304 and 653.1385 millions respectively.

4.4 Correlation Analysis

It is a useful statistical tool for measuring the intensity of the magnitude of liner relationship between two series. Karl person's coefficient of correlation is most common and useful tool to measure the relationship between two verifiable in the banks. The correlation coefficient (r) between two variables x and y can be obtained by using following formula:

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

Where,

r= Coefficient of correlation

N= no. of observation in series x and y

$\sum \times$ = Some of observations in series x

$\sum y$ = Some of observations in series y

$\sum xy$ = Some of observations in series x and y

$\sum \times^2$ = Some of observations in series x

$\sum y^2$ = Some of observations in series y

Interpretation of correlation coefficicient.

i. When r = +1, implies that two variables are positively perfectly correlated.
ii. When r = -1 implies that two variables are negatively perfectly correlated.
iii. When r = 0, there dare no relation.
iv. When r lies between 0.7 to 0.999 (-0.7 to 0.999), there is high degree of positive (native) correlation.
v. When r lies between 0.5 to 0.699, there is moderate degree of correlation.
vi. Where r is lies than 0.1 to 0.5, there are is low degree of correlation.

Probable Error

Probable error of the coefficient of correlation can be calculated by the following formula:

$$\text{P.E. (r)} = 0.6745 \text{ x } \frac{(1-r^2)}{\sqrt{n}}$$

A few rules for the significant of correlation coefficient are as following:

i. If r<6 P.E. (r), then value or r is not at all significant (insignificant)

ii. If r>6 P.E. (r), the r is definitely significant.

iii. In other situation, nothing can be calculated with certainty.

4.4.1 Correlation Analysis between Total Deposit and total Investment.

Total deposit and total variables of Joint Venture Banks for the different for the sampled period have been presented below.

Table 4.29

Correlation Analysis between Total deposit and total investment.

(Rs in million)

Fiscal year	Total Deposit X	Total Investment Y	Xy	x^2	y^2
2005/06	63354.329	27937.081	1769935021	4013771003	780480494.8
2006/07	72881.692	30360.533	2212727015	5311741029	921761964
2007/08	85563.085	32302.553	2763906088	7321041515	1043454930
2008/09	103356.077	34895.292	3606640487	10682478650	1217681404
2009/10	109726.233	33300.728	3653963440	12039846210	1108938485
Total	434881.416	158796.187	14007172050	39368878410	5072317278

$\Sigma x = 434881.416$

$\Sigma y = 158796.187$

$\Sigma xy = 14007172050$

$\Sigma x^2 = 39368878410$

$\Sigma y^2 = 5072317278$

We get,

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

$$r = \frac{5 \times 14007172050 - 434881.416 \times 158796.187}{\sqrt{5 \times 39368878410 - (434881.416)^2}\sqrt{5 \times 5072317278 - (158796.187)^2}}$$

$= 0.92$

$$\text{P.E. } (r) = 0.6745 \times \frac{\left[1 - (0.92)^2\right]}{\sqrt{5}}$$

$= 0.0463$

Above calculation reveals that the correlation coefficient and probable error of coefficient between total deposit and total investment on Joint Venture Banks are 0.92 and 0.0463 respectively. Here, correlation coefficient came six time greater than the probable error i.e. 0.92 >0.0463x6. It indicates that the positive correlation between total deposit and total investment at definitely significant level.

4.4.2 Correlation Analysis between total Deposit and total loan and Advances

Total deposits and total investment on loan and advances variables of joint venture banks for the different sampled period have been presented below:

Table 4.30

Correlation Analysis between Total deposit and total Loan and Advances

(Rs in million)

Fiscal year	Total Deposit (x)	Total Loan & Advances (y)	Xy	x^2	y^2

2005/06	63354.329	34498.703	2185642180	4013771003	1190160509
2006/07	72881.692	41960.443	3058148083	5311741029	1760678777
2007/08	85563.085	52237.296	4469584198	7321041515	2728735093
2008/09	103356.077	63083.95	6520109594	10682478650	3979584748
2009/10	109726.233	72637.006	7970185045	12039846210	5276134641
Total	434881.416	264417.398	24203669100	39368878410	14935293770

$\Sigma x = 434881.416$

$\Sigma y = 264417.398$

$\Sigma xy = 24203669100$

$\Sigma x^2 = 39368878410$

$\Sigma y^2 = 14935293770$

We get,

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

$$r = \frac{5 \times 24203669100 - 434881.416 \times 264417.398}{\sqrt{5 \times 39368878410 - (434881.416)^2}\sqrt{5 \times 14935293770 - (264417.398)^2}}$$

$= 0.99$

$$\text{P.E. } (r) = 0.6745x \frac{\left[1-(0.99)^2\right]}{\sqrt{5}}$$

$= 0.006$

Above calculation reveals shows that the correlation coefficient and probable error of coefficient between total deposit and total loan and Advances are 0.99 and 0.006 respectively. Here, correlation coefficient came six time greater than the probable error i.e. 0.99>0.006x6. It indicates that the correlation between total deposit and total loan and advances are high degree of positive correlation coefficient and value of correlation is significant level.

4.4.3 Correlation Analysis between total Deposit and total Investment on government Securities.

Total deposits and total investment on government securities variables of joints ventures banks or the different sampled period have been presented below:

Table 4.31

Correlation Analysis between Total deposit and total Investment on Government Securities

Fiscal year	Total Deposit (x)	Total government Securities(y)	Xy	x^2	y^2
2005/06	63354.329	17326.683	1097720375	4013771003	300213943.8
2006/07	72881.692	18267.442	1331362081	5311741029	333699437.2
2007/08	85563.085	20430.888	1748129807	7321041515	417421184.5
2008/09	103356.077	19357.009	2000673815	10682478650	374697281.7
2009/10	109726.233	17351.244	1903886642	12039846210	301065668.3
Total	434881.416	92733.356	8081772720	39368878410	1727097516

Σx 434881.416

Σy = 92733.356

Σxy = 8081772720

Σx^2 = 39368878410

Σy^2 =1727097516

We get,

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

$$r = \frac{5 \times 8081772720 - 434881.416 \times 92733.356}{\sqrt{5 \times 39368878410 - (434881.416)^2}\sqrt{5 \times 1727097516 - (92733.356)^2}}$$

= 0.1533

P.E. (r) = $0.6745x \frac{\left[1-(0.1533)^2\right]}{\sqrt{5}}$

= 0.2946

Above calculation shows that the correlation coefficient and probable error of coefficient between total deposit and total Investment and Government securities are 0.1533 and 0.2946 respectively. Here, correlation coefficient came lower than the probable error i.e. 0.1533<0.2946. It indicates that the correlation between total deposit and total government securities is low degree of positively correlation and correlation is not at all significant level.

4.4.4 **Correlation Analysis between total Deposit and total Investment on Share and Debenture.**

Total deposits and total investment on Share and debenture variables of joints venturous banks for the different sampled period have been presented below:

Table 4.32

Correlation Analysis between Total deposit and total share and debenturre

(Rs.in Million)

Fiscal year	Total Deposit (x)	Share and Debenture (y)	Xy	x^2	y^2
2005/06	63354.329	74.333	4709317.338	4013771003	5525.39
2006/07	72881.692	137.459	10018244.5	5311741029	18894.98
2007/08	85563.085	303.646	25980888.51	7321041515	92200.89
2008/09	103356.077	309.736	32013097.87	10682478650	95936.39
2009/10	109726.233	294.735	32340161.28	12039846210	86868.72
Total	434881.416	1119.909	105061709.5	39368878410	299426.37

$\Sigma x = 434881.416$

$\Sigma y = 1119.909$

$\Sigma xy = 105061709.5$

$\Sigma x^2 = 39368878410$

$\Sigma y^2 = 299426.37$

We get,

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

$$r = \frac{5 \times 105061709.5 - 434881.416 \times 1119.909}{\sqrt{5 \times 39368878410 - (434881.416)^2}\sqrt{5 \times 299426.37 - (1119.909)^2}}$$

=0.8838

$$\text{P.E. (r)} = 0.6745x \frac{\left[1 - (0.8838)^2\right]}{\sqrt{5}}$$

= 0.068

Above calculation shows that the correlation coefficient and probable error of coefficient between total deposit and total Investment on share and debenture are 0.8838 and 0.068 respectively. Here, correlation coefficient came greater than six times the probable error i.e. 0.8838>0.068x6. It indicates that the correlation between total deposit and total share and debenture are positively correlation correlated and correlation at significant level.

4.4.5 **Correlation Analysis between total Deposit and total Net Profit**

Total deposits and total Net Profit of joints venturs banks for the different sampled period have been presented below:

Table 4.33

Correlation Analysis between Total deposit and total Net profit

(Rs.in Million)

Fiscal year	Total Deposit (x)	Net Profit (y)	Xy	x^2	y^2
2005/06	63354.329	1284.429	81374137.44	4013771003	1649757.856
2006/07	72881.692	1479.900	107857616	5311741029	2190104.01
2007/08	85563.085	1906.008	163083924.5	7321041515	3632866.496
2008/09	103356.077	2416.683	249778874.2	10682478650	5840356.722
2009/10	109726.233	2426.436	266243681.9	12039846210	5887591.662
Total	434881.416	9513.456	868338234	39368878410	19200676.75

$\Sigma x = 434881.416$

$\Sigma y = 9513.456$

$\Sigma xy = 868338234$

$\Sigma x^2 = 39368878410$

$\Sigma y^2 = 19200676.75$

We get,

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

$$r = \frac{5 \times 868338234 - 434881.416 \times 9513.456}{\sqrt{5 \times 39368878410 - (434881.416)^2}\sqrt{5 \times 19200676.25 - (9513.456)^2}}$$

$= 0.99$

$$\text{P.E. (r)} = 0.6745x \frac{\left[1-(0.99)^2\right]}{\sqrt{5}}$$

$= 0.006$

Above calculation shows that the correlation coefficient and probable error of coefficient between total deposit and Net Profit are 0.99 and 0.006 respectively. Here, correlation coefficient came greater than six times the probable error i.e. 0.99>0.006×6. It indicates that the correlation between total deposit and total share and debenture are high degree of positively correlation correlated and correlation at significant level.

4.5 Major Finding of the Study:

Based on the analysis of the various data remarkable findings are drawn up. The Major findings are as follows:

I) Finding from Risk and Return Analysis.

Major Finding from the risk and return on various investment assets in which the joint venture banks invest their funds and portfolio made from such investments assets can be summarized as follow:

Table No. 4.34

Major Finding from Risk and Return Analysis

(In percentage)

S.N.	Assets	Average Return($\bar{R}$)	Standard Deviation	Coefficient Variation (CV)
1	Government Securities	4.23	0.8681	0.2052
2.	Loan and Advances	6.026	0.3370	0.0559
3.	Investment Portfolio	5.52	0.2669	0.0484

ii) Finding from Analysis of Ratio

From the analysis of ratios of different joint venture bank, major finding can be summarized as follows:

Table 4.35
Major Finding from analysis of Ratio

(In percentage)

S.N.	Ratios		HBL	SCBNL	EVBL	JVBs
1	Total investment to total deposit ratio	Mean	33.98	54.22	22.07	37.52
		S.D.	8.41	3.80	6.1575	5.0207
		C.V.	24.75	7.01	27.90	13.38
2	Government securities to total deposit ratio	Mean	17.66	29.24	19.78	22.16
		S.D.	4.7974	4.4177	5.5728	4.2519
		C.V.	27.17	15.11	28.17	19.18
3	Share and debenture to total deposit ratio	Mean	0.336	0.26	0.246	0.246
		S.D.	0.2403	0.1176	0.1152	0.0816
		C.V.	71.52	45.23	46.83	33.17
4	Net profit to total deposit ratio	Mean	1.776	2.882	1.78	2.168
		S.D.	0.2839	0.1155	0.3425	0.121
		C.V.	15.99	4.0076	19.24	5.58
5	Return on total assets ratio	Mean	1.576	2.54	1.566	1.914
		S.D.	0.2475	0.0972	0.3267	0.1146
		C.V.	15.70	3.83	20.86	5.99
6	Cash and bank balance to total deposit ratio	Mean	7.19	6.99	15.04	9.44
		S.D.	2.0677	1.3726	4.0687	2.2866
		C.V.	28.76	19.64	27.05	24.22
7	Investment on government securities to total outside investment ratio	Mean	18.02	30.40	20.36	22.92
		S.D.	4.6649	5.1366	4.6284	4.1719
		C.V.	25.89	16.90	22.73	18.20
8	Loan and advances to total outside investment ratio	Mean	68.61	43.85	77.27	62.28
		S.D.	8.5516	3.3114	5.1360	4.5913
		C.V.	12.46	7.55	6.65	7.37
9	Share and debenture to total outside investment ratio	Mean	0.2361	0.2669	0.2618	0.2550
		S.D.	0.0454	0.1227	0.1231	0.0087
		C.V.	19.23	45.97	47.02	3.41

iii) Finding from least square liner trend analysis.

Table 4.36
Major finding from least square liner trend analysis

(Rs.in million)

S.N.	Items	Slop of trend increasing (Decreasing) per year
1	Total deposit	12321.8193
2	Total investment	1526.2053
3	Investment on government securities	113.8689
4	Investment on share and debenture	61.3081
5	Investment on loan and advances	9740.0113
6	Net profit	322.0797

iv) Finding from correlation analysis

a) The correlation coefficient between total deposit and total investment Indicates that there is high degree positive correlation between total deposit and total investment.

b) There is high degree positive correlation between total deposit and total investment on share and debenture.

c) There is low degree of positive correlation between total deposit and Investment on government securities.

d) The correlation between total deposit and net profit is positively correlated and value of correlation is definitely significant.

CAPTER –V

SUMMARY, CONCLUSION & RECOMMEDNATION

This chapter is a summary of the study and it released some suggestive package. It contains summary, conclusion and recommendation summary is a brief introduction of whole study. Conclusions are made on the basis of the analysis of relevant data by using various financial and statistical tools. It also appears the strength, weakness, opportunities and threats of the joint venture banks. Recommendations are presented in terms of suggestion, which are prepared on the basis of findings and conclusion.

5.1 Summary

To summarize the study on portfolio management of joint venture banks follows the conventions of the methodology Nepal. First chapters includes introduction, brief profile on sample of commercial banks taken under study, significance of the study, limitation on the study and scheme of the study. Second chapter includes review of literature where theories of risk and return are included with the concept of portfolio. Third chapter makes an attempt to review the methodological aspect in brief. Similarly, in the fourth chapter, analytical exploration and manipulation of data has been presented with in the research methodology and the analyzed data are presented in suitable forms like tables and diagrams. Finally, the fifth chapter includes summary of the study, conclusion revived from the study and recommendation.

The development of country largely depends on the level of economic development. The economy of nation depends on the used of available resources in efficient way. The proper utilization of capital appreciates in wealth position of country. Banks and the financial institutions play important role in successful formulation and effective implementation of capital. Hence, the proper mobilization and utilization of available resources are important factors for economic development.

Commercial banks and financial institution are the back bone of the Nepalese economy at present. It plays vital role in capital formulation, proper utilization of collected fund, providing various type of banking services. Joint venture banks are the commercial banks formed by joining two or more enterprises. Commercial banks collect money from public by providing attractive sound interest and can earn profit by lording it in mainly in business organizations, industries, agriculture sectors etc. So, we can say the main task of commercial bank is to mobilize idle resources in productive areas by collecting it from scattered sources and generating profit.

For last few years, many commercial activities have been significantly growing up especially in the financial sector in Nepal. Basically, in the banking world, Nepal is still its infant stage although the numbers of financial institution like commercial banks, development banks, and insurance companies, co-operative societies and other have been set up with in the short period. Nepal's banking history has begun, with the establishment of Nepal bank Ltd. In1937 A.D. Since, the year 1990s, Nepal has been adopting liberal policy, invite private sector (both domestic and foreign) in order to bring healthy competition in the financial sector. The number of commercial banks has been increasing since then,

Successfully formulation of investment policy and its proper utilization or implementation is the prime requisite for the development of the performance of banks and other financial institution. Good investment policy has positive impact

on economic development of the country and vise versa. Investment portfolio is none such tool that helps for proper utilization of resources. Portfolio theory deals with the selection an optimal portfolio that is portfolio provides the highest possible return for any specified return. Banks should accept that type of securities which are commercial, durable, marketable, stable, transferable and high market prices. A bank should not put all the eggs on the same basket i.e. to minimize risk, a bank must diversify its investment pm different securities. At present commercial banks and the financial institutions are the backbones of the Nepalese economy.

Three joint venture banks are taken as reference to analyze the risk, return and investment portfolio analysis. During the research work, a brief review of literature has been conducted. As this research is related to the investment portfolio, financial strength and weakness of the joint venture banks have been measured on the basis of balance sheet and profit and loss a/c. In that course, different tools have been used. More over, the various textbooks and the published journals have been reviewed. For analyzing and statistical tools like arithmetic mea, coefficient of variation, coefficient of correlation probable errors have been extensively used. Tools, graphs and diagrams are used to present the data and result; secondary data are collected from the related banks.

As per risk and return analysis, return on government securities is low but it has also lower risk. Similarly loan and advances give more return than government securities but it has also higher risk than government securities. With respect to ratio analysis different ratios related to investment portfolio have been used. SCBNL utilized the overall resources efficiently than HBL and Everest Bank. SCBNL is more successful in utilizing its resources than HBL and Everest Bank. The joint venture banks are not successful to mobilize their resources in the filed of shares and debenture. They invested very nominal percentage of total outside investment on share and debenture of other companies. As per trend analysis, total investment, investment on loan and advances, investment on share and debenture are also in increasing but the increasing ratio of net profit is not satisfactory, as per correlation between total deposits and total investment, total deposit and individual

assets, total deposits and total investment, total deposit and individual assets, total deposits and Net Profit highly correlated and the correlation is significant level.

5.2 Conclusion:

As per analysis and interpretation of data, the following conclusions have been derived.

i) Risk and Return Analysis

a) In general assumption, there is little risk on investment on government securities. It is proved by the analysis that low risk on investment on government securities. From the analysis, the average return on government securities is 4.23% and coefficient of variation (CV) is 0.2052 which CV is greater than other securities. Proper investment on various securities such as T-bills, National saving bonds, development bonds etc. help to reduce the variability of return. Comparing between three joint venture banks HBL, SCBNL and Everest Bank, HBL has more return than SCBNL and Everest Bank from investment on government securities.

b) The average return on loan advances is greater than return on government securities and CV of loan advances is lower than the CV of government securities. The return on loan advances has not fixed trend. It is clear that from trend of loan and advances.

c) The correlation between return on government securities and total deposits is low degree of positive correlation i.e. Rgl = 0.1533

d) The portfolio return is increasing every year i.e. 1.54%, 1.78%, 2.04%, and 2.64% in 2005/06 to 2008/09 receptively and decrease in year 2009/2010 i.e. 2.20% .

According to risk and return analysis, the investment made much better in loan and advances but there is slightly high risk than government securities. Government securities also better investment securities because it is low risk assets. There are better opportunities for the JVBs to reduce total risk at

minimum level and increase profit at higher level by utilizing the negative correlation coefficient between investment assets.

ii) Analysis of Ratio:

By considering analysis of ratio, both joint venture banks HBL, SCBNL and Everest Bank are more interested to invest in the field of loan and advances. The study shows that there is high range made on investment on different types of assets like loan and advances, government securities and share and debenture.

a) Total investment to total deposit ratio is in fluctuating trend throughout the review period. Out of three JVBs, SCBNL is more successful in utilizing its deposits on investment.
b) SCBNL is the bank that mobilizes its total deposits more effectively on government securities than HBL and Everest Bank but mobilization of investment on share and debenture of SCBNL and Everest Bank are poor than HBL.
c) Return on total assets ratio of HBL and Everest Bank is poor than SCBNL. It means that the profitability position of HBL and Everest Bank is poor than SCBNL.
d) All three JVBs give first priority to invest their resources on loan and advances, so they invest highest part of total outside investment on loan and advances. They give second priority to government securities and least priority to share and debenture.

iii) Least square Linear Trend Analysis:

The trend analysis show that total deposit, total investment and net profit is in increasing trend but increasing trend is not satisfactory. It can conclude that JVBs are not mobilized total deposit on different types of investment assets as per investment portfolio concept.

The investment case is very sensitive part for anyone. So investment plan is challenging matter for joint venture banks. Planning of investment is the important part of going to success of joint venture banks. To successful formulation and effective implementation of investment policy is the prime requisite for the god performance of JVBs. Investment portfolio helps to reduce risk and to increase return. As per finding JVBs are failed to balancing investment on various types of assets.

On the final conclusion, it can be concluded that SCBNL is little more successful bank than HBL and Everest Bank. All three banks show better performance in mobilization funds.

5.3 Recommendation:

On the basis of the analysis, finding and conclusions, the following recommendation can be forwarding to overage weakness, inefficiency and improve the present fund mobilization and investment of Nepalese joint venture banks.

a) The high return on total assets on SCBNL than HBL and Everest Bank should be maintained in future also. The lowest investment on share and debenture and also on loan and advances shows that the banks are reducing risk. So it is recommended to SCBNL to increasing the investment on loan and advances and share and debenture of other companies.

b) The highest return on loan and advances of Everest Bank than HBL and SCBNL should be maintained in future also. Almost ratios show that the bank should risk in investment position by searching profitable area. It is also suggested that Everest Bank should utilize the fund more effectively by investing on government securities and share and debenture of other companies.

c) From the analysis, it is cleared that JVBs are not effectively utilize portfolio management concept. Risk minimization is not possible by holding only one asset or by investing funds in only one area. The research shows that joint venture banks are not successful to invest their funds on various assets. The negative correlation between government securities and low and advances is helped to reduce the portfolio risk.

d) Due to the lack of investment portfolio concept, mostly banks are interested to invest their funds in liquid able, securable and less risky assets. Generally high risky assets give more profit and low risky assets give less profit. Hence, JVBs can generate handsome profit with lower risk by portfolio diversification.

e) From the study, both joint venture banks are more interested to invest on loan and advances and then government securities. Both of them invest very low portion on share and debenture. So, it is suggested to them to give some excess priority to investment on share and debenture.

f) Portfolio condition of the banks should be regularly revised from time or it should be upgrading as per environment. It should always try to maintain the equilibrium in the portfolio condition of the bank.

g) Finally, it is also recommended to the all three JVBs, it needs to identity the new investment sectors and make efficient investment in the various sections. So, the existing return to shareholders will be increase.

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APPENDIX

ANNEXURE-'A'

Calculation of Total Investment to total Deposit Ratio

(Rs. In million)

Fiscal Year	Standard Chartered Bank			Himalayan Bank			Everest Bank		
	Total Investment	Total deposit	Ratio	Total Investment	Total deposit	Ratio	Total Investment	Total deposit	Ratio
2005/06	12847.535	23061.032	55.71	10889.031	26490.852	41.10	4200.515	13802.445	30.43
2006/07	13553.233	24647.021	54.99	11822.985	30048.418	39.35	4984.315	18186.253	27.41
2007/08	13902.819	29743.998	46.74	13340.177	31842.789	41.89	5059.557	23976.298	21.10
2008/09	20236.121	35350.824	57.24	8710.691	34682.307	25.12	5948.480	33322.946	17.85
2009/10	19847.511	35182.721	56.41	8444.910	37611.202	22.45	5008.307	36932.310	13.56

Joint Venture Banks.

Fiscal Year	Total Investment	Total Deposit	Ratio
2005/06	27937.081	63354.329	44.10
2006/07	30360.533	72881.692	41.66
2007/08	32302.553	85563.085	37.75
2008/09	34895.292	103356.077	33.76
2009/10	33300.728	109726.233	30.35

ANNEXURE –'B'

Calculation of Investment on government securities to total deposit

Standard Chartered **(**Rs in million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2005/06	8644.855	23061.032	37.49
2006/07	7107.937	24647.021	28.84
2007/08	8137.615	29743.998	27.36
2008/09	9998.753	35350.824	28.28
2009/10	8531.519	35182.721	24.25

Himalayan Bank Rs in miliion

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2005/06	5133.211	26490.852	19.38
2006/07	6454.873	30048.418	21.48
2007/08	7471.668	31842.789	23.46
2008/09	4212.300	34682.307	12.15
2009/10	4465.372	37611.202	11.87

Everest Bank

Fiscal year	Total investment on Government securities	Total deposit	Ratio
2005/06	3548.617	13802.445	25.71
2006/07	4704.632	18186.253	25.89
2007/08	4821.605	23976.298	20.11
2008/09	5146.046	33322.946	15.44
2009/10	4354.353	36932.310	11.79

Joint Venture banks (Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2005/06	17326.683	63354.329	27.35
2006/07	18267.442	72881.692	25.06
2007/08	20430.888	85563.085	23.88
2008/09	19357.099	103356.077	18.73
2009/10	17351.244	109726.233	15.81

ANNEXURE – 'C'

Calculation of share and debenture to total deposit

Himalayan Bank (Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2005/06	39.908	26490.852	0.15
2006/07	73.434	30048.418	0.24
2007/08	89.558	31842.789	0.81
2008/09	93.883	34682.307	0.27
2009/10	78.882	37611.202	0.21

Standard Chartered (Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2005/06	15.343	23061.032	0.07
2006/07	44.943	24647.021	0.18
2007/08	114.536	29743.998	0.39
2008/09	115.418	35350.824	0.33
2009/10	115.418	35182.721	0.33

Everest Bank (Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2005/06	19.082	13802.445	0.14
2006/07	19.082	18186.253	0.10
2007/08	99.552	23976.298	0.42
2008/09	100.435	33322.946	0.30
2009/10	100.435	36932.310	0.27

Joint Venture banks (Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2005/06	74.333	63354.329	0.12
2006/07	137.459	72881.692	0.19
2007/08	303.646	85563.085	0.35
2008/09	309.736	103356.077	0.30
2009/10	294.735	109726.233	0.27

ANNEXURE –'D'

Calculation of net profit to total deposit ratio

Himalayan Bank (Rs. In million)

Fiscal year	NPAT	Total deposit	Ratio
2005/06	457.458	26490.852	1.73
2006/07	491.823	30048.418	1.64
2007/08	635.868	31842.789	1.99
2008/09	752.835	34682.307	2.17
2009/10	508.798	37611.202	1.35

Standard Chartered Bank (Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2005/06	658.756	23061.032	2.86
2006/07	691.668	24647.021	2.81
2007/08	818.921	29743.998	2.75
2008/09	1025.115	35350.824	2.90
2009/10	1085.872	35182.721	3.09

Everest Bank (Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2005/06	168.215	13802.445	1.22
2006/07	296.409	18186.253	1.63
2007/08	451.219	23976.298	1.88
2008/09	638.733	33322.946	1.92
2009/10	831.766	36932.310	2.25

Joint Venture banks

(Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2005/06	1284.429	63354.329	2.03
2006/07	1479.900	72881.692	2.03
2007/08	1906.008	85563.085	2.23
2008/09	2416.683	103356.077	2.34
2009/10	2426.436	109726.233	2.21

ANNEXURE –'E'

Calculation of Return on to Total Assets

Himalayan Bank (Rs. In million)

Fiscal year	NPAT	Total Assets	Ratio
2005/06	457.458	29460..389	1.55
2006/07	491.823	33519.141	1.47
2007/08	635.868	36175.532	1.76
2008/09	752.835	39330.132	1.91
2009/10	508.798	42717.125	1.19

Standard Chartered (Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2005/06	658.756	25776.332	2.56
2006/07	691.668	28596.689	2.42
2007/08	818.921	33335.788	2.46
2008/09	1025.115	40066.571	2.56
2009/10	1085.872	40213.320	2.70

Everest Bank (Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2005/06	168.215	15959.285	1.05
2006/07	296.409	21432.574	1.38
2007/08	451.219	27149.343	1.66
2008/09	638.733	36916.848	1.73
2009/10	831.766	41382.761	2.01

Joint Venture banks (Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2005/06	1284.429	71196.006	1.80
2006/07	1479.900	83548.404	1.77
2007/08	1906.008	96660.663	1.97
2008/09	2416.683	116313.551	2.08
2009/10	2426.436	124313.206	1.95

ANNEXURE –'F'

Calculation of Cash and bank balances to total deposit

Himalayan Bank (Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2005/06	1717.352	26490.852	6.48
2006/07	1757.341	30048.418	5.85
2007/08	1448.143	31842.789	4.55
2008/09	3048.527	34682.307	8.79
2009/10	3866.491	37611.202	10.28

SCBNL (Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2005/06	1276.241	23061.032	5.53
2006/07	2021.021	24647.021	8.20
2007/08	2050.243	29743.998	6.89
2008/09	3137.164	35350.824	8.87
2009/10	1929.307	35182.721	5.48

Everest Bank (Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2005/06	1552.967	13802.445	11.25
2006/07	2391.421	18186.253	13.15
2007/08	2667.972	23976.298	11.13
2008/09	6164.371	33322.946	18.50
2009/10	7818.815	36932.310	21.17

Joint Venture banks

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2005/06	4546.56	63354.329	7.18
2006/07	6169.783	72881.692	8.47
2007/08	6166.358	85563.085	7.21
2008/09	12350.062	103356.077	11.95
2009/10	13614.613	109726.233	12.41

ANNEXURE –'G'

Investment on Government Securities Total outside Investment Ratio

Himalayan

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2005/06	5133.211	25531.59	20.11
2006/07	6454.873	28820.982	22.40
2007/08	7471.668	32837.697	22.75
2008/09	4212.300	33503.846	12.57
2009/10	4465.372	36425.539	12.26

Standard Chartered

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2005/06	8644.855	21782.954	39.69
2006/07	7107.937	24055.87	29.55
2007/08	8137.615	27621.416	29.46
2008/09	9998.753	33915.878	29.48
2009/10	8531.519	35804.466	23.83

Everest Bank

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2005/06	3548.617	14001.823	25.34
2006/07	4704.632	18648.396	25.23
2007/08	4821.605	23398.643	20.61
2008/09	5146.046	29833.154	17.25
2009/10	4354.353	32564.664	13.37

Joint Venture banks

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2005/06	17326.683	61316.367	28.26
2006/07	18267.442	71525.248	25.54
2007/08	20430.888	83857.756	24.36
2008/09	19357.099	97252.878	19.90
2009/10	17351.244	104794.669	16.56

ANNEXURE –'H'

Investment on Loan and Advance to Total outside Investment

Himalayan Bank (Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2005/06	15761.977	25531.59	61.74
2006/07	17793.724	28820.982	61.74
2007/08	20179.613	32837.697	61.45
2008/09	25519.519	33503.846	78.17
2009/10	29123.755	36425.539	79.95

SCBNL

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2005/06	8935.418	21782.954	41.02
2006/07	10502.637	24055.87	43.66
2007/08	13718.597	27621.416	49.67
2008/09	13679.757	33915.878	40.33
2009/10	15956.955	35804.466	44.57

Everest Bank

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2005/06	9801.308	14001.823	70.00
2006/07	13664.082	18648.396	73.27
2007/08	18339.086	23398.643	78.38
2008/09	23884.674	29833.154	80.06
2009/10	27556.356	32564.664	84.62

Joint Venture banks

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2005/06	34498.703	61316.367	56.26
2006/07	41960.443	71525.248	58.67
2007/08	52237.296	83857.756	62.29
2008/09	63083.95	97252.878	64.87
2009/10	72637.006	104794.669	69.31

ANNEXURE –'I'

Investment on Share and debenture to total outside investment ratio

Himalayan

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2005/06	39.908	25531.59	0.1563
2006/07	73.434	28820.982	0.2548
2007/08	89.558	32837.697	0.2727
2008/09	93.883	33503.846	0.2802
2009/10	78.882	36425.539	0.2166

SCBNL

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2005/06	15.343	21782.954	0.0704
2006/07	44.943	24055.87	0.1868
2007/08	114.536	27621.416	0.4147
2008/09	115.418	33915.878	0.3403
2009/10	115.418	35804.466	0.3224

Everest Bank

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2005/06	19.082	14001.823	0.1363
2006/07	19.082	18648.396	0.1023
2007/08	99.552	23398.643	0.4255
2008/09	100.435	29833.154	0.3367
2009/10	100.435	32564.664	0.3084

Joint Venture banks

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2005/06	74.333	61316.367	0.1212
2006/07	137.459	71525.248	0.1922
2007/08	303.646	83857.756	0.3621
2008/09	309.736	97252.878	0.3185
2009/10	294.735	104794.669	0.2812

ANNEXURE –'J.1'

Calculation of least square linear trend analysis of total deposit

(Rs. In million)

Fiscal year (t)	Total deposit of JVBs (y)	X=t-2007/08	Xy	X^2
2005/06	63354.329	-2	-126708.658	-686910.244
2006/07	72881.692	-1	-72881.692	1
2007/08	85563.085	0	0	0
2008/09	103356.077	1	103356.077	1
2009/10	109726.233	2	219452.466	4
Total	Σy =434881.416	Σx =0	Σxy =123218.193	Σx^2=10

$a = \frac{\Sigma y}{n} = \frac{434881.416}{5} = 86976.2832$

$b = \frac{\Sigma xy}{} = \frac{123218.193}{} = 12321.8193$

X^2 10

The straight line trend for total deposits of joints venture banks be y = 86976.2832+12321.8193

ANNEXURE –'J .2'

Calculation of least square linear trend analysis of total Investment

(Rs. In million)

Fiscal year (t)	Total Investment of JVBs (y)	X=t-2007/08	Xy	X^2
2005/06	27937.081	-2	-55874.162	4
2006/07	30360.533	-1	-30360.533	1
2007/08	32302.553	0	0	0
2008/09	34895.292	1	34895.292	1
2009/10	33300.728	2	66601.456	4
Total	Σy =158796.187	Σx =0	Σxy =15262.053	Σx^2=10

$a = \frac{\Sigma y}{n} = \frac{158796.187}{5} = 31759.2374$

$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{15262.053}{10} = 1526.2053$

The straight line trend for total investment of joints venture banks be

Yc = 31759.2374 +1526.2053X

ANNEXURE –'J.3'

Calculation of Least square linear trend analysis of investment on loan and Advances

(Rs. In million)

Fiscal year (t)	Loan & Advances of JVBs (y)	X=t-2007/08	Xy	X^2
2005/06	34498.703	-2	-68997.406	4
2006/07	41960.443	-1	-41960.443	1
2007/08	52237.296	0	0	0
2008/09	63083.95	1	63083.95	1
2009/10	72637.006	2	145274.012	4
Total	Σy =264417.398	Σx=0	Σxy =97400.113	Σx^2=10

$a = \frac{\Sigma y}{n} = \frac{264417.398}{5} = 52883.4796$

$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{97400.113}{10} = 9740.0113$

The straight line trend for investment on loan and advances of joints venture banks be

$Yc = 52883.4796 + 9740.0113X$

ANNEXURE –'J.4'

Calculation of least square linear trend analysis of Net profit

(Rs. In million)

Fiscal year (t)	Net profit of JVBs (y)	X=t-2007/08	Xy	X^2
2005/06	1284.429	-2	-2568.858	4
2006/07	1479.900	-1	-1479.900	1
2007/08	1906.008	0	0	0
2008/09	2416.683	1	2416.683	1
2009/10	2426.436	2	4852.872	4
Total	$\Sigma y = 9513.456$	$\Sigma x = 0$	$\Sigma xy = 3220.797$	$\Sigma x^2 = 10$

$a = \frac{\Sigma y}{n} = \frac{9513.456}{5} = 1902.6912$

$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{3220.797}{10} = 322.0797$

The straight line trend for Net profit of joints venture banks be Yc = 1902.6912+ 322.0797X

ANNEXURE –'J.5'

Calculation of least square linear trend analysis of investment on government securities

(Rs. In million)

Fiscal year (t)	Investment on govt.Securities of JVBS (y)	X=t-2004	Xy	X^2
2005/06	17326.683	-2	-34653.366	4
2006/07	18267.442	-1	-18267.442	1
2007/08	20430.888	0	0	0
2008/09	19357.099	1	19357.099	4
2009/10	17351.244	2	34702.488	1
Total	$\Sigma y = 92733.266$	$\Sigma x = 0$	$\Sigma xy = 1138.689$	$\Sigma x^2 = 10$

$a = \frac{\Sigma y}{n} = = \frac{92733.266}{5} = 18546.6532$

$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{1138.689}{10} = 113.8689$

The straight line trend for investment on government securities of joints venture banks be

$Yc = 18546.6532+113.8689X$

ANNEXURE –'J.6'

Calculation of least square linear trend analysis of Investment on share and debenture

(Rs. In million)

Fiscal year (t)	Investment on share and debenture (Y)	X=t-2004	Xy	X^2
2005/06	74.333	-2	-148.666	4
2006/07	137.459	-1	-137.459	1
2007/08	303.646	0	0	0
2008/09	309.736	1	309.736	1
2009/10	294.735	2	589.47	4
Total	Σy =1119.909	$\Sigma x = 0$	$\Sigma xy = 613.081$	$\Sigma x^2 = 10$

$a = \frac{\Sigma y}{n} = = \frac{1119.909}{5} = 223.9818$

$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{613.081}{10} = 61.3081$

The straight line trend for investment on share and debenture of joints venture banks be

$Yc = 223.9818 + 61.3081X$

Standard Charted Bank Nepal Limited
Five years Financial Summary
Balance Sheet

(Rs in millions)

SN		Particulars	2005/06	2006/07	2007/08	2008/09	2009/10
Assets							
1		**Cash and bank balances**	**279.511**	**378.423**	**414.875**	**463.346**	**509.031**
2		**Balance with NRB**	**749.741**	**1613.758**	**1266.273**	**1851.133**	**819.509**
3		**Balance with Bank/**	**246.989**	**28.841**	**369.094**	**822.685**	**600.767**

		Fin.Inst.					
4		**Money at call**	**1977.271**	**1761.151**	**2197.538**	**2055.549**	**1669.460**
5		**Investment**	**12847.536**	**13553.233**	**13902.819**	**20236.121**	**19847.511**
	3.1	**Government Securities**	8644.855	7107.937	8137.615	9998.753	8531.519
	3.2	**Share and Debenture**	15.343	44.943	114.536	115.418	115.418
	3.3	**Other Investment**	4187.338	6400.353	5650.668	10121.950	11200.574
6		**Loans, Advance**	**8935.418**	**10502.637**	**13718.597**	**13679.757**	**15956.955**
7		**Fixed Assets**	**101.302**	**125.591**	**117.272**	**137.293**	**118.540**
8		**Other Assets**	**638.564**	**633.055**	**1349.319**	**820.687**	**691.547**
		Total Assets	**25776.332**	**28596.689**	**33335.788**	**40066.571**	**40213.320**

Capital and liabilities

1		**Share Capital**	**374.640**	**413.255**	**620.784**	**1397.950**	**1608.256**
2		**Reserve and Fund**	**1379.498**	**1703.098**	**1871.764**	**1654.520**	**1761.453**
3		**Loans and borrowing**		**400.000**		**300.000**	
4		**Deposit Account**	**23061.032**	**24647.021**	**29743.999**	**35350.824**	**35182.721**
5		**Billy Payable**	**55.751**	**36.168**	**87.397**	**72.942**	**89.219**
6		**Proposed & unpaid dividend**	**499.979**	**341.744**	**506.367**	**465.983**	**769.166**
7		**Income Tax Liability**		**50598**	**2.052**	**4.263**	
8		**Other Liabilities**	**405.431**	**1049.804**	**503.426**	**820.089**	**802.503**
		Total Capital +Liabilities	**25776.332**	**28596.689**	**33335.788**	**40066.571**	**40213.320**

Himalayan Bank Limited

Five years Financial Summary

Balance Sheet

(Rs in millions)

SN		**Particulars**	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**
Assets							
1		**Cash and bank balances**	**305.428**	**177.242**	**278.183**	**473.759**	**514.223**
2		**Balance with NRB**	**1096.253**	**1272.543**	**935.842**	**2328.406**	**2604.791**
3		**Balance with Bank/ Fin.Inst.**	**315.671**	**307.556**	**234.118**	**246.361**	**747.476**
4		**Money at call**	**1005.280**	**1710.024**	**518.529**	**1170.794**	**308.840**
5		**Investment**	**10889.031**	**11822.984**	**13340.177**	**8710.690**	**8444.910**

	3.1	**Government Securities**	5133.211	6454.873	7471.668	4212.300	4465.372
	3.2	**Share and Debenture**	39.908	73.434	89.558	93.883	78.882
	3.3	**Other Investment**	5715.912	5294.677	5778.951	4404.507	3900.656
6		**Loans, Advance**	**14642.559**	**16997.997**	**19497.520**	**24793.155**	**27980.629**
7		**Fixed Assets**	**540.824**	**574.060**	**726.068**	**952.196**	**1061.871**
8		**Non-Banking Assets**	**21.733**	**12.766**	**10.307**	**22.695**	
9		**Other Assets**	**643.609**	**643.968**	**634.787**	**632.074**	**1054.384**
		Total Assets	**29460.389**	**33519.141**	**36175.532**	**39330.132**	**42717.125**

Capital and liabilities

(Rs in million)

1		**Share Capital**	**772.200**	**810.810**	**1013.512**	**1600.000**	**2000.000**
2		**Reserve and Fund**	**993.976**	**1335.689**	**1499.479**	**1519.881**	**1439.205**
		Debenture and Bonds	**360.00**	**360.000**	**860.000**	**500.000**	**500.000**
3		**Borrowing**	**144.625**	**235.968**	**83.178**		
4		**Deposit Account**	**26490.852**	**30048.418**	**31842.789**	**34682.307**	**37611.202**
5		**Billy Payable**	**73.578**	**91.303**	**102.669**	**31.847**	**216.159**
6		**Proposed & unpaid dividend**	**238.409**	**130.939**	**263.076**	**162.097**	**189.474**
7		**Income Tax Liability**		**11.913**	**19.131**	**10.163**	
8		**Other Liabilities**	**386.751**	**494.099**	**491.695**	**823.837**	**761.085**
		Total Capital +Liabilities	**29460.389**	**33519.141**	**36175.532**	**39330.132**	**42717.125**

Everest Bank Limited

Five years Financial Summary

Balance Sheet

(Rs in millions)

SN		**Particulars**	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**
Assets							
1		**Cash and bank balances**	**259.348**	**534.997**	**822.989**	**944.696**	**1091.500**
2		**Balance with NRB**	**1139.515**	**1178.198**	**1080.915**	**4787.163**	**5625.114**
3		**Balance with Bank/ Fin.Inst.**	**154.105**	**678.226**	**764.068**	**432.512**	**1102.201**
4		**Money at call**	**66.960**		**346.000**		
5		**Investment**	**4200.515**	**4984.315**	**5059.557**	**5948.480**	**5008.307**
	3.1	**Government**	3548.617	4704.632	4821.605	5146.046	4354.353

		Securities					
	3.2	**Share and Debenture**	19.082	19.082	99.552	100.435	100.435
	3.3	**Other Investment**	632.816	260.663	138.400	701.999	553.519
6		**Loans, Advance**	**9801.307**	**13664.082**	**18339.085**	**23884.674**	**27556.356**
7		**Fixed Assets**	**152.090**	**170.097**	**360.512**	**427.157**	**463.094**
		Non-Banking Assets	**7.436**				
8		**Other Assets**	**178.008**	**222.660**	**376.215**	**492.166**	**536.188**
		Total Assets	**15959.285**	**21432.574**	**27149.343**	**36916.849**	**41382.761**

Capital and liabilities

(Rs in million)

1		**Share Capital**	**518.000**	**518.000**	**831.400**	**1030.467**	**1279.607**
2		**Reserve and Fund**	**444.808**	**683.515**	**1089.837**	**1173.158**	**1479.530**
		Debenture & Bonds	**300.000**	**300.000**	**300.000**	**300.000**	**300.000**
3		**Loans and borrowing**				**312.000**	**404.600**
4		**Deposit Account**	**13802.445**	**18186.253**	**23976.298**	**33322.946**	**36932.310**
5		**Billy Payable**	**15.806**	**26.776**	**49.429**	**148.656**	**145.515**
6		**Proposed & unpaid dividend**	**114.667**	**68.146**	**140.790**	**218.080**	**276.253**
7		**Income Tax Liability**		**15.278**	**41.143**	**20.522**	**(1.136)**
8		**Other Liabilities**	**763.558**	**1634.605**	**720.443**	**391.019**	**566.082**
		Total Capital +Liabilities	**15959.285**	**21432.574**	**27149.343**	**36916.849**	**41382.761**

Interest Income on and Advances of Joint venture Banks.

(Rs in million)

F.Y.	HBL	SCBNL	Everest Bank	JVBs
2005/06	1140.687	596.622	459.167	2196.476
2006/07	1242.850	665.157	584.479	2492.486
2007/08	1444.245	813.195	794.889	3052.329
2008/09	1449.887	1027.707	1019.081	3496.675
2009/10	2003.146	1265.219	1410.629	4678.994

Interest Income on government Securities of Joint Venture Banks

(Rs in million)

F.Y.	HBL	SCBNL	Everest Bank	JVBs
2005/06	172.242	355.291	97.272	624.805

2006/07	191.559	326.549	128.566	646.674
2007/08	201.310	319.606	180.219	701.135
2008/09	354.949	406.325	289.765	1051.039
2009/10	216.036	436.305	238.993	891.334

Net Profit After Tax of Joint Venture Banks

(Rs in million)

F.Y.	HBL	SCBNL	Everest Bank	JVBs
2005/06	457.458	658.756	168.215	1284.429
2006/07	491.823	691.668	296.409	1479.900
2007/08	635.868	818.921	451.219	1906.008
2008/09	752.835	1025.115	638.733	2416.683
2009/10	508.798	1085.872	831.766	2426.436