

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 1/4th 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. It is collection of securities 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.

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.

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 or 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 load 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) To highlight the objectives of selected JVBs.
- 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.
- 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 propositions 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 subsection 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 form 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.

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

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

P_j = Probability associated with return of investment

r_j = Rate of return of investment

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

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

Where, n = Total number of years

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

(i) Single 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.

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

(ii) Multi period return

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

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

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:

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

Where

\bar{r} = Arithmetic Mean return

R_1, R_2 = Single period return at time t

n = No. of observations or returns

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

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:

$$W_A = \frac{\text{Dollar amount of security 'A' bought}}{\text{Total equity investment in the portfolio}}$$

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

$$E(r_p) = W_A \times E(r_A) + W_B \times E(r_B)$$

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.

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

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 straightforward 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.

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

Where,

W_i = 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

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

(ii) If probabilities are used

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

Where,

Cov(r_i, 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.

$$P_{ij} = \frac{\text{Cov}_{ij}}{\sigma_i \sigma_j}$$

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.

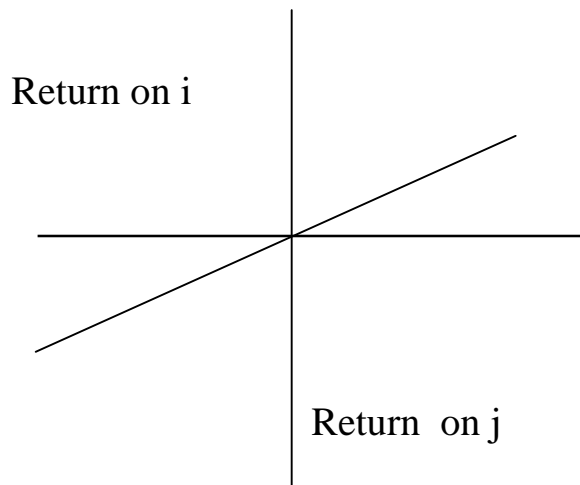
Various cases of correlation and risk condition

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

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

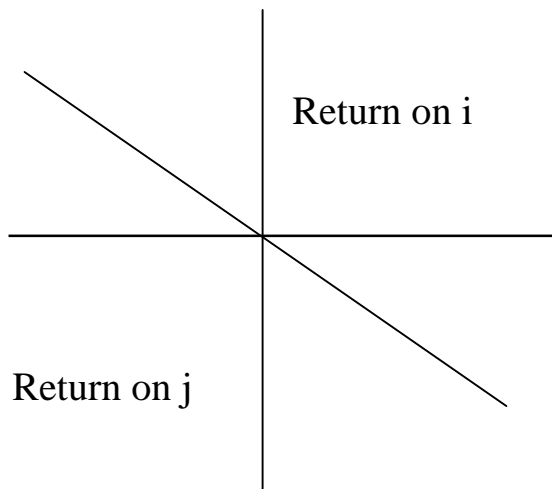


Case -2 perfect negative correlation ($\rho_{ij} = -1$)

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

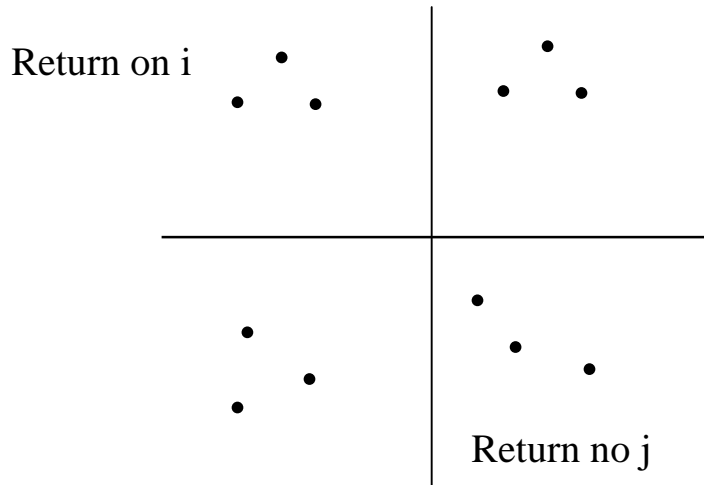


Case 3: No relationship between returns ($\rho_{ij} = 0$)

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 fit through a scatter plot of rate of return for individual risky assets and for the market portfolio of risky asset over some designated past period. It is also known as regression line. Total risk of an asset consists of systematic risk and unsystematic risk. The characteristic line is used to measure statistically 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 return for asset i during period t

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

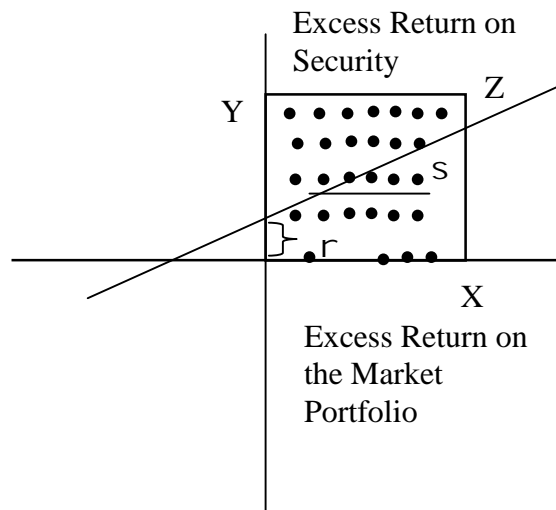
a_i = Constant term or intercept of the regression

b_i = Slope coefficient for the regression, a measure of undiversifiable 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 can 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)

$$\text{Beta coefficient } (\beta_i) = \frac{\text{Cov}(r_i, r_m)}{\sigma_m^2}$$

Where,

β_i = beta coefficient of ith assets

σ_m^2 = variance of market return

$\text{Cov}(r_i, r_m)$ = 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 eliminate 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 undiversifiable risk.

The CAPM represents the trade - off systematic risk from the returns that investors expect and are entitled 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:

$$E(r_i) = r_f + [E(r_m) - r_f] b_j$$

Where,

$E(r_i)$ = required rate of return on asset i,

r_f = risk free rate of return

$E(r_m)$ = Expected return on market portfolio,

b_i = beta or systematic risk index of asset i.

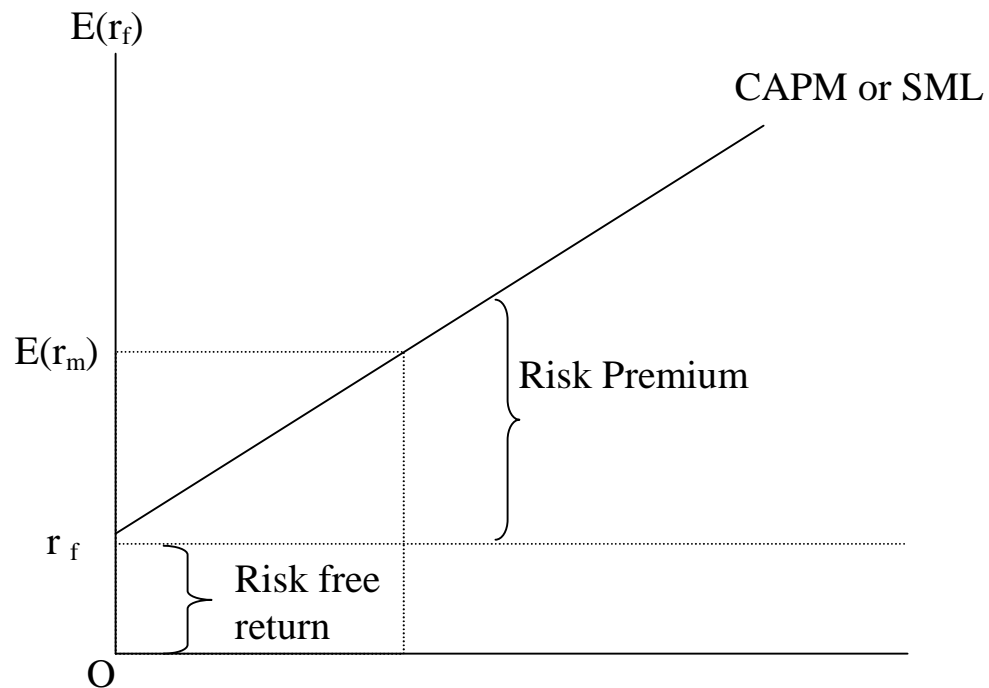
2.1.10 Security Market Line (SML)

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

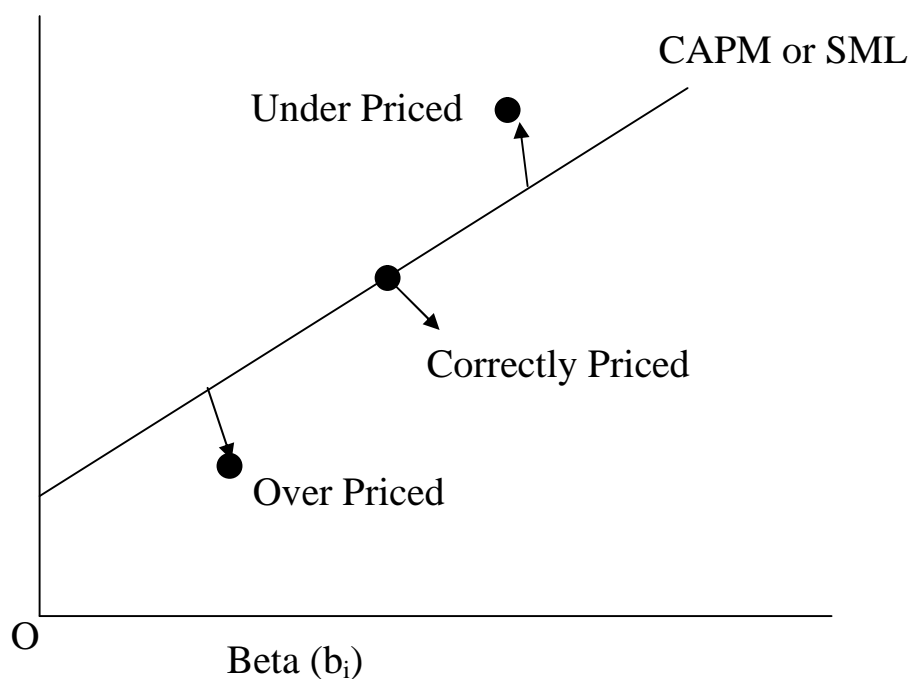
The primary concern of portfolio management is to identify the under priced and overpriced securities. Over-priced and under-priced securities are identified either by a comparison of their value with market price or a comparison of the required rate of return (return calculated by using CAPM education)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

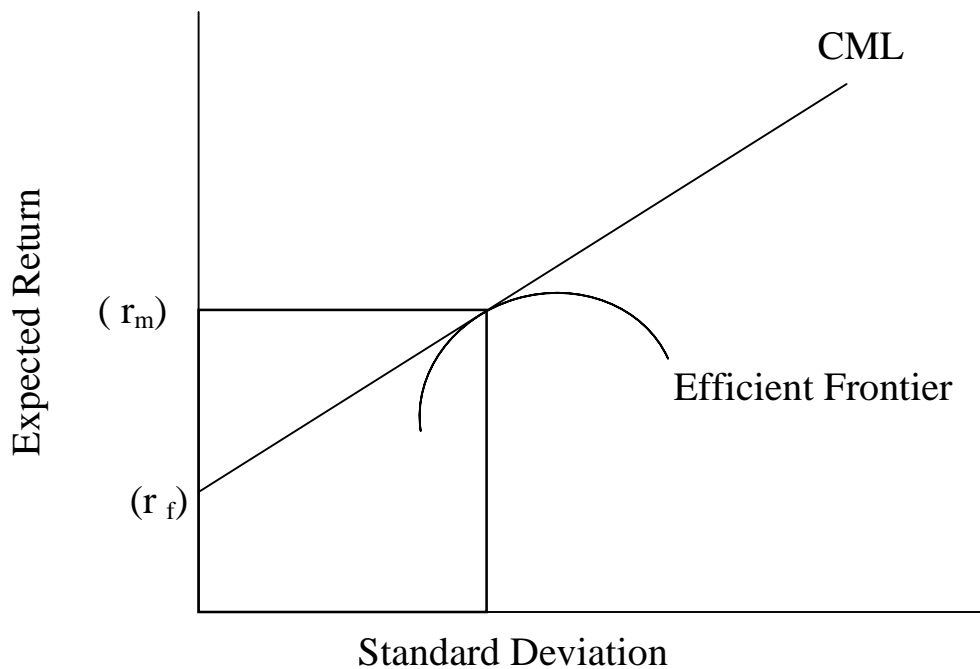
2.1.12. Capital Market Line (CML)

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 slope 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 slope of CML. This can be calculated by using the following formula.

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

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

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

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 being 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 of capital. In practice, it requires an Arbitrageur 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 basic 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 that 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:

$$E(r_i) = \}_o + \}_1 b_{i1} + \dots + \}_n b_{in}$$

Where,

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

$\}_o$ = risk free rate of return

$\}_1 \dots \}_n$ = 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 Treynor's measure is also not different from Sharpe's measure but Treynor's uses systematic risk instead of total risk to measure the performance index. Therefore, Treynor 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 the 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 are collected from primary sources in the field. The data collected from someone 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 word 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, $X_1, X_2, X_3, \dots, X_n$ denotes 'n' variate values of the random variable X, then the arithmetic mean denoted by \bar{X} is defined by the following formula.

$$\bar{X} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{n} = \frac{\sum x}{n}$$

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 $X_1, X_2, X_3, \dots, X_n$ is a set on 'n' observations then its standard deviation is given by:

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{n-1}}$$

\bar{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:

$$\text{Coefficient of Variation (C.V.)} = \frac{S.D.}{\text{Mean}} \times 100 = \frac{\dagger}{\bar{X}} \times 100$$

Where, † = Standard Deviation

$$\bar{X} = \text{Mean}$$

"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 (ρ). 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

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

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 reliability of an observed value of correlation coefficient. It is calculated to find the extent 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:

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

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.

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

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

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:

$$\text{Standard deviation}(\dagger) = \frac{\sum (r - \bar{r})^2}{n}$$

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.

$$\text{Return on portfolio } (r_p) = \sum_{i=1}^n W_i E(r_i)$$

$$\text{Or, } r_p = W_1 E(r_1) + W_2 E(r_2) + \dots + W_n E(r_n)$$

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 of the proportions invested in the components, the riskiness 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

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

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 figures expressed in mathematical term is known as financial ratio. "Ratio analysis is used to compare a firm's financial performance and status to that of other firms or to itself on time". Gitman, Lawrance, 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 ratios 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.

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

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:

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

iii) Share and Debenture to Total Deposit Ratio

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

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

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:

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

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:

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

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:

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

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.

$$\text{Investment on government securities to total outside investment} = \frac{\text{Investment on Government Securities}}{\text{Total Outside Investment}}$$

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.

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

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:

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

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 clarify 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

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

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

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

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

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

Where,

N= no of historical years (period)

Calculated of risk and return on government securities

Table No. 4.1
Risk and Return on Government Securities of HBL

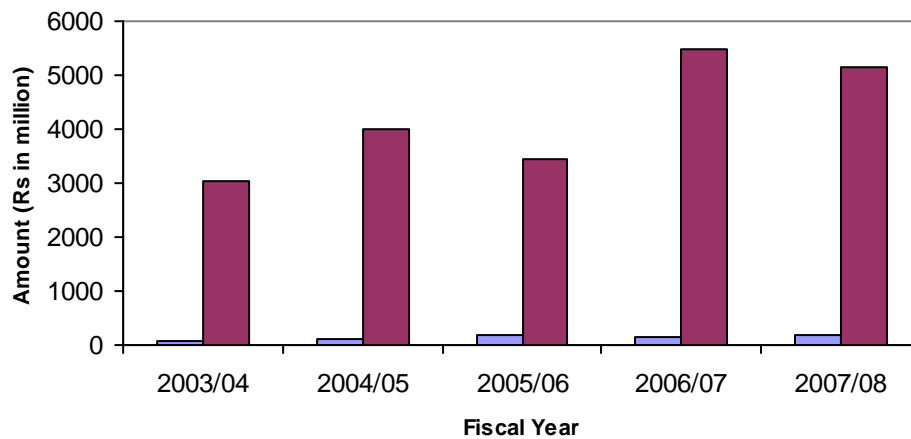
(Rs in million)

Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2003/04	79.894	3047.562	3.09
2004/05	121.544	3998.870	3.04
2005/06	170.333	3431.728	4.96
2006/07	149.131	5469.729	2.73
2007/08	172.242	5144.312	3.35
Total	693.144	21092.3	17.17
Mean			3.43
S.D.			0.80
C.V			2.33%

Sources: From Annual Report of HBL

Figure no. 4.1

Return on Government Securities of HBL



Sources : from table no. 4.1

Table no. 4.2

Risk and Return on Government Securities of SCBNL

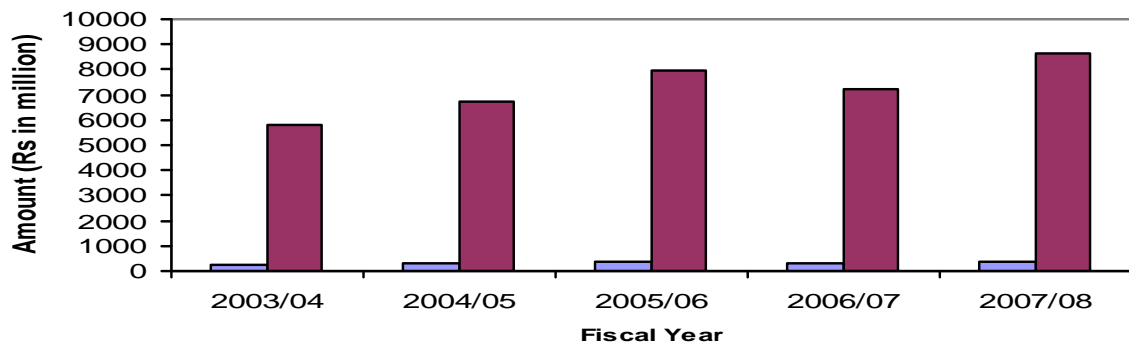
(Rs in million)

Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2003/04	264.953	5784.725	4.58
2004/05	303.544	6722.828	4.52
2005/06	380.442	7948.217	4.79
2006/07	331.633	7203.006	4.60
2007/08	355.291	8644.855	4.11
Total	1635.863	36303.631	22.60
Mean			4.52
S.D.			0.22
C.V			4.87%

Sources: From Annual Report of SCBNL

Figure no. 4.2

Return on Government Securities of SCBNL



Sources: From table no. 4.2

Table no. 4.3

Risk and Return on Government Securities of JVBs

(Rs in million)

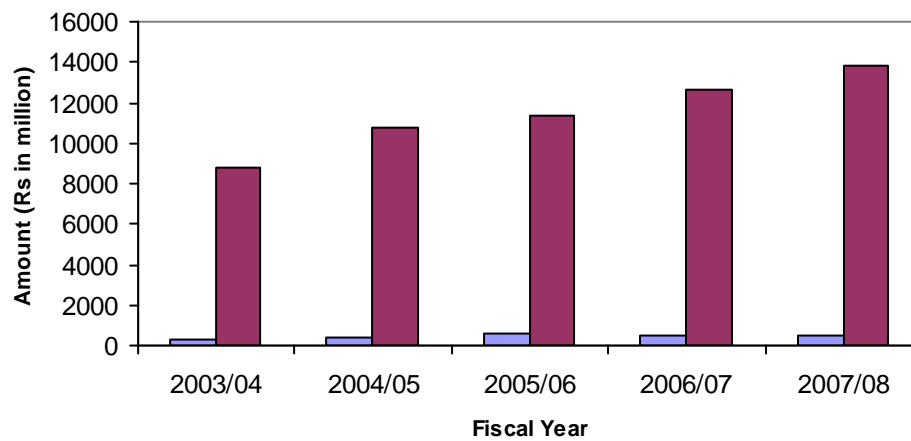
Fiscal Year	Interest Income on Govt. Securities	Investment on Govt. Securities	Return
2003/04	344.847	8832.287	3.90
2004/05	425.088	10721.698	3.96
2005/06	550.775	11379.945	4.84
2006/07	480.764	12672.794	3.79
2007/08	527.533	13789.167	3.83
Total	2329.007	56936.891	20.32
Mean			4.06
S.D.			0.39
C.V			9.61%

Sources: From Annual Report of JVBs

Sources: from table no. 4.1 and 4.2

Figure no. 4.3

Return on Government Securities of JVBs



Sources: from table no. 4.3

The table no 4.1, 4.2 and 4.3 shows the and return on government securities of HBL, SCBNL and JVBs respectively. Tables shows that return on investment on government securities has no any fixed trend. Similarly, there is no fixed trend to invest on government securities and interest income from government Securities during the study period year from 2003/04 to 2007/08. While examining the average return it is 3.43% of HBL, 4.52% of SCBNL and 4.06% of JVBs similarly the standard deviation is 0.80% of HBL, 0.22% of SCBNL and 0.39% of JVBs. Like which the C.V.is 0.12332 of HBL, 0.04867 of SCBNL and 0.0961 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.

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

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

Now, Risk on Loan and advances are denoted by

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

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

Where, N= No of historical years (period)

Table No-4.4

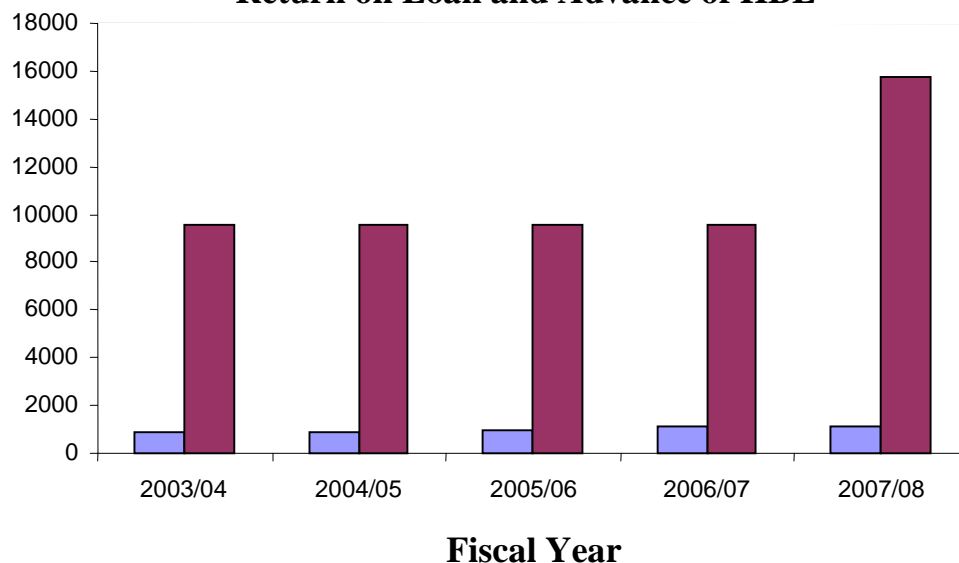
Calculation of Risk and Return on loan and Advances of HBL

Fiscal Year	Interest income on Loan & Advance	Investment of loan & Advances	Return
2003/04	853.429	9557.137	8.93
2004/05	903.839	10844.599	8.33
2005/06	970.166	12919.631	7.51
2006/07	1122.392	13451.168	8.321
2007/08	3905.72	62534.512	7.24
Total	3905.72	62534.512	32.14
Mean			8.07
S.D			0.61
C.V			7.6

Sources: From Annual Report of HBL

Figure No.4.4

Return on Loan and Advance of HBL



–Interest income on Loan & Advance ■ Investment on Loan & Advance – Return

Sources: from table No.4.4

From the above listed table No.4.4 shows the risk and return on loan and advances of Himalayan Bank limited. The return on loan and advances of HBL is in loan and an advance is increasing trend, the income received from the loan and advanced has no any fixed trend. The average return is 6.576%, the deviation is 2.22% and the coefficient of variation is 32.14%.

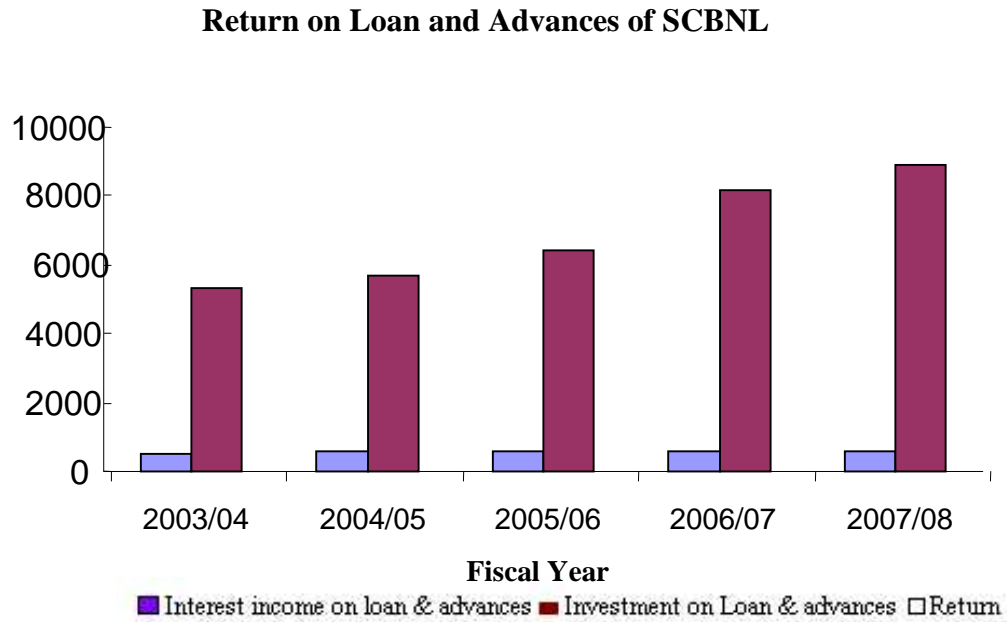
Table No.4.5

Calculation of risk and return on Loan and Advances of SCBNL

Fiscal year	Interest income on loan & Advances	Investment on Loan & Advances	Return
2003/04	540.851	5364.005	10.08
2004/05	563.506	5695.824	9.89
2005/06	558.006	6410.242	8.70
2006/07	581.664	8143.208	7.14
2007/08	596.622	8935.418	6.68
Total	2840.65	34548.70	42.49
Mean			8.50
S.D.			1.39
C.V.			16.33

Source:- From Annual Report of SCBNL

Figure No. 4.5



Sources: from table no. 4.5

From the above listed table No. 4.5 shows risk and return on loan and advances of SCBNL are in decreasing trend. Investment in 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 8.50, standard deviation is 1.39 and the C.V. is 16.33 shows the risky ness of return on Loan and Advances.

Table No.4.6

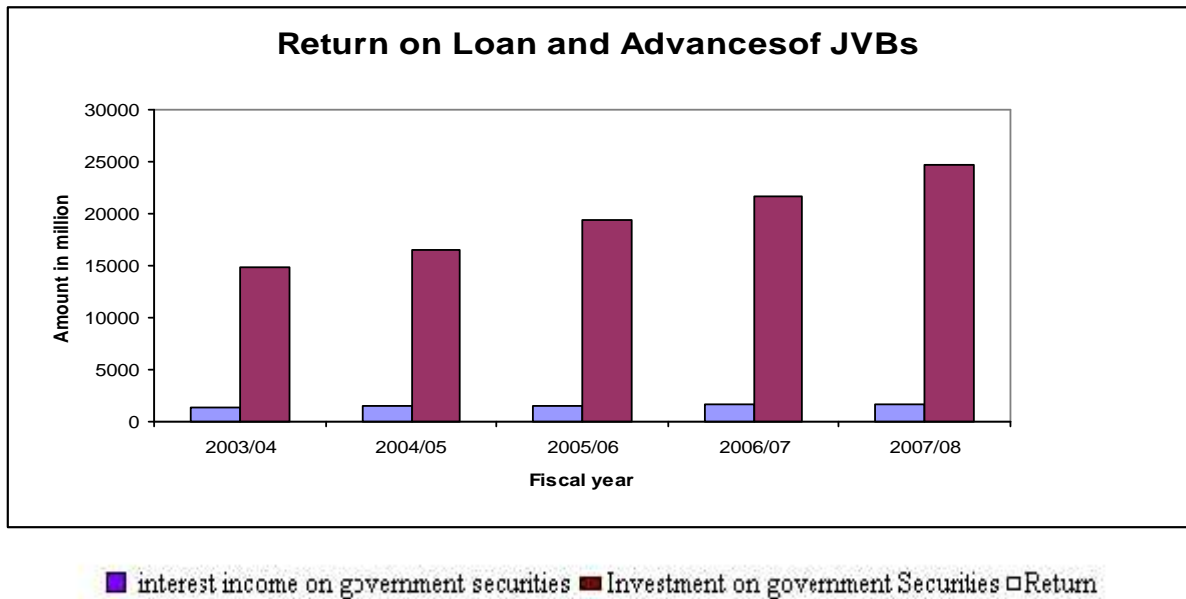
Calculation of Risk and Return on Loan and Advances of JVBS

(Rs.in Million)

Fiscal Year	Interest income on Loan & Advances	Investment on Loan & Advances	Return
2003/04	1394.25	14921.142	9.24
2004/05	1467.345	16540.423	8.87
2005/06	1528.172	19329.873	7.91
2006/07	1704.056	21593.376	7.89
2007/08	1737.309	24697.40	7.03
Total	17831.162	97082.209	40.94
Mean			8.19
S.D.			0.78
C.V.			9.58

Source: - From table No.4.4 and 4.5

Figure No 4.6.



Sources: from table no. 4.6

Here,

$$\sum r_i = 40.94 \quad \bar{r} = \frac{\sum r}{n} = \frac{40.94}{5} = 8.19$$

$$\text{S.D. } (\sigma_L) = \sqrt{\frac{\sum (r_L - \bar{r})^2}{n}} = \sqrt{\frac{3.0789}{5}} = 0.78$$

$$C.V_i = \frac{\sigma_L}{\bar{r}} = \frac{0.78}{8.19} = 9.58\% \text{ or } 0.0958$$

From the above listed the table No. 4.6 the risk return on government securities of joint venture banks in Nepal. The averages return on loan and advances is 8.19%, standard deviation is 0.78% and the coefficient of variation is 9.58%.

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. 4.7

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	57395.832	0.37	4.06%
2.	Loan & Advances	97082.209	0.63	8.19%

Here, for two assets

$$\begin{aligned} \text{Portfolio Return } (r_p) &= w_g r_g + w_l r_l \\ &= 0.37 \times 4.06\% + 0.63 \times 8.19\% \\ &= 6.66 \end{aligned}$$

: The portfolio return on Investment on Joint venture banks (r_p) = 6.66%

Table No.4.8

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)	Portfolio return
2003/04	8832.287	0.37	1492.142	0.63	9.24	3.90%	7.26
2004/05	10721.698	0.39	16540.423	0.61	8.87	3.96	6.96
2005/06	11379.945	0.37	19329.873	0.63	7.91	4.94	6.77
2006/07	12672.794	0.37	21593.376	0.63	7.89	3.79	6.37
2008/09	13789.467	0.36	24697.40	0.64	7.03	3.83	5.88
Total	57395.891		97082.214		40.94	20.32	33.24

Table No.4.9

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
2003/04	3.90	9.24	36.036	15.21	67.90
2003/04	3.96	8.87	35.125	15.68	78.86
2004/05	4.84	7.91	38.284	23.43	62.57
2005/06	3.79	7.89	29.900	14.36	62.25
2006/07	3.83	7.03	26.924	14.67	49.42
Total	20.32	4094	166.27	8335	320.82

Now

Correlation between assets G and L will be

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

$$= \frac{5 \times 166.276 - 20.32 \times 40.94}{\sqrt{5 \times 83.35 - (20.32)^2} - \sqrt{5 \times 320.82 - (40.94)^2}}$$

$$= \frac{-0.5208}{-16.6288}$$

$$= 0.031$$

Table No. 4.10
Calculation of the portfolio standard Deviation between Investment Securities

	Weight(W)	Standard
Government Securities	0.37	0.39
Land and Advances(L)	0.63	0.78

Here, Portfolio Standard deviation

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

$$= \sqrt{(0.37)^2 (0.39)^2 + (0.63)^2 (0.78)^2 + 2 \times 0.031 \times 0.39 \times 0.78 \times 0.37 \times 0.63}$$

$$= \sqrt{0.2579}$$

$$= 0.05078\%$$

$$\text{Coefficient of Variation (Cv}_p) = \frac{\sigma_p}{r_p} = \frac{0.05078}{6.66} = 7.63\%$$

- : . Portfolio return on investment of joint ventures banks (r) = 6.66%
- : . Standard deviation of portfolio on investment of joint ventures banks
 $(\sigma_p) = 0.05078\%$
- : . Coefficient of variation (CV) = 0.0763

From the above calculation, portfolio return on investment of joint venture banks is found as 6.66% and expected risk of the portfolio is found as 0.05078.

Which is considerably less than expected risk of investment on loan and advances i.e. $0.5078 < 0.78$ and more than the expected risk of investment on government securities I.e. $0.5078 > 0.39$. Return of investment on loan and advances and government securities is a low degree negatively correlated i.e. 6.66% is less than the average rate of return on investment on loan and advances i.e. $6.66 < 8.19$ but it is more than the average rate of return on interment on government securities i.e. $6.66 > 4.60$.

From the above calculation it is clear then the investment on loan and advances is more risky then 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 and SCBNL. 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:

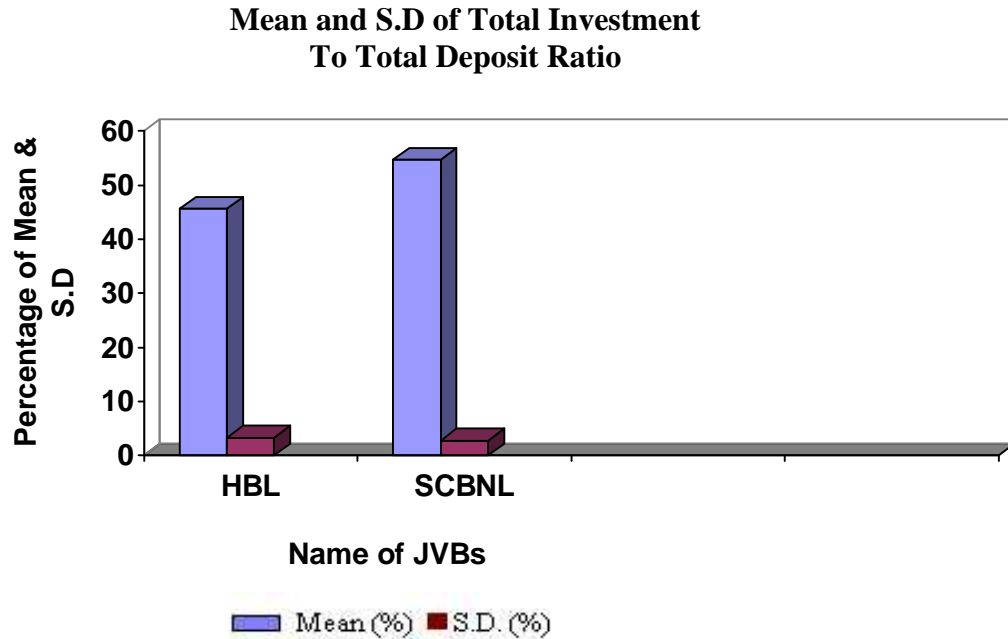
$$\frac{\text{Total Investment}}{\text{Total Deposit}}$$

Table No.4.11
Total investment to Total Deposit Ratio

Fiscal year	HBL	SCBNL	JVBS
2003/04	49.18	58.58	53.50
2004/05	48.44	55.22	51.64
2005/06	42.22	53.68	47.84
2006/07	47.12	50.11	48.43
2007/08	41.10	55.71	47.90
Mean	45.61	54.66	49.86
S.D	3.31	2.77	2.30
C.V	7.26	5.07	4.61

Sources: From annexure' A

Figure No. -4.11'



Sources: from table no.4.11

From the comparative table no.4.11 show that the ratio of total investment to total deposit of joint venture banks is in fluctuating trend through the fiscal year 2003/04 to 2005/06 but the ratio little increase in the fiscal year in 2006/07 and again it decreases in the year 2007/08. It means that the ratio is not fixed. During the study period from 2003/04 to 2005/06 between two joint venture SCBNL and HBL, SCBNL has highest ratio of investment to total deposit i.e 54.66% than the HBL i.e 45.61% on the basis of average ratio, it can be said that the SCBNL 'capacity to mobilize its deposit on investment is better than HBL.

Like wise, the coefficient of variation in the ratio of SCBNL is 5.07% and the HBL is 7.26%. The coefficient of variation of SCBNL is the C.V of HBL. It concludes that the variability of the coefficient of variation of HBL is higher than the coefficient of variation of SCBNL. It concludes that HBL 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 an 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:

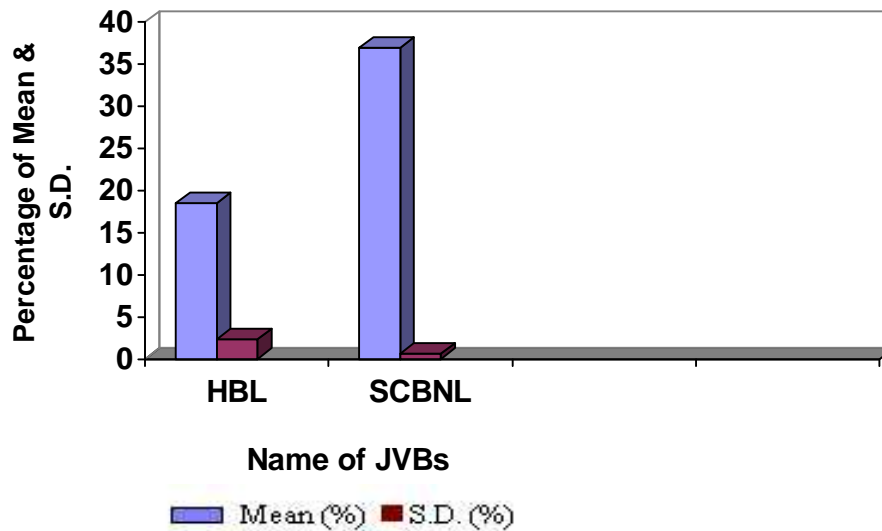
$$\frac{\text{Investment Government Securities}}{\text{Total Deposit}}$$

Table No.4.12
Government securities to total deposit ratio

Fiscal Year	HBL	SCBNL	JVBS
2003/04	16.37	36.53	25.63
2004/05	19.04	35.84	26.96
2005/06	15.59	37.56	26.36
2006/07	22.04	37.20	28.69
2007/08	19.42	37.49	27.83
Mean	18.49	36.92	27.04
S.D	2.31	0.65	1.08
C.V	12.49	17.61	3.99

Sources: from annexure 'B'

Figure no. 4.12



Sources: From table no. 4.12

From the above table no.4.12 and figure no. 4.8 it can observe 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 HBL i.e $36.92 > 18.49$ over the study period 2003/04 to 2006/07. The coefficient of

variation of SCBNL is lower than the coefficient of variation of HBL i.e 17.61>12.49 show that the ratio is more consistent than the ratio of HBL, similarly highest C.V of HBL shows 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:

Investment on share and Debenture

Total Deposit

Table No.4.13

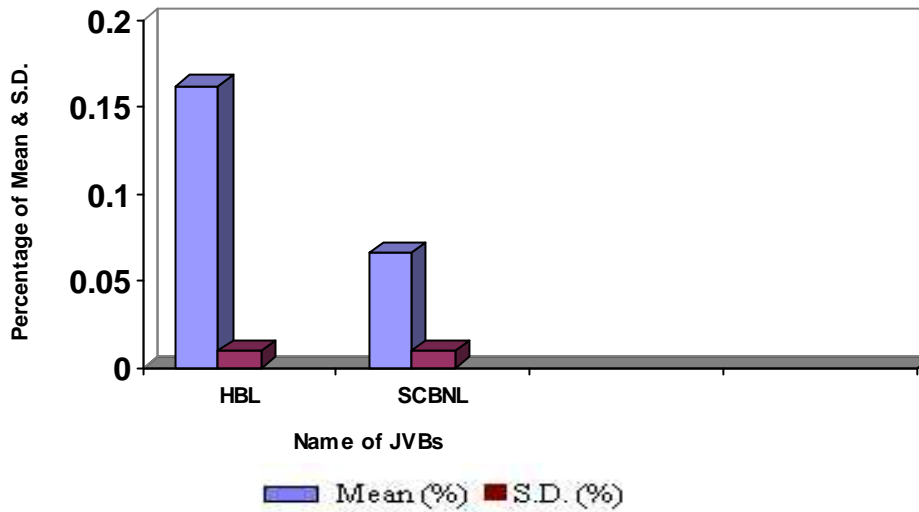
**Share and Debenture to Total Deposit Ratio
(in Percentage)**

Fiscal Year	HBL	SCBNL	JVBS
2003/04	0.18	0.07	0.13
2004/05	0.16	0.06	0.11
2005/06	0.16	0.05	0.11
2006/07	0.16	0.08	0.13
2007/08	0.15	0.07	0.11
Mean	0.162	0.066	0.118
S.D	0.010	0.010	0.010
C.V	6.17	15.15	48.88

Sources: from annexure 'C

Figure No. 4.13

Share and debenture to Total Deposit Ratio



Sources: From table no. 4.13

The comparative table listed above shows that the share and debenture to total deposit. Between two joint venture banks HBL and SCBNL, HBL has highest mean ratio of share and debenture to total deposit i.e. 0.162 than HBL. It means that HBL is more successful to utilize its deposited funds on share and debenture than SCBNL. Similarly, between these two joint venture banks HBL has lowest coefficient of variation i.e 6.17% shows that ratio is more consistent, similarly, the highest C.V. of SCBNL i.e 15.15% shows that the ratio is least uniform.

From the above calculation it can be conclude that HBL can utilize its fund on share and debenture more effectively than SCBNL.

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:

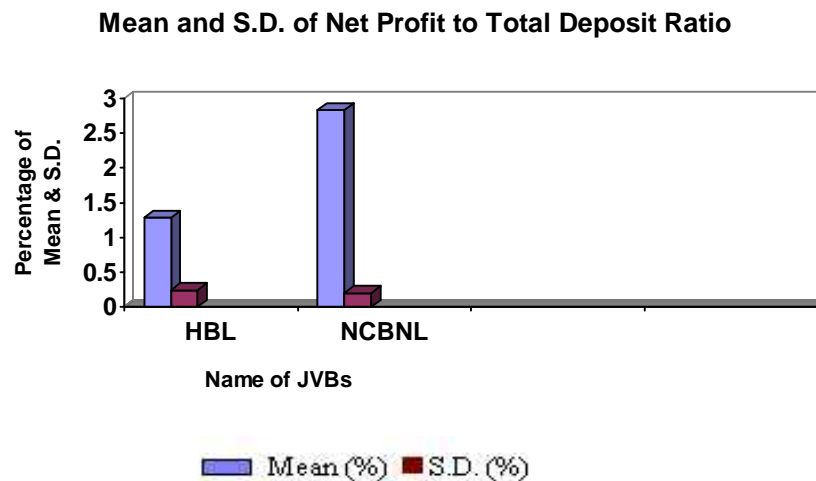
$$\frac{\text{Net profit after tax}}{\text{Total Deposit}}$$

Table no.- 4.14
Net profit to Total Deposit Ratio

Fiscal Year	HBL	SCBNL	JVBS
2003/04	1.26	3.03	2.07
2004/05	1.01	2.70	1.81
2005/06	1.20	2.54	1.86
2006/07	1.24	3.00	2.01
2007/08	1.73	2.92	2.28
Mean	1.29	2.84	2.01
S.D	0.24	0.20	0.17
C.V	18.60	7.04	8.46

Sources: from annexure 'D'

Figure no.4.14



Sources: from table no. 4.14

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 2003/04 to 2006/07. During the study period in fiscal year 2003/04

SCBNL has the highest ratio i.e. 303 and in the same fiscal year HBL has lowest ratio 1.26 the average mean ratio of SCBNL is highest i.e. 2.84 than its of HBL i.e. 1.29 it means that SCBNL is more successful to gain net profit by utilizing total deposit than HBL, similarly, the average mean ratio of HBL is lower than the mean ratio of JVBs i.e $1.29 < 2.01$ but the SCBNL has higher than JVBs i.e. $2.84 > 2.01$.

The coefficient of variation between HBL and SCBNL, SCBNL has lowest ratio i.e 7.04% means that the variability of the ratios is most consistent than HBL. Similarly, the highest C.V of HBL i.e. 18.60% shows 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 2003/04 to 2006/07

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:

Net profit after tax

Total Deposit

Table no. 4.15
Return on Total Assets Ratio

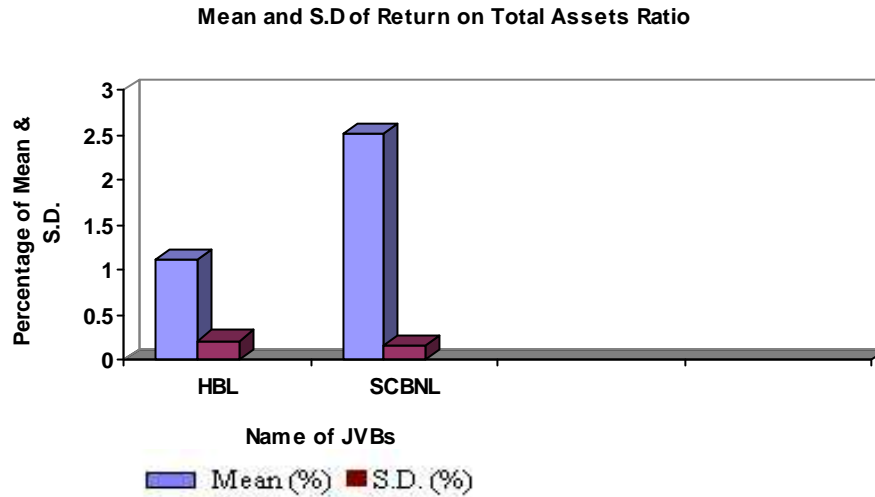
Fiscal Year	HBL	SCBNL	JVBS
2003/04	1.10	2.60	1.80
2004/05	0.88	2.41	1.59
2005/06	1.02	2.27	1.62
2006/07	1.07	2.67	1.75
2007/08	1.50	2.61	2.00
Mean	1.11	2.51	1.75
S.D	0.21	0.15	0.15
C.V	5.29	5.98	8.57

Sources: from annexure 'E'

The above listed table no.4.15 shows return on total assets ratio for the fiscal year 2003/04 to 2006/07. During the study period SCBNL has the highest ratio than HBL. While examining the mean ratio SCBNL has 2.51% and HBL has 1.11% it shows that SCBNL has highest mean ratio than HBL. Similarly the coefficient of variation of HBL and SCBNL are 5.29% and 5.98% and 5.98% respectively. The lowest C.V of HBL i.e 5.29 shows that the return of total assets of HBL is more consistent than SCBNL. The highest C.V. of SCBNL is highly variable than HBL. The high C.V. of HBL than SCBNL is due to the low return during the selective last five fiscal year.

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

Figure no. 4.15



Sources: From table no. 4.15

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:

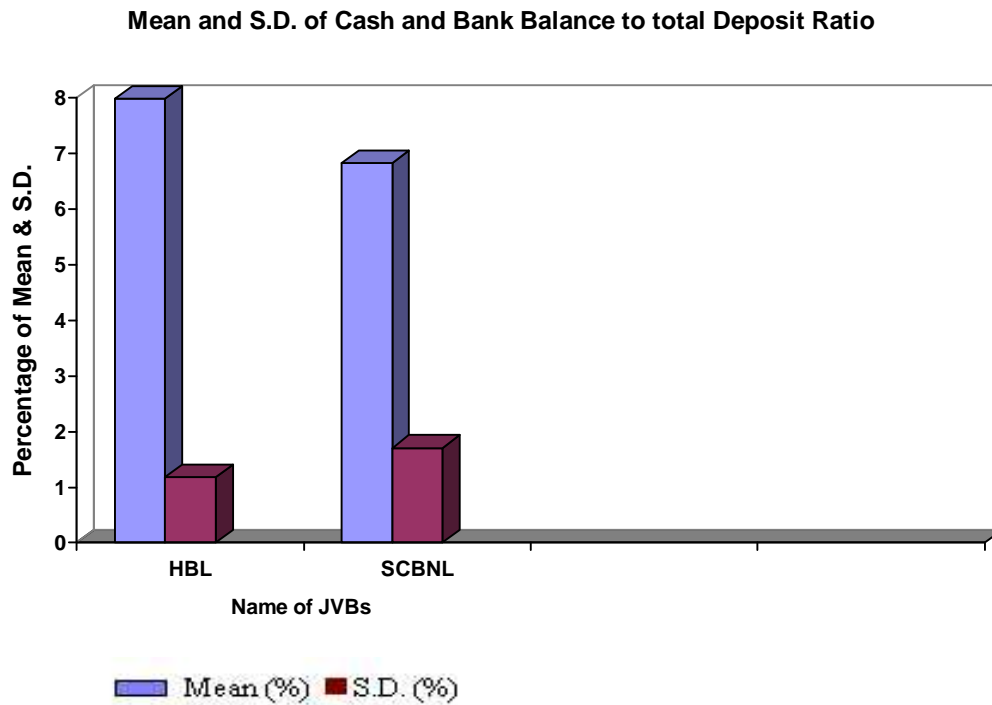
$$\frac{\text{Cash and bank balance}}{\text{Total Deposit}}$$

Table no. 4.16
Cash and Bank Balance to Total Deposit Ratio

Fiscal Year	HBL	SCBNL	JVBS
2003/04	6.79	5.21	6.07
2004/05	9.42	8.06	8.78
2005/06	9.09	9.56	9.32
2006/07	8.12	5.74	7.08
2007/08	6.48	5.53	6.04
Mean	7.98	6.82	7.46
S.D	1.18	1.70	1.36
C.V	14.79	24.93	18.23

Sources: from annexure 'F'

Figure No. 4.16



Sources: From table no.- 4.16

From the above listed table no. 4.16 shows the cash and bank balance to total deposit ratio for the fiscal year 2003/04 to 2006/07. During the study period the mean return of HBL is higher than the mean return of SCBNL i.e. $7.98 > 6.82$. Similarly the coefficient of variation of HBL is 1.18% and SCBNL is 6.82%. It shows the C.V. of HBL is lower than the C.V of SCBNL. The lower C.V. of HBL shows that the cash and bank balance to total deposit ratio of HBL is more consistent than that it is more inconsistent than HBL.

From the above analysis it can be conclude that HBL 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 funds on government securities and vice.-versa. It is computed as:

Investment on Government securities

Total Deposit

Where,

TOI = Total Investment + Loans advances and bills purchase

Table no.- 4.17

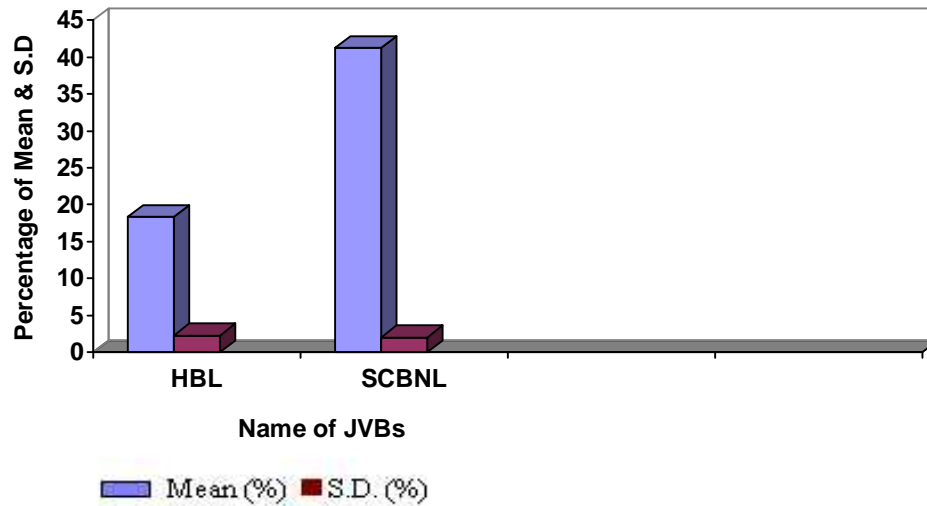
Investment on government Securities to Total outside investment Ratio

Fiscal Year	HBL	SCBNL	JVBS
2003/04	16.29	39.51	26.48
2004/05	19.02	41.88	28.92
2005/06	15.45	44.73	28.46
2006/07	21.75	40.36	29.48
2007/08	19.30	39.69	28.47
Mean	18.36	41.23	28.36
S.D	2.26	1.97	1.01
C.V	12.31	4.78	3.56

Sources: from annexure 'G'

Figure- 4.17

Mean and S.D.of investment on Government securities to Total outside Investment Ratio



Source:- From Table No.4.17

The above inside table reveals that the investment on government securities to Total outside investment of joint venture banks have mixed trend. Between two banks SBNL has invested higher amount I.e.41.23% on government securities such as treasury bills, development bounds, national saving bonds etc. Similarly, HBL has invested lower amount on government securities than SCBNL i.e. 18.36% of total outside investment.

Likewise, the coefficient of variation of SCBNL in the lower HBL i.e. $4.78 < 12.3$. this shows that the variability of the ratios between investment on government securities and total outside investment of SCBNL in most uniform than HBL.The higher ratio of HBL shows 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

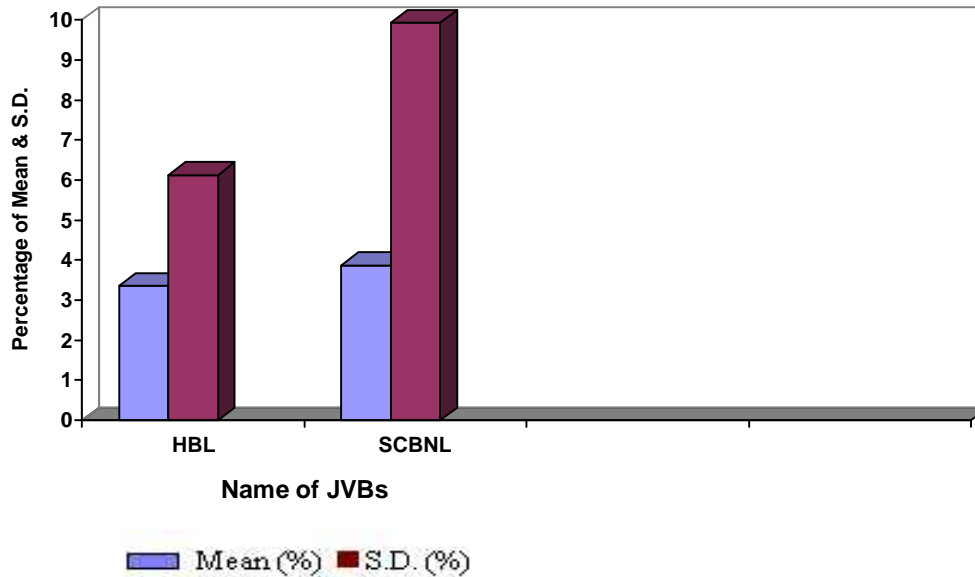
Table No. – 4.18
Investment on loan Advances to Total outside investment

Fiscal Year	HBL	SCBNL	JVBS
2003/04	51.07	36.64	44.74
2004/05	51.59	35.48	44.62
2005/06	58.17	36.07	48.35
2006/07	53.50	45.63	50.23
2007/08	59.14	41.12	50.99
Mean	3.35	3.87	2.68
S.D	6.13	9.93	5.61
C.V	12.49	17.61	3.99

Sources: from annexure 'H'

Figure No.4.18

Mean and S.D. of loan and advances to Total Outside Investment Ratio



Sources: from table no. 4.18

The above comparative table no.4.18 shows the investment on loan and advances to total outside investment ratio. Between two joint ventures bank HBL and SCBNL, HBL has highest mean ratio i.e.54.69 than SCBNL,i.e.38.99 It means that between there two joint venture banks HBL utilize highest percentage of total outside investment on loan and advances.

The coefficient of variation of HBL is lowest than that of SCBNL i.e. $6.13 < 9.99$. That predicates that the given ratio of HBL is stable or less variable than SCBNL. While C.V. of SCBNL is highest shows that the ratio of SCBNL is less stable or more variable than HBL.

From the above analysis it is cleared that the mobilization of total outside investment into loan and advances of HBL 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 no. 4.19

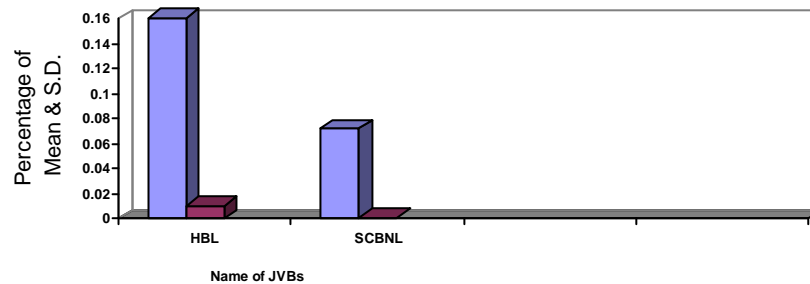
Share and Debenture to Total outside Investment Ratio

Fiscal Year	HBL	SCBNL	JVBS
2003/04	0.18	0.07	0.14
2004/05	0.16	0.07	0.12
2005/06	0.15	0.06	0.11
2006/07	0.16	0.09	0.13
2007/08	0.15	0.07	0.11
Mean	0.16	0.027	0.122
S.D	0.01	0.001	0.01
C.V	0.06	0.01	0.08

Sources: from annexure 1'

Figure No.4.19

Mean and S.D. of Investment on share and Debenture to Total Outside Investment Ratio



Sources: from table no. 4.19

■ Mean (%) ■ S.D. (%)

The above table no.4.19 reveals that the of investment on share and debenture to total outside investment for the study period 2003/04 to 2007/08.It

shows that joint ventures banks invest very low amount on share and debenture from total outside investment. Between two joint ventures banks HBL and SCBNL, HBL has highest mean ratio of share and debenture to total outside investment i.e. 0.16% than that of SCBNL i.e. 0.072%. That means between these two banks HBL utilize highest percentage of total outside investment into share and debenture.

Similarly, lowest coefficient of variation of SCBNL i.e. 0.0001 shows that the ratio of the bank is more consistent and less variable. Likewise, highest C.V. of HBL i.e. 0.01 shows that the ratio of bank is more inconsistent than SCBNL 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 investment 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:

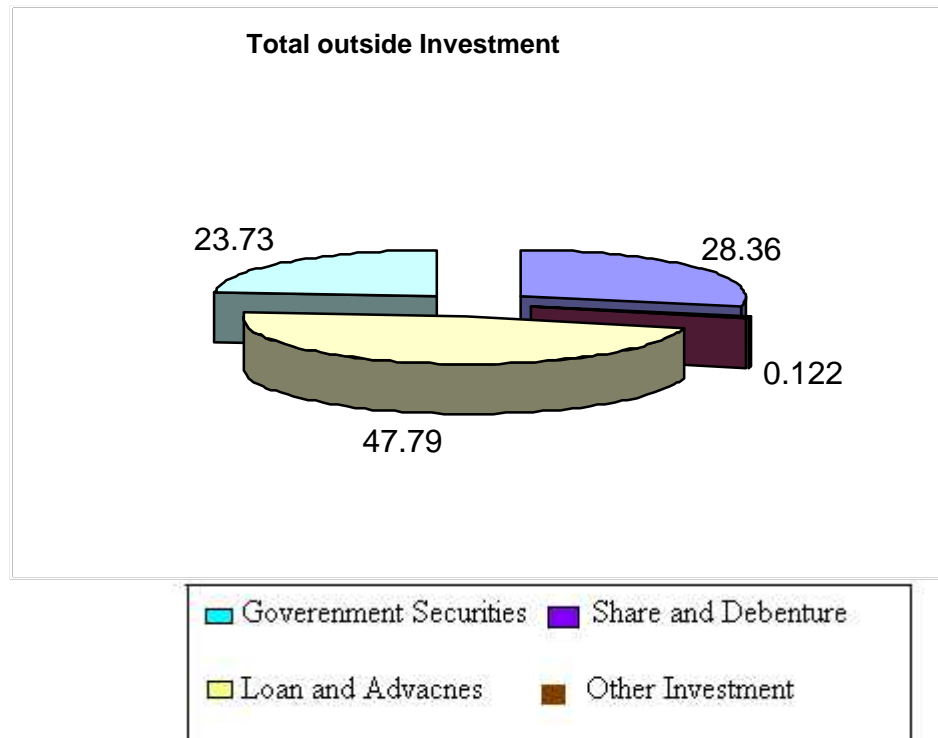
Table no. 4.20

**Total outside Investment of JVBs
Government Securities to total Deposit Ratio**

Fiscal Year	Government securities	Share and Debenture	Loan and Advances	Other Investment
2003/04	26.48	0.14	44.74	28.64
2004/05	28.92	0.12	44.62	26.34
2005/06	28.46	0.11	48.35	23.08
2006/07	29.48	0.13	50.23	20.16
2007/08	28.47	0.11	50.99	20.43
Mean	28.36	0.122	47.79	23.73
S.D	1.01	0.01	2.68	3.32
C.V	3.56	0.08	5.61	13.99

Source:- From Annexure 'G','H','I'

Figure No.4.20



Sources: From table no. 4.20

From the above no. 4.20 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 47.79% on loan and advances,23.73% on others, 28.73% on others, 28.36% on outside investment. The lowest C.V. of investment on government securities 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 (upto 2001 AD) have been analyzed and forecasted the help of analysis. There are

- Total deposits
- Total investment
- Loan and advances
- Share and Adventure
- Government Securities
- Not 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 2006) and forecast of the same for next five years. The following table shows the trend values of total deposits of joint ventures banks.

Table No.4.21

Least square linear trend Analysis of total Deposit

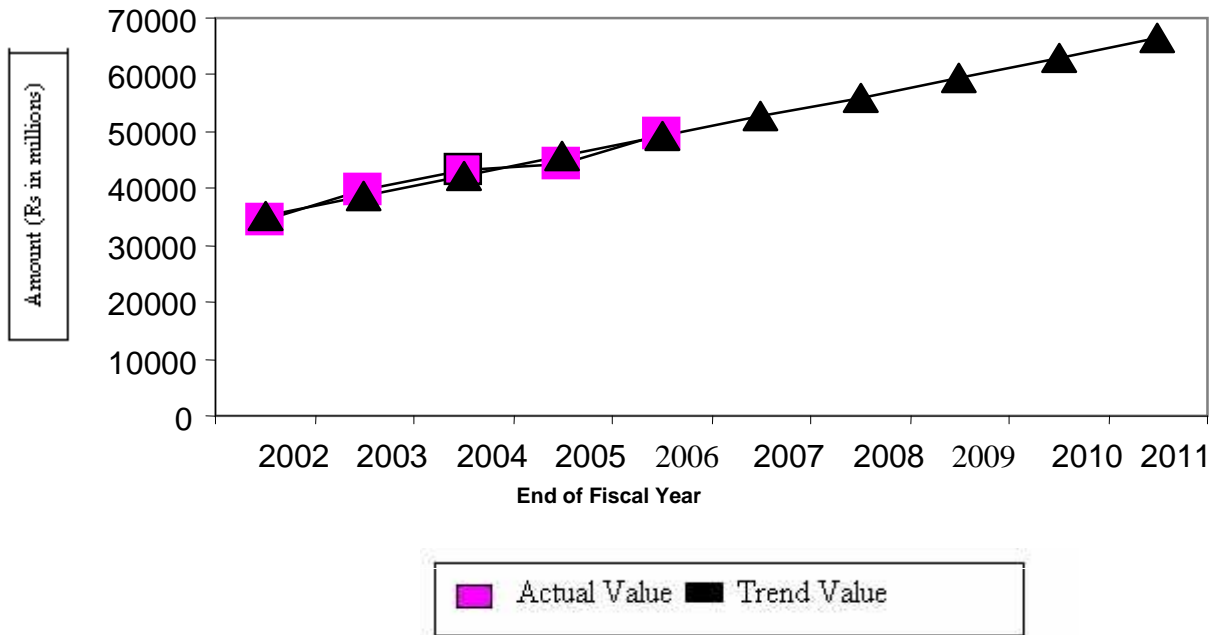
(Rs is Million)

End of fiscal year (t)	X = t-2005	Actual value	Trend value= $Y_c = 42223.855 + 3460.799x$
2002	-2	34455.122	35302.257
2003	-1	39763.014	38763.257
2004	0	43171.775	42223.654
2005	1	44177.482	45684.654
2006	2	49551.884	49145.453
2007	3		52606.252
2008	4		56067.051
2009	5		59527.051
2010	6		62988.649
2011	7		6649.448

Source :- From Annexure J.1'

Figure no. 4.21

Lease square linear trend Analysis of Table



Sources: form table no.4.21

From the above table no.4.21 shows that 'a',i.e. y- intercept and 'b' i.e.slop of the trend line of total deposits of joints venture bank are Rs.42223,855and Rs. 3460.799 millions receptively. It is also shows that the deposit of joint ventures banks is increasing by 3460.799per year. So trend equation of total deposits is

$$Y_c = 42223, 855+3460.799x$$

From the above equation forecasted total deposit for coming five years would be rs.52606.252, 56067.051, 62998.649 and 6449.448Millions 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 2007) and forecast of the same for next five years.

The following table shows the trend values of total investment of joints ventures banks.

Table No. 4.22
Least square linear trend Analysis of total Investment

(Rs is Million)

End of fiscal year (t)	X = t-2004	Actual value	Trend value =Yc = 20950+1146.89x
2002	-2	18432.991	18656.22
2003	-1	20533.114	19803.11
2004	0	43171.775	42223.654
2005	1	20652.431	20950
2006	2	23736.57	23243.78
2007	3		24390.67
2008	4		25537.56
2009	5		26684.45
2010	6		27831.34
2011	7		28978.23

Source:- From Annexure 'j.2'

From The above table no.4.22 shows that 'a' i.e. y- intercept and 'b' i.e. slop of the trend line of total deposits of joints ventures banks are Rs.20950 and Rs.20950 and Rs. 1146.89 millions respectively. From this it is clear that total investment of joint venture banks is increasing by Rs. 1146.89, million per year.

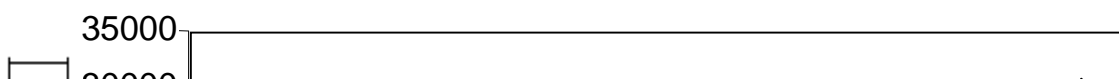
So, trend equation of the total investment is

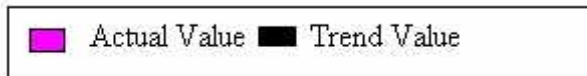
$$Y_c = 20950 + 1146.89x$$

From the above equation forecasting total deposit for coming five years would be Rs.24390.67 25537.56, 26684.45, 27831.84 and 28978.23 respectively. Following figure shows the trend and actual value of total investment of joint venture banks.

Figure No.4.22

Trend and Actual Value of Total Investment





Sources: from table no.4.22

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 joint venture banks has been analyzed for five years (up to 2066) and forecast of the same for next five years. The following table shows the trend values of investment of loan and advances.

Table no. 4.23

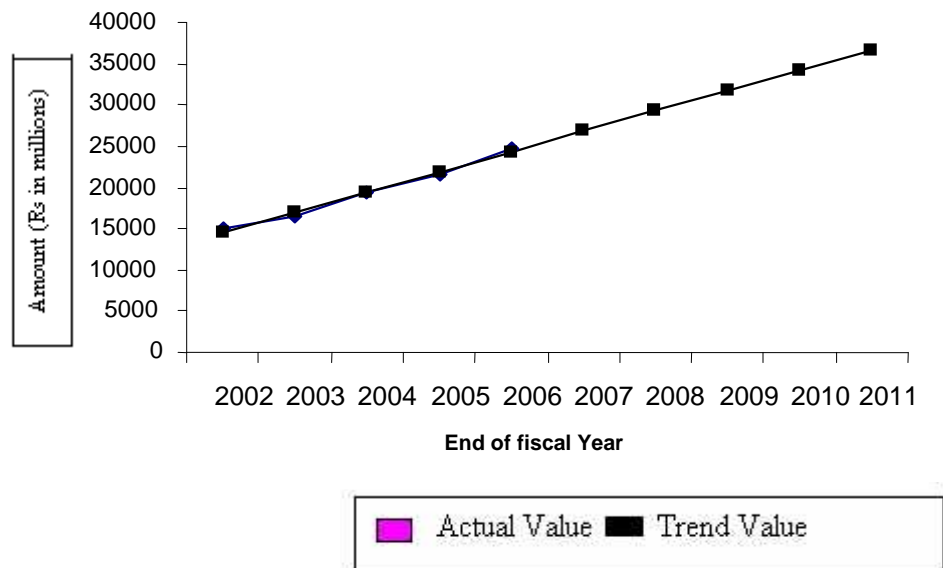
Least square linear Analysis of Investment of Loan and Advances.

End of fiscal year (t)	X = t-2004	Actual value	Trend value =Yc = 19416.44+2460.547x
2002	-2	14921.142	14495.346
2003	-1	16540.423	16955.893
2004	0	19329.873	19329.873

2005	1	21593.376	21876.987
2006	2	24697.40	24337.534
2007	3		26798.081
2008	4		29258.628
2009	5		31719.175
2010	6		34179.722
2011	7		36640.269

Source:- From Annexure 'j.3

Trend and Actual value of Loan and joint venture of banks in Nepal



Sources: from table no. 4.23

Above trend no. 4.23 shows that 'a' i.e. y- intercept and 'b' i.e. slop of the trend line of investment on loan advances of joint venture banks are Rs. 19416.44 and Rs. 2460.547 respectively. From this it is clear that investment on loan and advances of joint venture banks is increasing by 2460.547 million per year. So, trend equation of total investment is

$$Y_c = 19416.44 + 2460.547x$$

Table no. 4.24

Least square linear trend Analysis of Net Profit

End of fiscal year (t)	X = t-2004	Actual value	Trend value = Yc = 850.576+100.107x
2002	-2	7.14	650.362
2003	-1	719.064	750.469
2004	0	800.582	850.576
2005	1	888.852	950.683
2006	2	1129.857	1050.79
2007	3		1150.897
2008	4		1251.004
2009	5		1351.111
2010	6		1451.218
2011	7		1551.325

Source:- From Annexure 'j.4'

Figure No.4.25

Trend of Actual Value of net profit of JVBS in Nepal

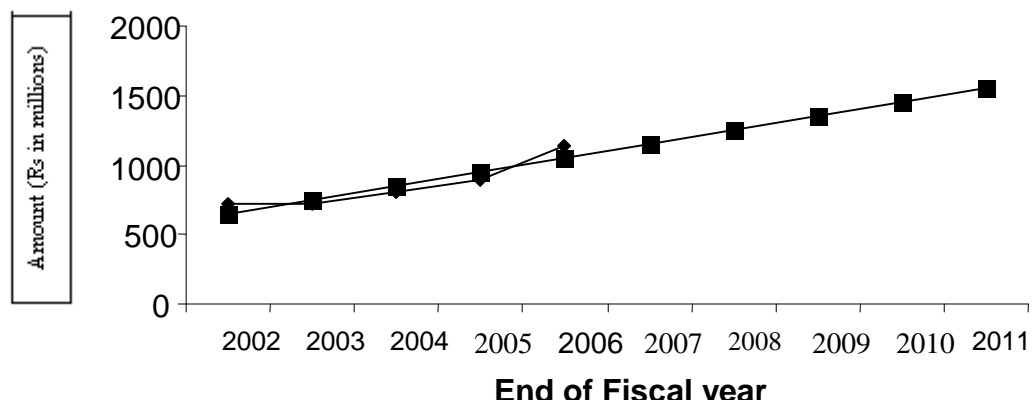


Table no. 4.24 exhibits that 'a' i.e.- intercept and 'b' i.e. slop of the trend line of net profit of joint venture banks remained Rs.850.576 and Rs. 100.107 millions respectively. During the study period, the amount of net profit revealed gradually increasing trend. On the average it is increased by Rs.100.107 million per year.

Therefore trend equation of the Net profit is

$$Y_c = 850.576 + 100.107x$$

According to above equation forecasted value of Net profit for next five years be Rs. 1150.897, 1150.897, 1351, 111, 1451.218 and 1551.328 respectively.

4.3. Least square Liner Trend Analysis of Investment on Government securities and Investment on Share and debenture.

In this section, an attempt is made to calculate the trend values of investment on government securities and share and debenture of joint venture banks. The effort has been made for five year.

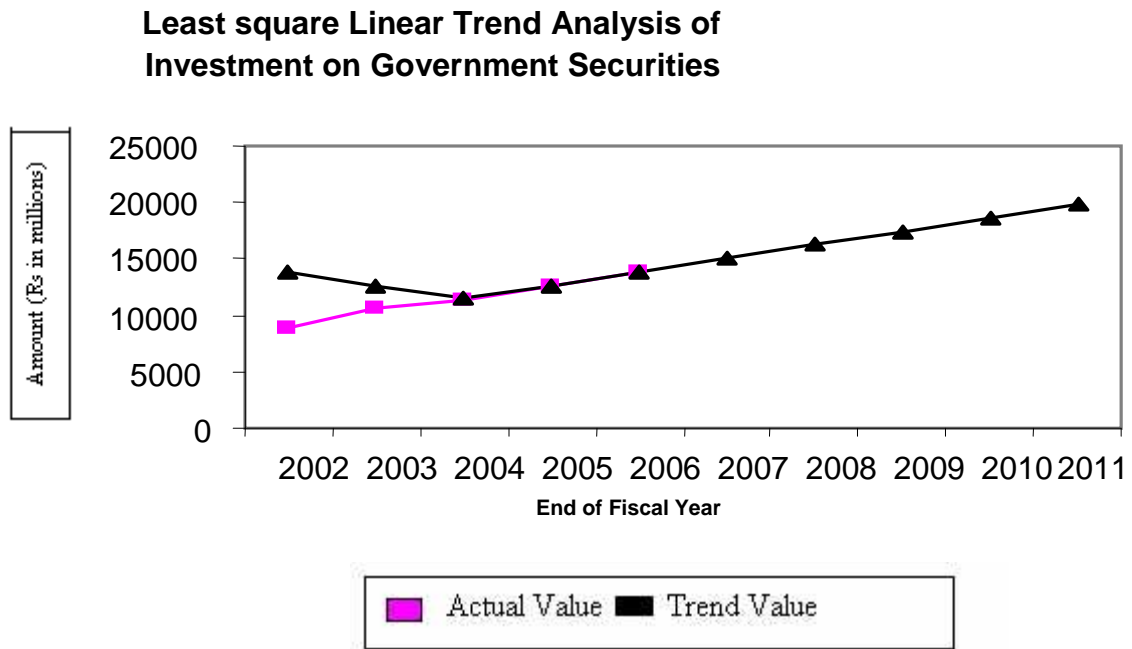
Table No. 4.25
Least square Liner Trend Analysis of Investment on Government Securitas

End of fiscal year (t)	X = t-2004	Actual value	Trend value =Yc = 11479.205+1186.441x
2002	-2	8832.479	13852.087
2003	-1	10721.698	12665.646
2004	0	11379.946	11479.205
2005	1	12672.735	12665.641
2006	2	13789.167	13852.082
2007	3		15038.523

2008	4		16224.964
2009	5		17411.405
2010	6		18597.846
2011	7		19784.287

Source:- From Annexure 'j.5'

Figure No.4.25



Sources:from table no.4.25

Table No.4.26

**Least square Liner Trend Analysis of Investment on Share and Debenture
(Rs in million)**

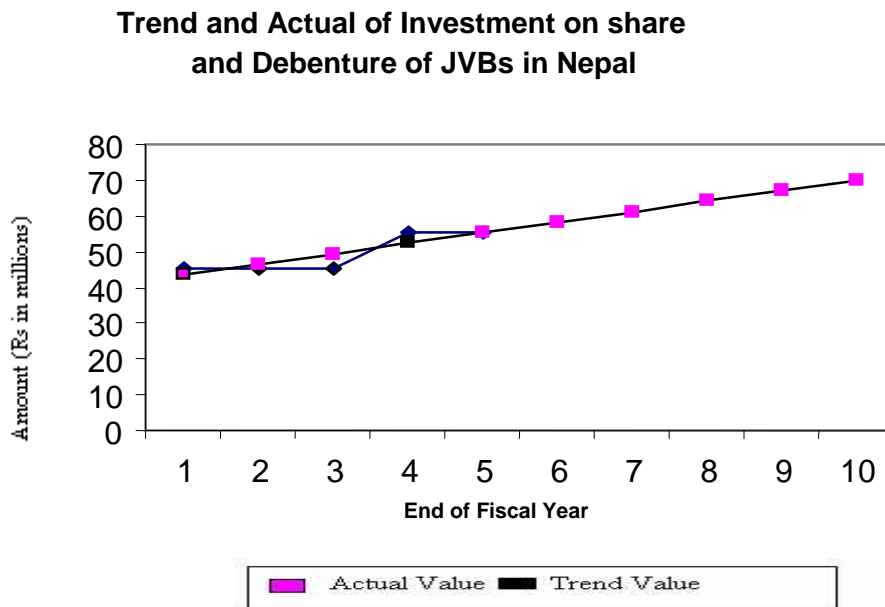
End of fiscal year (t)	X = t-2004	Actual value	Trend value =Yc = 49.377+2.937x
2002	-2	45.461	43.503
2003	-1	45.461	46.44
2004	0	45.461	49.377
2005	1	55.252	52.314
2006	2	55.252	55.251
2007	3		58.188

2008	4		61.125
2009	5		64.062
2010	6		66.999
2011	7		69.936

Source:- From table no. 4.25

From table no.4.26

Figure No.4.26



Sources: From table no.4.26

From the above table no.4.25 and 4.26 so that the investment on government securities and share debenture are in increasing trend the table no. 4.25 shows that the 'a'.i.e. y- intercept and 'b' i.e. slop of the trend line of government securities are Rs.11479.205 and Rs.1186.441 million. Similarly table No.4.26 shows that the 'a' i.e. y intercept and 'b' i.e. slop of trend line of investment on share and debenture are Rs. 49.377 and 1.937 million respectively.

So, trend equation of share and debenture

$$Y_c = 11479.205 + 1186.441x$$

Similarly, trend equation of share and debenture

$$Y_c = 49.377 + 2.937x$$

On the above equation forecasted investment on government securities for coming five years up to 2011 would be Rs. 15038.523, 16224.964, 17411.405, 18597.846 and 19784.287 millions respectively. Forecasted investment on share and debenture for coming five years up to 2011 would be Rs.58.188, 61.125, 64.062, 66.999 and 69.936 million 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

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

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

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

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

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

Interpretation of correlation coefficient.

- i. When $r = +1$, implies that two variables are positively perfectly correlated.
- ii. When $r = -1$ implies that two variables are positively 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 0.5, there are is low degree of correlation.

Probable Error

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

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

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

- i. If $r < 6 \text{ P.E. (r)}$, then value or r is not at all significant (insignificant)
- ii. If $r > 6 \text{ P.E. (r)}$, 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 No. 4.27
Correlation Analysis between Total deposit and total investment.

(Rs in million)

Fiscal year	Total Deposit	Total Investment	Xy	x ²	y ²
2003/04	34455.122	18432.991	63511.953.7	1187155432	3397755432
2004/05	39763.014	20533.114	816458499.3	1581097282	421608771
2005/06	43171.775	20652.431	891602104.3	1863802157	426522906
2006/07	44177.482	21394.895	945172588.8	1951649916	457741532
2007/08	49551.884	23736.57	116191763.00	2455389208	563424755
Total	211119.277	104750.001	4464535909	9039093995	2209073121

$$\Sigma x = 211119.277$$

$$\Sigma y = 104750.001$$

$$\Sigma xy = 4464535909$$

$$\Sigma x^2 = 9039093995$$

$$\Sigma y^2 = 2209073121$$

We get,

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

$$r = \frac{5 \times 4464535909 - 211119.277 \times 104750.001}{\sqrt{5 \times 9039093995 - (211119.277)^2} \sqrt{5 \times 2209073121 - (104750.001)^2}}$$

$$= 0.99$$

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

$$= 0.006$$

Above calculation reveals that the correlation coefficient and probable error of coefficient between total deposit and total investment on joint venture banks are 0.95 and 0.06 and respectively. Here, correlation coefficient came greater than six times the probable error i.e. $0.99 > 6 \times 0.06$. 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 No. 4.28

Correlation Analysis between Total deposit and total Loan and Advances

(Rs in million)

Fiscal year	Total Deposit (x)	Total Investment (y)	Xy	x²	y²
2003/04	34455.122	14921.142	514109768	1187155432	222640479
2004/05	39763.014	16540.423	657697071	1581097282	273585593

2005/06	43171.775	19329.873	834504928	1863802157	373643990
2006/07	44177.482	21593.376	963940980	1951649916	466273887
2007/08	49551.884	24697.40	1223802700	2455389208	609961567
Total	211119.277	97082.214	4184055447	9039093995	1946105516

$$\Sigma x = 211119.277$$

$$\Sigma y = 97082.214$$

$$\Sigma xy = 4184055447$$

$$\Sigma x^2 = 9039093995$$

$$\Sigma y^2 = 1946105516$$

We get,

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

$$r = \frac{5 \times 4184055447 - 211119.277 \times 97082.214}{\sqrt{5 \times 9039093995 - (211119.277)^2} \sqrt{5 \times 1946105516 - (97082.214)^2}}$$

$$= 0.99$$

$$\text{P.E. (r)} = 0.6745 \times \frac{[1 - (0.97)^2]}{\sqrt{5}}$$

$$= 0.018$$

Above calculation reveals shows that the correlation coefficient and probable error of coefficient between total deposit and total loan and Advances are 0.95 and 0.18 respectively. Here, correlation coefficient came greater than six times the probable error i.e. $0.99 > 6 \times 0.18$. It indicates that the correlation between total deposit and total loan and advances are positively correlation coefficient and value of correlation and value of correlation is significant.

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 venturous bands or the different sampled period have been presented below:

Table No. 4.29

Correlation Analysis between Total deposit and total Loan and Advances

Fiscal year	Total Deposit (x)	Total government Securities(y)	Xy	x²	y²
2003/04	34455.122	8832.479	304324141	1187155432	78012685
2004/05	39763.014	10721.698	426327028	1581097282	114954808
2005/06	43171.775	11379.946	491292468	1863802157	129503171
2006/07	44177.482	12672.735	559849522	1951649916	160598212
2007/08	49551.884	13789.167	683279204	2455389208	1901411620
Total	211119.277	57396.025	2405072363	9039093995	673210003

$$\Sigma x = 211119.277$$

$$\Sigma y = 57396.025$$

$$\Sigma xy = 2465072363$$

$$\Sigma x^2 = 9039093995$$

$$\Sigma y^2 = 673210003$$

We get,

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

$$r = \frac{5 \times 2465072363 - 211119.277 \times 57396.025}{\sqrt{5 \times 9039093995 - (211119.277)^2} \sqrt{5 \times 673210003 - (57396.025)^2}}$$

$$= 0.98$$

$$\text{P.E. (r)} = 0.6745 \times \frac{[1 - (0.97)^2]}{\sqrt{5}}$$

$$= 0.012$$

Above calculation shows that the correlation coefficient and probable error of coefficient between total deposit and total Investment and Government securities are 0.98 and 0.12 respectively. Here, correlation coefficient came greater than six times the probable error i.e. $0.98 > 6 \times 0.012$. It indicates that the correlation between total deposit and total government securities are positively correlation correlated and correlation at 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 No. 4.30

Correlation Analysis between Total deposit and total Loan and Advances

(Rs.in Million)

Fiscal year	Total Deposit (x)	Share and Debenture (y)	Xy	x²	y²
2003/04	34455.122	45.461	1566364.30	1187155432	2066.70
2004/05	39763.014	45.461	1807666.38	1581097282	2066.70

2005/06	43171.775	45.461	1962632.06	1863802157	2066.70
2006/07	44177.482	55.252	2440894.24	1951649916	3052.78
2007/08	49551.884	55.252	2437840.70	2455389208	3052.78
Total	211119.277	246.887	10515397.63	9039093995	12305.66

$$\Sigma x = 211119.277$$

$$\Sigma y = 246.887$$

$$\Sigma xy = 10515397.67$$

$$\Sigma x^2 = 9039093995$$

$$\Sigma y^2 = 12305.66$$

We get,

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

$$r = \frac{5 \times 10515397.67 - 211119.277 \times 246.887}{\sqrt{5 \times 9039093995 - (211119.277)^2} \sqrt{5 \times 12305.66 - (246.887)^2}}$$

$$= 0.77$$

$$\text{P.E. (r)} = 0.6745 \times \frac{[1 - (0.77)^2]}{\sqrt{5}}$$

$$= 0.012$$

Above calculation shows that the correlation coefficient and probable error of coefficient between total deposit and total Investment on share and debenture are 0.76 and 0.13 respectively. Here, correlation coefficient came greater than six times the probable error i.e. $0.77 > 0.12 \times 6$. It indicates that the

correlation between total deposit and total share and debenture are positively correlation correlated and correlation at significant.

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 No. 4.31
Correlation Analysis between Total deposit and total Net profit

(Rs.in Million)

Fiscal year	Total Deposit (x)	Net Profit (y)	Xy	x²	y²
2003/04	34455.122	714.23	24608881.79	1187155432	510124.49
2004/05	39763.014	719.064	28592151.9	1581097282	517053.04
2005/06	43171.775	800.452	34574202.35	1863802157	641363
2006/07	44177.482	888.878	39268391.85	1951649916	790104.10
2007/08	49551.884	1129.857	55986543	2455389208	1276576.84
Total	211119.277	4252.881	183030171	9039093995	3735222.4

$$\Sigma x = 211119.277$$

$$\Sigma y = 4252.881$$

$$\Sigma xy = 183030171$$

$$\Sigma x^2 = 9039093995$$

$$\Sigma y^2 = 3735222.4$$

We get,

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

$$r = \frac{5 \times 183030171 - 211119.277 \times 4252.881}{\sqrt{5 \times 9039093995 - (211119.277)^2} \sqrt{5 \times 3735222.4 - (4252.881)^2}}$$

$$= 0.90$$

$$\text{P.E. (r)} = 0.6745 \times \frac{[1 - (0.90)^2]}{\sqrt{5}}$$

$$= 0.057$$

Above calculation shows that the correlation coefficient and probable error of coefficient between total deposit and Net Profit are 0.90 and 0.057 respectively. Here, correlation coefficient came greater than six times the probable error i.e. $0.90 > 0.056 \times 6$. It indicates that the correlation between total deposit and total share and debenture are positively correlation correlated and correlation at significant.

4.5 Major Finding of the Study:

Based on the from 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. 4.32

Major Finding from Risk and Return Analysis

(In percentage)

S.N.	Assets	Average	Standard	Coefficient
------	--------	---------	----------	-------------

		Return(\bar{R})	Deviation	Variation (CV)
1	Government Securities	4.06%	0.39%	0.0096
2.	Loan and Advances	8.19%	0.78%	0.0958%
3.	Investment Portfolio	6.66%	0.5164%	0.0763

ii) Finding from Analysis of Ratio

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

Table No.4.33
Major Finding from analysis of Ratio

(In percentage)

S.N.	Ratios		HBL	SCBNL	JVBs
1	Total investment to total deposit ratio	Mean	45.61	54.66	49.86
		S.D.	3.31	2.77	2.20
		C.V.	7.26	5.07	4.61
2	Government securities to total deposit ratio	Mean	18.49	36.92	27.09
		S.D.	2.31	0.65	1.08
		C.V.	12.49	17.61	3.99
3	Share and debenture to total deposit ratio	Mean	0.162	0.066	0.118
		S.D.	0.010	0.010	0.010
		C.V.	6.17	50.50	8.88
4	Net profit to total deposit ratio	Mean	1.29	2.84	2.01
		S.D.	0.24	0.20	0.17
		C.V.	18.60	4.04	8.46
5	Return on total assets ratio	Mean	1.11	2.51	1.75
		S.D.	0.21	0.15	0.15
		C.V.	5.29	5.98	8.57
6	Cash and bank balance to total deposit ratio	Mean	7.98	6.82	7.46
		S.D.	1.18	1.70	1.36

		C.V.	14.79	24.93	18.23
7	Investment on government securities to total outside investment ratio	Mean	18.36	41.23	28.36
		S.D.	2.26	1.97	1.01
		C.V.	12.31	4.78	3.56
8	Loan and advances to total outside investment ratio	Mean	54.69	38.99	47.79
		S.D.	3.35	3.87	2.68
		C.V.	6.13	9.93	5.61
9	Share and debenture to total outside investment ratio	Mean	0.16	0.072	0.122
		S.D.	0.01	0.001	0.01
		C.V.	0.06	0.01	0.08

iii) Finding from least square liner trend analysis.

Table No.4.34
Major finding from least square liner trend analysis
(Rs.in million)

S.N.	Items	Slop of trend increasing (Decreasing) per year
1	Total deposit	3460.799
2	Total investment	1146.89
3	Investment on government securities	1186.441
4	Investment on share and debenture	2.937
5	Investment on loan and advances	2460.547
6	Net profit	100.107

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 high degree 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 profile 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. In 1937

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 the of performance of banks and other financial institution. Good investment policy has positive impact on economic development of the country and vice 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.

Two 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 is more successful in utilizing its resources than HBL. 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 of correlation is significant.]

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 4.06% and coefficient of variation (CV) is 0.0961 which CV is lowest 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. Companies between two joint

venture banks HBL and SCBNL has more return than HBL 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 also greater than the CV of government securities. The return on loan advances has not fixed trend. It is clear that loan and advances.
- c) The correlation between return on government securities and loan and advances is low degree native correlation i.e. $R_{gl} = 0.031$
- d) The portfolio return is decreasing every year i.e. 7.26%, 6.69%, 6.77%, 6.37%, and 5.88% in 2003/04 to 2007/08 receptively.

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 and SCBNL 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 ratio is in fluctuating trend throughout the review period. Out of two 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 but mobilization of investment on share and debenture is poor than HBL.
- c) Return on total assets ratio of HBL is poor than SCBNL. It means that the profitability position of HBL is poor than SCBNL.
- d) Both of the 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 good 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. Both 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 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 HBL than 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 HBL 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 both JVBs, it needs to identify 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	Himalayan			Standards Chartered		
	Total Investment	Total deposit	Ratio	Total Investment	Total deposit	Ratio
2003/04	9157.107	18619.375	40.18	9275.884	15835.747	58.58
2004/05	10175.435	21007.379	48.44	10357.673	18755.635	55.22
2005/06	9292.103	22010.333	42.22	11360.328	21161.442	53.68
2006/07	11692.342	24814.012	47.12	97802.553	19363.470	50.11
2007/08	10889.031	26490.852	41.10	12847.535	23061.032	55.71

Joint Venture Banks.

Fiscal Year	Total Investment	Total Deposit	Ratio
2003/04	18432.991	34455.122	53.50
2004/05	20533.114	39763.014	51.64
2005/06	20652.431	43171.775	47.84
2006/07	21394.895	44177.482	48.43
2007/08	23736.57	49551.884	47.90

ANNEXURE –'B'

Calculation of Investment on government securities to total deposit Himalayan

(Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2003/04	3047.775	18619.375	16.37
2004/05	3998.870	21007.379	19.04
2005/06	3431.729	22010.33	15.59
2006/07	5469.729	24814.012	22.04
2007/08	5144.312	26490.852	19.42

Standard Chartered

(Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2003/04	5784.724	15835.745	36.53
2004/05	6722.828	18755.635	35.84
2005/06	7948.217	21161.442	37.56
2006/07	723.006	19363.470	37.20
2007/08	8644.855	23061.032	37.49

Joint Venture banks

(Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2003/04	8832.479	34455.122	25.63
2004/05	10721.698	39763.014	26.96
2005/06	11379.946	43171.775	26.36
2006/07	12672.735	44177.482	28.69
2007/08	13789.167	49551.884	27.83

ANNEXURE – 'C'

Calculation of share and debenture to total deposit

Himalayan

(Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2003/04	34.26	18619.375	0.18
2004/05	34.266	21007.279	0.16
2005/06	34.266	22010.33	0.16
2006/07	39.909	24814.012	0.16
2007/08	39.909	26490.852	0.15

Standard Chartered

(Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2003/04	11.195	15835.747	0.07
2004/05	11.195	18755.635	0.06
2005/06	11.195	21161.442	0.05
2006/07	15.343	19363.470	0.08
2007/08	15.343	23061.032	0.07

Joint Venture banks

(Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2003/04	45.461	34455.122	0.13
2004/05	45.461	39763.014	0.11
2005/06	45.461	43171.775	0.11
2006/07	55.252	44177.482	0.13
2007/08	55.252	49551.884	0.11

ANNEXURE – 'D'

Calculation of net profit to total deposit ratio

Himalayan

(Rs. In million)

Fiscal year	NPAT	Total deposit	Ratio
2003/04	235.023	18619.375	1.26
2004/05	212.132	21007.379	1.01
2005/06	263.052	22010.33	1.20
2006/07	308.277	24814.012	1.24
2007/08	457.458	26490.852	1.73

Standard Chartered

(Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2003/04	479.207	15835.747	3.03
2004/05	506.932	18755.635	2.70
2005/06	537.800	21161.442	2.54
2006/07	580.601	19363.470	3.00
2007/08	672.399	23061.032	2.92

Joint Venture banks

(Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2003/04	714.23	34455.122	2.07
2004/05	719.061	39763.014	1.81
2005/06	800.852	43171.775	1.86
2006/07	888.878	44177.482	2.01
2007/08	1129.857	49551.884	2.28

ANNEXURE – 'E'

Calculation of Return on to Total Assets

Himalayan

(Rs. In million)

Fiscal year	NPAT	Total Assets	Ratio
2003/04	235.023	21315.848	1.10
2004/05	212.132	24197.974	0.88
2005/06	263.052	25729.787	1.02
2006/07	308.277	28871.343	1.07
2007/08	457.458	30579.808	1.50

Standard Chartered

(Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2003/04	479.207	18443.104	2.60
2004/05	506.932	21000.504	2.41
2005/06	537.800	23642.06	2.27
2006/07	580.601	21781.68	2.67
2007/08	672.399	25776.33	2.61

Joint Venture banks

(Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2003/04	714.23	39758.952	1.80
2004/05	719.061	45198.478	1.59
2005/06	800.852	49371.847	1.62
2006/07	888.878	50653.023	1.75
2007/08	1129.857	56356.138	2.00

ANNEXURE – 'F'

Calculation of Cash and bank balances to total deposit

HBL

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2003/04	1264.67	18619.375	6.79
2004/05	1979.209	21007.379	9.42
2005/06	2001.471	22010.33	9.09
2006/07	2014.471	24814.01	8.12
2007/08	1717.352	26490.852	6.48

SCBNL

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2003/04	825.265	15835.747	5.21
2004/05	1512.305	18755.635	8.06
2005/06	2023.164	21161.442	9.56
2006/07	1111.118	19363.470	5.74
2007/08	1276.24	23061.032	5.53

Joint Venture banks

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2003/04	2089.937	34455.122	6.07
2004/05	3491.514	39763.014	8.78
2005/06	4024.635	43177.775	9.32
2006/07	3125.589	44177.482	7.08
2007/08	2993.592	49551.884	6.04

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
2003/04	3047.755	18714.244	16.29
2004/05	3998.870	21020.034	19.02
2005/06	3431.729	22211.734	15.45
2006/07	5469.729	25143.510	21.75
2007/08	5144.312	26651.008	19.30

Standard Chartered

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2003/04	5784.724	14639.889	39.51
2004/05	6722.828	16043.503	41.88
2005/06	7948.217	17770.570	44.73
2006/07	7203.006	17845.761	40.36
2007/08	8644.855	21728.953	39.69

Joint Venture banks

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2003/04	8832.479	33354.133	26.48
2004/05	10721.698	37073.537	28.92
2005/06	11379.946	39982.304	28.46
2006/07	12672.735	42989.271	29.48
2007/08	13789.167	48433.961	28.47

ANNEXURE – 'H'

Investment on Loan and Advance to Total outside Investment **Himalayan**

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2003/04	9557.37	18714.244	51.07
2004/05	10844.599	21020.034	51.59
2005/06	12919.631	22211.734	58.17
2006/07	13451.168	25143.510	53.50
2007/08	15761.977	26651.008	59.14

SCBNL

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2003/04	5364.005	14639.889	36.64
2004/05	5695.824	16053.503	35.48
2005/06	6410.242	17770.570	36.07
2006/07	8143.208	17845.761	45.63
2007/08	8935.418	21728.953	41.12

Joint Venture banks

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2003/04	14921.142	33354.133	44.74
2004/05	16540.423	37073.537	44.62
2005/06	19329.873	39982.304	48.35
2006/07	21594.376	42989.271	50.23
2007/08	24697.395	48433.961	50.99

ANNEXURE –'I'

Investment on Share and debenture to total outside investment ratio

Himalayan

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2003/04	34.266	18714.244	0.18
2004/05	34.266	21020.034	0.16
2005/06	34.266	22211.734	0.15
2006/07	39.909	25143.51	0.16
2007/08	39.909	26651.008	0.15

SCBNL

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2003/04	11.195	14639.889	0.07
2004/05	11.195	16053.503	0.07
2005/06	11.195	17770.357	0.06
2006/07	15.343	17845.761	0.09
2007/08	15.343	21782.953	0.07

Joint Venture banks

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2003/04	14921.142	33354.133	0.14
2004/05	16540.423	37073.537	0.12
2005/06	19329.873	39982.304	0.11
2006/07	21594.376	42989.271	0.13
2007/08	24697.395	48433.961	0.11

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-2006	Xy	X ²
2004	34455.122	-2	-2	-686910.244
2005	39763.014	-1	-39763.014	1
2006	43171.775	0	0	0
2007	44177.482	1	44177.482	1
2008	49551.884	2	99103.768	4
	$\Sigma y = 211119.227$	$\Sigma x = 0$	$\Sigma xy = 34607.992$	$\Sigma x^2 = 10$

$$a = \frac{\Sigma y}{n} = \frac{211119.277}{5} = 42223.855$$

$$b = \frac{\Sigma xy}{\Sigma X^2} = \frac{34607.992}{10} = 3460.799$$

The straight line trend for total deposits of joints venture banks be $y = 42223.855 + 3460.799x$

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-2006	Xy	X ²
2004	18432.991	-2	-36856.982	4
2005	20533.114	-1	-20533.144	1
2006	20652.431	0	0	0
2007	21394.895	1	21394.895	1
2008	2373.57	2	47473.14	4
	$\Sigma y = 104750.001$	$\Sigma x = 0$	$\Sigma xy = 11468.909$	$\Sigma x^2 = 10$

$$a = \frac{\Sigma y}{n} = \frac{104750.001}{5} = 20950.00$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{11468.909}{10} = 1146.89$$

The straight line trend for total investment of joints venture banks be $y_c = 20950.00 + 1146.89x$

Calculation square linear trend analysis of investment on loan and
Advances

(Rs. In million)

Fiscal year (t)	Loan & Advances of JVBs (y)	X=t-2004	Xy	X ²
2004	14921.142	-2	-29842.284	4
2005	16540.432	-1	-16540.432	1
2006	19329.873	0	0	0
2007	21593.376	1	21593.376	1
2008	24697.40	2	49394.8	4
	$\Sigma y = 97082.209$	$\Sigma x = 0$	$\Sigma xy = 24605.468$	$\Sigma x^2 = 10$

$$a = \frac{\Sigma y}{n} = \frac{97082.209}{5} = 19416.447$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{24605.468}{10} = 2460.547$$

The straight line trend for investment on loan and advances of joints venture banks be $y = 19416.44 + 2460.547 x$

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-2006	Xy	X ²
2004	714.23	-2	-1428.46	4
2005	719.064	-1	-719.064	1
2006	800.852	0	0	0
2007	888.878	1	888.878	1
2008	1129.857	2	2259.714	4
	Σy = 4252.881	Σx = 0	Σxy 1001.068	Σx ² =10

$$a = \frac{\Sigma y}{n} = \frac{4252.881}{5} = 850.576$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{1001.068}{10} = 100.107x$$

The straight line trend for Net profit of joints venture banks be $y = 850.576 + 576 + 100.170$

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-2006	Xy	X ²
2004	8832.479	-2	-17664.958	4
2005	10721.698	-1	-10721.698	1
2006	11379.946	0	0	0
2007	12672.735	1	12672.735	4
2008	13789.167	2	27578.334	1
	57396.02		11864.413	
	$\Sigma y = 57396.02$	$\Sigma x = 0$	$\Sigma xy = 11864.413$	$\Sigma x^2 = 10$

$$a = \frac{\Sigma y}{n} = \frac{57396.025}{5} = 11479.205$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{11864.413}{10} = 1186.441$$

The straight line trend for investment on government securities of joints venture banks be $y = 11479.205 + 1186.441x$

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-2006	Xy	X ²
2004	45.461	-2	-90.922	
2005	45.461	-1	-45.461	
2006	45.461	0	0	
2007	55.52	1	55.252	
2008	55.252	2	110.504	
	$\Sigma y = 246.887$	$\Sigma x = 0$	$\Sigma xy = 29.373$	

$$a = \frac{\Sigma y}{n} = \frac{246.887}{5} = 49.377$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{29.373}{10} = 2.937$$

The straight line trend for investment on share and debenture of joints venture banks be $y = 49.377 + 2.937x$

Standard Chartered Bank Nepal Limited
Five years Financial Summary
Balance Sheet

(Rs in millions)

S.N.	Particulars	2003/04	2004/05	2005/06	2006/07	2007/08
Assets						
1	Cash and bank balances	825.265	1512.305	2023.164	1111.118	1276.24
2	Money at call	2061.964	1657.909	2218.600	2259.691	1977.271
3	Investment	9275.884	10357.679	11360.328	9702.553	12847.535
	3.1 Government Securities	5784.724	6724.824	7948.217	7203.006	8644.855
	3.2 Share and Debenture	11.195	11.195	11.195	15.343	15.343
	3.3 Other Investment	3479.964	3623.565	3400.916	2484.204	4187.337
4	Loans, Advance	5364.005	5695.824	6410.242	8143.208	8935.418
5	Fixed Assets	101.066	191.711	136.234	71.413	101.302
6	Other Assets	814.920	1585.076	1493.492	493.698	638.564
	Total Assets	18443.104	21000.504	23642.06	21781.68	25776.33

Capital and liabilities

1	Share Capital	339.549	339.549	374.640	374.640	374.640
2	Reserve and Fund	895.929	1029.358	1121.099	1207.775	1379.498
3	Loans and borrowing	684.724	79.163	78.283	27.551	
4	Deposit Account	15835.747	18755.635	21161.442	19363.470	23061.032
5	Billy Payable	51.400	54.842	59.025	56.298	55.751
6	Other Liabilities	635.756	741.957	847.571	751.946	905.411
	Total Capital +Liabilities	18443.104	21000.504	23642.06	21781.68	25776.33

Himalayan Bank Limited

Five years Financial Summary

Balance Sheet

(Rs in millions)

S.N.	Particulars	2001/02	2002/03	2003/04	2004/05	2005/06
Assets						
1	Cash and bank balances	1264.672	1979.209	2001.471	2014.471	1717.352
2	Money at call	352.350	150.100	441.081	441.081	1005.280
3	Investment	9157.107	10175.435	9292.103	5469.342	10889.031
	3.1 Government Securities	3047.755	3998.870	3431.729	5469.729	5144.312
	3.2 Share and Debenture	34.266	34.266	34.266	39.909	39.909
	3.3 Other Investment	6075.086	6142.299	5826.108	6182.704	5704.81
4	Loans, Advance	9557.137	10844.599	12919.631	13451.168	15761.977
5	Fixed Assets	318.844	229.871	299.643	295.822	540.825
6	Other Assets	665.738	818.760	848.326	976.459	665.343
	Total Assets	21315.848	24197.974	25729.787	28871.343	30579.808

Capital and liabilities

(Rs in million)

1	Share Capital	390.00	429.000	536.250	643.500	772.200
2	Reserve and Fund	991.999	1354.39	1585.71	1766.72	1956.835
3	Loans and borrowing	534.013	645.840	659.006	506.048	504.625
4	Deposit Account	119.530	122.493	169.968	158.175	156.558
5	Billy Payable	18619.275	21007.379	22010.333	24814.012	24490.852
6	Other Liabilities	660.931	638.872	678.520	982.888	698.738
	Total Capital +Liabilities	21315.848	24197.974	25729.787	28871.343	30579.808

Interest Income on and Advances of Joint venture Banks.

(Rs in million)

F.Y.	HBL	SCBNL	JVBs
2003/04	853.429	540.851	1394.28
2004/05	903.839	563.506	1467.345
2005/06	970.166	558.006	1528.172

2006/07	1122.392	581.664	1704.056
2007/08	1140.687	596.622	1737.309

Interest Income on government Securities of Joint Venture Banks
(Rs in million)

F.Y.	HBL	SCBNL	JVBs
2003/04	79.894	264.953	344.847
2004/05	121.544	303.544	425.088
2005/06	170.333	380.442	550.775
2006/07	149.131	331.633	480.764
2007/08	172.242	355.291	527.532

Net Profit After Tax of Joint Venture Banks

(Rs in million)

F.Y.	HBL	SCBNL	JVBs
2003/04	235.023	479.207	714.23
2004/05	212.132	506.932	719.064
2005/06	263.052	537.800	800.852
2006/07	308.277	580.601	888.878
2007/08	457.458	672.399	1129.857

APPENDIX

ANNEXURE-'A'

Calculation of Total Investment to total Deposit Ratio

(Rs. In million)

Fiscal Year	Himalayan			Standards Chartered		
	Total Investment	Total deposit	Ratio	Total Investment	Total deposit	Ratio
2003/04	9157.107	18619.375	40.18	9275.884	15835.747	58.58
2004/05	10175.435	21007.379	48.44	10357.673	18755.635	55.22
2005/06	9292.103	22010.333	42.22	11360.328	21161.442	53.68
2006/07	11692.342	24814.012	47.12	97802.553	19363.470	50.11
2007/08	10889.031	26490.852	41.10	12847.535	23061.032	55.71

Joint Venture Banks.

Fiscal Year	Total Investment	Total Deposit	Ratio
2003/04	18432.991	34455.122	53.50
2004/05	20533.114	39763.014	51.64
2005/06	20652.431	43171.775	47.84
2006/07	21394.895	44177.482	48.43
2007/08	23736.57	49551.884	47.90

ANNEXURE –'B'

Calculation of Investment on government securities to total deposit

Himalayan

(Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2003/04	3047.775	18619.375	16.37
2004/05	3998.870	21007.379	19.04
2005/06	3431.729	22010.33	15.59
2006/07	5469.729	24814.012	22.04
2007/08	5144.312	26490.852	19.42

Standard Chartered

(Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2003/04	5784.724	15835.745	36.53
2004/05	6722.828	18755.635	35.84
2005/06	7948.217	21161.442	37.56
2006/07	723.006	19363.470	37.20
2007/08	8644.855	23061.032	37.49

Joint Venture banks

(Rs. In million)

Fiscal year	Total investment on Govt.securities	Total deposit	Ratio
2003/04	8832.479	34455.122	25.63
2004/05	10721.698	39763.014	26.96
2005/06	11379.946	43171.775	26.36
2006/07	12672.735	44177.482	28.69
2007/08	13789.167	49551.884	27.83

ANNEXURE – 'C'

Calculation of share and debenture to total deposit

Himalayan

(Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2003/04	34.26	18619.375	0.18
2004/05	34.266	21007.279	0.16
2005/06	34.266	22010.33	0.16
2006/07	39.909	24814.012	0.16
2007/08	39.909	26490.852	0.15

Standard Chartered

(Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2003/04	11.195	15835.747	0.07
2004/05	11.195	18755.635	0.06
2005/06	11.195	21161.442	0.05
2006/07	15.343	19363.470	0.08
2007/08	15.343	23061.032	0.07

Joint Venture banks

(Rs. In million)

Fiscal year	Share and debenture	Total deposit	Ratio
2003/04	45.461	34455.122	0.13
2004/05	45.461	39763.014	0.11
2005/06	45.461	43171.775	0.11
2006/07	55.252	44177.482	0.13
2007/08	55.252	49551.884	0.11

ANNEXURE – 'D'

Calculation of net profit to total deposit ratio

Himalayan

(Rs. In million)

Fiscal year	NPAT	Total deposit	Ratio
2003/04	235.023	18619.375	1.26
2004/05	212.132	21007.379	1.01
2005/06	263.052	22010.33	1.20
2006/07	308.277	24814.012	1.24
2007/08	457.458	26490.852	1.73

Standard Chartered

(Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2003/04	479.207	15835.747	3.03
2004/05	506.932	18755.635	2.70
2005/06	537.800	21161.442	2.54
2006/07	580.601	19363.470	3.00
2007/08	672.399	23061.032	2.92

Joint Venture banks

(Rs. In million)

Fiscal year	NPTA	Total deposit	Ratio
2003/04	714.23	34455.122	2.07
2004/05	719.061	39763.014	1.81
2005/06	800.852	43171.775	1.86
2006/07	888.878	44177.482	2.01
2007/08	1129.857	49551.884	2.28

ANNEXURE – 'E'

Calculation of Return on to Total Assets

Himalayan

(Rs. In million)

Fiscal year	NPAT	Total Assets	Ratio
2003/04	235.023	21315.848	1.10
2004/05	212.132	24197.974	0.88
2005/06	263.052	25729.787	1.02
2006/07	308.277	28871.343	1.07
2007/08	457.458	30579.808	1.50

Standard Chartered

(Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2003/04	479.207	18443.104	2.60
2004/05	506.932	21000.504	2.41
2005/06	537.800	23642.06	2.27
2006/07	580.601	21781.68	2.67
2007/08	672.399	25776.33	2.61

Joint Venture banks

(Rs. In million)

Fiscal year	NPTA	Total Assets	Ratio
2003/04	714.23	39758.952	1.80
2004/05	719.061	45198.478	1.59
2005/06	800.852	49371.847	1.62
2006/07	888.878	50653.023	1.75
2007/08	1129.857	56356.138	2.00

ANNEXURE – 'F'

Calculation of Cash and bank balances to total deposit

HBL

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2003/04	1264.67	18619.375	6.79
2004/05	1979.209	21007.379	9.42
2005/06	2001.471	22010.33	9.09
2006/07	2014.471	24814.01	8.12
2007/08	1717.352	26490.852	6.48

SCBNL

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2003/04	825.265	15835.747	5.21
2004/05	1512.305	18755.635	8.06
2005/06	2023.164	21161.442	9.56
2006/07	1111.118	19363.470	5.74
2007/08	1276.24	23061.032	5.53

Joint Venture banks

(Rs. In million)

Fiscal year	Cash & Bank Balance	Total deposit	Ratio
2003/04	2089.937	34455.122	6.07
2004/05	3491.514	39763.014	8.78
2005/06	4024.635	43177.775	9.32
2006/07	3125.589	44177.482	7.08
2007/08	2993.592	49551.884	6.04

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
2003/04	3047.755	18714.244	16.29
2004/05	3998.870	21020.034	19.02
2005/06	3431.729	22211.734	15.45
2006/07	5469.729	25143.510	21.75
2007/08	5144.312	26651.008	19.30

Standard Chartered

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2003/04	5784.724	14639.889	39.51
2004/05	6722.828	16043.503	41.88
2005/06	7948.217	17770.570	44.73
2006/07	7203.006	17845.761	40.36
2007/08	8644.855	21728.953	39.69

Joint Venture banks

(Rs. In million)

Fiscal year	Investment on Govt. Securities	To Total Outside Investment	Ratio
2003/04	8832.479	33354.133	26.48
2004/05	10721.698	37073.537	28.92
2005/06	11379.946	39982.304	28.46
2006/07	12672.735	42989.271	29.48
2007/08	13789.167	48433.961	28.47

ANNEXURE – 'H'

Investment on Loan and Advance to Total outside Investment **Himalayan**

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2003/04	9557.37	18714.244	51.07
2004/05	10844.599	21020.034	51.59
2005/06	12919.631	22211.734	58.17
2006/07	13451.168	25143.510	53.50
2007/08	15761.977	26651.008	59.14

SCBNL

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2003/04	5364.005	14639.889	36.64
2004/05	5695.824	16053.503	35.48
2005/06	6410.242	17770.570	36.07
2006/07	8143.208	17845.761	45.63
2007/08	8935.418	21728.953	41.12

Joint Venture banks

(Rs. In million)

Fiscal year	Loan & Advances	To Total Outside Investment	Ratio
2003/04	14921.142	33354.133	44.74
2004/05	16540.423	37073.537	44.62
2005/06	19329.873	39982.304	48.35
2006/07	21594.376	42989.271	50.23
2007/08	24697.395	48433.961	50.99

ANNEXURE –'I'

Investment on Share and debenture to total outside investment ratio

Himalayan

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2003/04	34.266	18714.244	0.18
2004/05	34.266	21020.034	0.16
2005/06	34.266	22211.734	0.15
2006/07	39.909	25143.51	0.16
2007/08	39.909	26651.008	0.15

SCBNL

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2003/04	11.195	14639.889	0.07
2004/05	11.195	16053.503	0.07
2005/06	11.195	17770.357	0.06
2006/07	15.343	17845.761	0.09
2007/08	15.343	21782.953	0.07

Joint Venture banks

(Rs. In million)

Fiscal year	Share & Debenture	Total Outside Investment	Ratio
2003/04	14921.142	33354.133	0.14
2004/05	16540.423	37073.537	0.12
2005/06	19329.873	39982.304	0.11
2006/07	21594.376	42989.271	0.13
2007/08	24697.395	48433.961	0.11

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-2004	Xy	X ²
2002	34455.122	-2	-2	-686910.244
2003	39763.014	-1	-39763.014	1
2004	43171.775	0	0	0
2005	44177.482	1	44177.482	1
2006	49551.884	2	99103.768	4
Total	Σy =211119.227	Σx =0	Σxy =34607.992	Σx ² =10

$$a = \frac{\sum y}{n} = \frac{211119.277}{5} = 42223.855$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{34607.992}{10} = 3460.799$$

The straight line trend for total deposits of joints venture banks be $y = 42223.855 + 3460.799x$

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-2004	Xy	X ²
2002	18432.991	-2	-36856.982	4
2003	20533.114	-1	-20533.144	1
2004	20652.431	0	0	0
2005	21394.895	1	21394.895	1
2006	2373.57	2	47473.14	4
Total	Σy =104750.001	Σx =0	Σxy =11468.909	Σx ² =10

$$a = \frac{\Sigma y}{n} = \frac{104750.001}{5} = 20950.00$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{11468.909}{10} = 1146.89$$

The straight line trend for total investment of joints venture banks be $y_c = 20950.00 + 1146.89x$

ANNEXURE –'J.3'

Calculation square linear trend analysis of investment on loan and Advances

(Rs. In million)

Fiscal year (t)	Loan & Advances of JVBs (y)	X=t-2004	Xy	X ²
2002	14921.142	-2	-29842.284	4
2003	16540.432	-1	-16540.432	1
2004	19329.873	0	0	0
2005	21593.376	1	21593.376	1
2006	24697.40	2	49394.8	4
Total	Σy =97082.209	Σx=0	Σxy =24605.468	Σx ² =10

$$a = \frac{\sum y}{n} = \frac{97082.209}{5} = 19416.447$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{24605.468}{10} = 2460.547$$

The straight line trend for investment on loan and advances of joints venture banks be $y = 19416.44 + 2460.547 x$

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-2004	Xy	X ²
2002	714.23	-2	-1428.46	4
2003	719.064	-1	-719.064	1
2004	800.852	0	0	0
2005	888.878	1	888.878	1
2006	1129.857	2	2259.714	4
Total	Σy = 4252.881	Σx = 0	Σxy 1001.068	Σx ² =10

$$a = \frac{\sum y}{n} = \frac{4252.881}{5} = 850.576$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{1001.068}{10} = 100.107x$$

The straight line trend for Net profit of joints venture banks be $y = 850.576 + 576 + 100.170$

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
2002	8832.479	-2	-17664.958	4
2003	10721.698	-1	-10721.698	1
2004	11379.946	0	0	0
2005	12672.735	1	12672.735	4
2006	13789.167	2	27578.334	1
Total	$\Sigma y = 57396.02$	$\Sigma x = 0$	$\Sigma xy = 11864.413$	$\Sigma x^2 = 10$

$$a = \frac{\Sigma y}{n} = \frac{57396.025}{5} = 11479.205$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{11864.413}{10} = 1186.441$$

The straight line trend for investment on government securities of joints venture banks be $y = 11479.205 + 1186.441x$

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
2002	45.461	-2	-90.922	
2003	45.461	-1	-45.461	
2004	45.461	0	0	
2005	55.52	1	55.252.	
2006	55.252	2	110.504	
Total	Σy =246.887	Σx = 0	Σxy =29.373	

$$a = \frac{\sum y}{n} = \frac{246.887}{5} = 49.377$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{29.373}{10} = 2.937$$

The straight line trend for investment on share and debenture of joints venture banks be $y = 49.377 + 2.937x$

Standard Chartered Bank Nepal Limited
Five years Financial Summary
Balance Sheet

(Rs in millions)

S.N.	Particulars	2003/04	2004/05	2005/06	2006/07	2007/08
Assets						
1	Cash and bank balances	825.265	1512.305	2023.164	1111.118	1276.24
2	Money at call	2061.964	1657.909	2218.600	2259.691	1977.271
3	Investment	9275.884	10357.679	11360.328	9702.553	12847.535
	3.1 Government Securities	5784.724	6724.824	7948.217	7203.006	8644.855
	3.2 Share and Debenture	11.195	11.195	11.195	15.343	15.343
	3.3 Other Investment	3479.964	3623.565	3400.916	2484.204	4187.337
4	Loans, Advance	5364.005	5695.824	6410.242	8143.208	8935.418
5	Fixed Assets	101.066	191.711	136.234	71.413	101.302
6	Other Assets	814.920	1585.076	1493.492	493.698	638.564
	Total Assets	18443.104	21000.504	23642.06	21781.68	25776.33

Capital and liabilities

1	Share Capital	339.549	339.549	374.640	374.640	374.640
2	Reserve and Fund	895.929	1029.358	1121.099	1207.775	1379.498
3	Loans and borrowing	684.724	79.163	78.283	27.551	
4	Deposit Account	15835.747	18755.635	21161.442	19363.470	23061.032
5	Billy Payable	51.400	54.842	59.025	56.298	55.751
6	Other Liabilities	635.756	741.957	847.571	751.946	905.411
	Total Capital +Liabilities	18443.104	21000.504	23642.06	21781.68	25776.33

Himalayan Bank Limited

Five years Financial Summary

Balance Sheet

(Rs in millions)

S.N.	Particulars	2001/02	2002/03	2003/04	2004/05	2005/06
Assets						
1	Cash and bank balances	1264.672	1979.209	2001.471	2014.471	1717.352
2	Money at call	352.350	150.100	441.081	441.081	1005.280
3	Investment	9157.107	10175.435	9292.103	5469.342	10889.031
	3.1 Government Securities	3047.755	3998.870	3431.729	5469.729	5144.312
	3.2 Share and Debenture	34.266	34.266	34.266	39.909	39.909
	3.3 Other Investment	6075.086	6142.299	5826.108	6182.704	5704.81
4	Loans, Advance	9557.137	10844.599	12919.631	13451.168	15761.977
5	Fixed Assets	318.844	229.871	299.643	295.822	540.825
6	Other Assets	665.738	818.760	848.326	976.459	665.343
	Total Assets	21315.848	24197.974	25729.787	28871.343	30579.808

Capital and liabilities

(Rs in million)

1	Share Capital	390.00	429.000	536.250	643.500	772.200
2	Reserve and Fund	991.999	1354.39	1585.71	1766.72	1956.835
3	Loans and borrowing	534.013	645.840	659.006	506.048	504.625
4	Deposit Account	119.530	122.493	169.968	158.175	156.558
5	Billy Payable	18619.275	21007.379	22010.333	24814.012	24490.852
6	Other Liabilities	660.931	638.872	678.520	982.888	698.738
	Total Capital +Liabilities	21315.848	24197.974	25729.787	28871.343	30579.808

Interest Income on and Advances of Joint venture Banks.

(Rs in million)

F.Y.	HBL	SCBNL	JVBs
2003/04	853.429	540.851	1394.28

2004/05	903.839	563.506	1467.345
2005/06	970.166	558.006	1528.172
2006/07	1122.392	581.664	1704.056
2007/08	1140.687	596.622	1737.309

Interest Income on government Securities of Joint Venture Banks

(Rs in million)

F.Y.	HBL	SCBNL	JVBs
2003/04	79.894	264.953	344.847
2004/05	121.544	303.544	425.088
2005/06	170.333	380.442	550.775
2006/07	149.131	331.633	480.764
2007/08	172.242	355.291	527.532

Net Profit After Tax of Joint Venture Banks

(Rs in million)

F.Y.	HBL	SCBNL	JVBs
2003/04	235.023	479.207	714.23
2004/05	212.132	506.932	719.064
2005/06	263.052	537.800	800.852
2006/07	308.277	580.601	888.878
2007/08	457.458	672.399	1129.857