CHAPTER - 1

INTRODUCTION

1.1 Background of the study

The development of any country cannot be imagined without the development of the economy. The country should be strictly based on the proper and efficient utilization of the resources available with well-planned management, strategy and up to date revision. Efficient utilization of available resources appreciates the wealth position of individual as well as nation which can be possible only at Integrated and speedily condition when competitive banking and financial service reaches nook and corners of the country i.e. without development of financial sector or banking sector economic development of country cannot be imagined. Bank is an organization whose main function is to accept deposit and invest it to different sectors. Bank collects money from public by providing attractive interest and earns profit by lending it in business organization, industrial, agricultural sector etc. In order to make profit, banks help to convert unproductive towards productive sector. Bank plays vital role to develop economic condition of a country. Only successful banks can be stable in the country which is very challenging task. To be a successful bank, formulation of investment policy and its proper utilization or implementation is essential.

A healthy development of any banks depends heavily upon its investment policy. Good investment policy has a positive impact on economic development of the country and vice-versa. A sound and viable investment policy is one of the major effective tools for the economy to attain the economic objectives directed towards the acceleration of the pace of development. Banks should attract its customer by implementing best or competitive investment policy. It helps to increase the quality of banking services as well as volume of

quality deposits, loan and advance and investment. The best investment policy helps to minimize the risk and make profit which increases the efficiency of investment operation. Better investment policy can only be possible when banks consider portfolio investment. Investment portfolio helps in proper utilization of resources. The main objective of portfolio investment is to minimize risk at the given level of return. Basically investment decision depends upon two factors, i.e. risk and return. Risk is the fluctuation of actual returns and expected returns. The minimization of risk is possible by investing in two or various securities. Investment in two or more securities is called portfolio. The portfolio theory is concerned with the selection of optimal portfolio i.e. portfolio provides the highest possible return for any specific level of risk or the lower possible risk for any specified rate of return. Thus portfolio theory has been developed for financial assets because most of the securities which are available for investment have uncertain outcomes so they are risky.

The main problem of investor is to determine the particular risky securities to own or the combination of securities which can provide highest possible return at lowest possible risk. Horry M. Morkowitz gives solution of this problem in 1952. He defined modern portfolio theory. In 1952, Horry M. Morkowitz published a landmark paper that is generally viewed as the origin of the modern portfolio theory- approach to investing. Nobody is ready to bear the risk without any return but to have returned one must ready to face some risk. To minimize the risk at the given rate of return the concept of portfolio diversification is necessary. Portfolio is simply defined as a combination of assets or collection of securities gathered to achieve certain investment goals. Portfolio management is unconcerned with efficient management of portfolio investment in financial assets including shares and debentures of companies. A portfolio of an individual or corporate unit is the holding of securities and investment in financial assets. These holding are the result of individual preferences and

decisions regarding risk and return. The process of portfolio management is closely and directly linked with the process of decision making, the correctness of which cannot be ensured in all cases. For example portfolio management of bank assets basically means allocation of funds to different degree of risk and carrying rates of return in such a way that balance the conflicting goal of maximum yield and minimum risk. Portfolio management is the process of selecting a bundle of securities that provides the investing organization a minimum yield for a given level of risk. It aims to determine combination of appropriate assets which attains optimal level of risk and return. Technically it is known as efficient portfolio or superior portfolio. A portfolio simply represents practice among the investor of having their fund in more than one asset. The combination of investment assets is called portfolio (Weston and Brigham, 1992:245).

Portfolio theory deals with the selection of optimal portfolios: that is portfolio provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified return. Portfolio theory has been developed for the financial assets. Thus making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio (ODFB, 1997: 173). Portfolio means a collection of group of assets. (Gitman, 1990: 243) In finance a portfolio is a collection of investments held by an institution or a private individual. In building up an investment portfolio a financial institution will conduct its own investment analysis which a private individual may make use of the service of la merchant bank which efforts portfolio management. Holding a portfolio is a part of an investment and risk limiting strategy called diversification.

(www.google.com.np/search).

Concept of Commercial Bank of Nepal

Commercial Bank can be defined as a bank which operates currency exchanges transactions, accepts deposits, provides loan, and performs dealings relating to commerce except the banks which have been specified for the co-operative, agricultural, industry of similar other specific objective. (Commercial Bank Act; 2031, p.25).

Commercial bank is a corporation which accepts demand deposits subject to check and makes short term loans to business enterprise, regardless of the scope of its other service. (Fisher and Ronald; 2000, p.345-346).

So, the bank which collects money from people by providing attractive interest and arranges them for productive sector is called Commercial Bank. They accept deposits from the public and provide same deposit to the public as loan. Commercial banks are working under recommendation of Nepal Rastra Bank and main objective of commercial bank is to develop economic status of the country by providing banking habit in community. The success of the commercial bank heavily depends upon the proper management of investment. A commercial bank must mobilize its deposits and other funds to profitable, secured, stable and marketable sectors. Investment policy provides several inputs to the bank through which they can handle their investment operation efficiently ensuring maximum return with minimum risk which ultimately leads the bank to the path of success.

1.2 Statement of Problem

Nepal is a developing country in the world. The main cause of underdevelopment is because of lack of capital formulation and its proper implementation. It is clear that the number of financial institution is least and investment policy of financial institution is weak in Nepal. In

this situation to raise the economy of a country banks, it needs to show the capability during investment by choosing high risky sector where there is more profit. But the financial institutions of Nepal are interested to invest in less risky and liquid sector i.e. treasury bills, government securities, development bonds, national saving etc. Due to the lack of portfolio management, funds are used only on short term basis and in limited areas. The economic condition and development of country is accelerating slowly since many years. So, it seems to be the major problem of country because without the development of a country the economic status of people cannot be raised. In this situation commercial banks have to bear more responsibilities to avoid above problem because the development of country is directly related to the volume of investment in productive sectors, which can be obtained from commercial banks. But, after the restoration of democracy, Nepal has adopted more liberal and open economic policies.

The open and liberal policy of government in financial sector has helped in establishing many banks and financial institutions in the country. These banks have contributed towards introducing new technology, new banking system and efficient service provided in the country. It helps to give positive contribution towards banking system in the country and to encourage citizen's banking habit. But still commercial banks have been serving only rich communities not the poor. The commercial banks are centrally located in urban areas and some have already expanded their branches in the rural areas of Nepal but it has not been effectively implemented in deposit mobilization and loan distribution. The main cause of central location of commercial banks may be because of Maoist's violence in insurgency period and Terai strike, bank rubbery etc because they want secured investment. Unsecured loan and investment may cause the liquidation of those banks. So they choose less risky sector or secured sector. It is a major problem because it is the time for the commercial banks

to feel their responsibility about country and try to make investment policy little bit riskier considering credit policy, interest rate, discount rate policy etc. Due to sound investment policy of commercial banks and lack of portfolio management Nepalese commercial banks have not formulated their investment policy in an organized manner. They do not have consideration towards portfolio optimization. They just relay upon the instructions and guideline of Nepal Rastra bank. They do not have their own clear vision towards investment portfolio. They do not try to pay due attention towards proper matching of the deposit and investment portfolio, which creates financial problem enforcing commercial banks to take wrong decision.

Bank has to invest its source in different productive sector of the investment alternatives to earn profit. But there is uncertainty of profit which creates risk to the organization. So, every commercial bank has to diversify their investment to minimize risk. But portfolio management activities of Nepalese commercial banks are in developing stage. There are various reasons behind not using such activities openly by CB's such as awareness about portfolio management and its usefulness, hesitation of taking risk, lack of proper techniques to run such activities in the best and successful manner less developed capital market, very limited opportunity for exercising the portfolio management. Nepal Rastra Bank has also played vital role to make commercial banks as well as financial institutions to invest their funds in a good sector, which affect the investment portfolio. NRB has imposed many rules and regulations. So, CBs can have sufficient liquidity and security. Banking competition is increasing day by day but investment opportunity is not comparatively extended. The present study will try to analyze the investment of commercial banks, Portfolio management of CB's in their investment, return on various types of investment, portfolio risk and return and performance towards investment. Therefore this study will deal with the following issues:

What is the relationship of investment and loan with total deposits?

Is portfolio management efficient on Nepalese commercial banks?

How does bank portfolio behave?

Does the investment decision affect the total earning of the banks?

How is the investment portfolio managed by the commercial banks?

How far commercial banks have been able to mobilize and utilize domestic resources?

What is the trend of investment in different assets?

Which bank has largest portfolio return and degree of risk?

1.3 Objectives of the Study

The main objective of this research is to identify the situation of portfolio management of Nepalese Commercial Banks. Investment decision is one of the major decision functions of financial management. This study focuses whether the portfolio concept have been properly followed by CBs to take investment or not. The major objectives are as below:

To analyze how commercial banks manage their risk and return on investment using portfolio concept.

To analyze the investment portfolio of Nepalese commercial banks under study.

To evaluate comparative financial performance of selected commercial banks in terms of investment strategies.

To find out trend of investment in different sectors.

1.4 Significance of the Study

Banks and other financial institutions are playing vital role in the economic development of the country. So, if there is insufficiency of banking and financial facilities, the growth of the economic development becomes slow. Especially, commercial banks provide different facilities to the people engaged in trade, commerce, industry and so on. The main objective of commercial banks is to earn more profit by proper mobilization of funds. Commercial banks plays major role to collect scattered amount by providing attractive interest and transforming them into meaningful capital investment. The CB will be successful only when they focus on making best investment policy and its implementation i.e. successful formulation and effective implementation of investment policy is the prime requisite for the successful performance of any organization. And only analysis of investment policy of existing commercial banks helps to build new effective and practical investment policy. The main significance of this study of investment portfolio analysis of Nepalese Commercial Banks is to help the methods of minimization of risk on investment and maximizing return through portfolio analysis. Similarly, the study of commercial banks, investment trend, risk return pattern, portfolio management, credit management and effect of investment decision on earning will strive to disclose the internal weakness of the bank and furnish the ideas for improvement. The major significance of the study is as follows:

It analyzes risk and return of commercial banks.

It examines the investment, loans and advances portfolio of commercial banks.

It examines the existing situation of portfolio management of Nepalese Commercial Banks.

It evaluates the financial performance of selected commercial banks of Nepal.

It provides the literature to the researcher who wants to carry on future research in this field.

1.5 Limitations of the Study

The present study is not a comprehensive study. This study is conducted for the partial fulfillment of degree of MBS. Some deficiencies may be found in this study due to various limitations. Some of the limitations are as follows:

This study is might not be representative of whole financial sectors as it covers only five commercial banks because financial statements of all commercial banks are not updated and readily available. Selected five banks are as follow: Standard Chartered Bank Ltd., NABIL Bank Ltd., Nepal Investment Bank Ltd., Nepal Investment Bank Ltd. and Bank of Kathmandu.

This study concentrates only on those factors, which are related with investment portfolio analysis and available in the form required for the analyzing different issues. However, investment decisions of commercial banks are affected by lot of factors.

The study only covers a period of ten fiscal years.

Only secondary data was used for study.

Due to the wide range of data deficiencies only simple techniques have been used in analysis and certain rations related with investment are selected.

The limitations of this study are time constraints, limited budget, lack of experience, up-to-date information.

1.6 Organization of the study

The research has been categorized into 5 chapters.

Chapter 1 **Introduction**

This chapter introduces general background, statement of problem objectives of the study, significance of the study, limitations of the study and common hypothesis about the study.

Chapter 2 **Review of Literature**

This chapter deals with the review of available literatures in the field of the study being conducted. This includes conceptual review, review of popular models of portfolio, review of journal and articles and review of previous thesis.

Chapter 3 **Research methodology**

This chapter explains the research methodology used in study, which includes research design, population and sample, source & type of data, data collection techniques and data analysis tolls.

Chapter 4 **Data presentation and Analysis**

In this chapter collected data are analyzed and interprets the results using different financial and statistical tools. In this chapter major finding of the study was explained.

Chapter 5 **Summary, Conclusion and Recommendation**

The final chapter includes the summary, conclusion and recommendation. This chapter is suggestive to all concern in accordance of analysis and interpretation of data.

Besides these, bibliography and annexure will also present at the end of the thesis. Similarly, acknowledgement, table of contents, list of tables, list of diagrams, abbreviations are included in the front part of this thesis report.

Conceptual Framework

Research Variables:

The research variables are as follows:

Government Securities

Shares and debentures

Loans and Advances

Risk and returns

```
┌──────────────────┐                      ┌──────────────────┐
│   Government     │                       │     Shares &     │
│   Securities     │                       │    Debentures    │
└──────────────────┘                       └──────────────────┘
              ↖                            ↗
              ┌──────────────────────────┐
              │  ┌────────────────────┐  │
              │  │     Research       │  │
              │  │     Variables      │  │
              │  └────────────────────┘  │
              └──────────────────────────┘
              ↙                            ↘
┌──────────────────┐                      ┌──────────────────┐
│    Risk and      │                       │    Loans and     │
│    Return        │                       │    Advances      │
└──────────────────┘                       └──────────────────┘
```
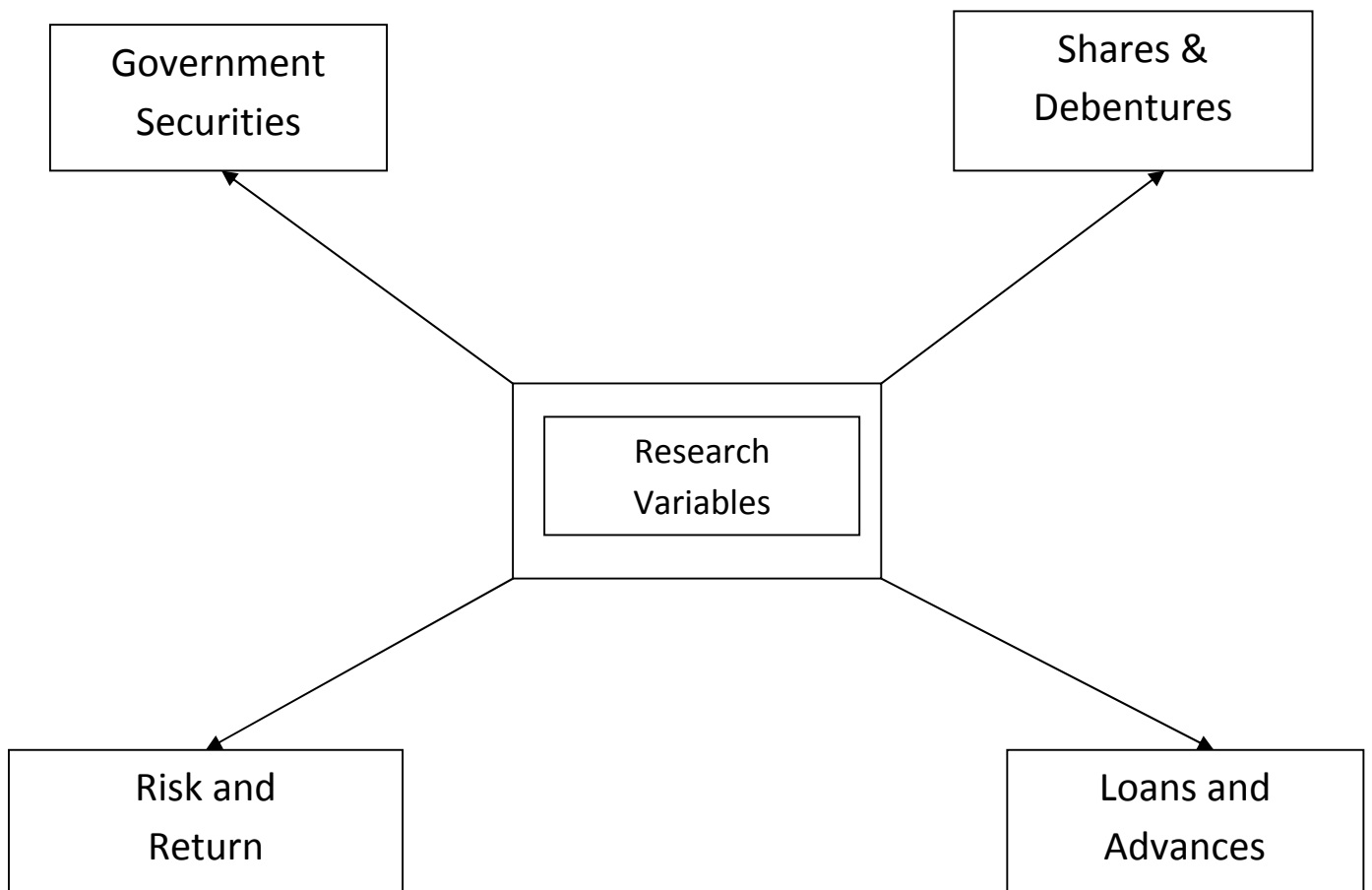
Figure: Research variables

CHAPTER – 2

REVIEW OF LITERATURE

In this chapter major related literature about portfolio investment are reviewed. Every possible effort has been made to grasp knowledge and information that are available from basic academic financial books, libraries, articles, documents and collection centre, related publications, Nepal Rastra Bank, Nepal Stock Exchange Centre, some web sites, concerned commercial bank and related studies of some major researches. But there is lack of enough information related with this topic in Nepal. The concept and information of most of the books that were published in Nepal are copied from foreign books i.e. the sufficient research works has not been performed in this specific topic. So the present study has to refer almost all the books published in foreign countries.

This chapter consists of two parts where first part defines clearly about investment, portfolio investment and model of portfolio investment which is called Conceptual Review and second part is called Review of Related Studies which points out major thing about some previous thesis, articles and journals.

2.1 Theoretical Review

Theoretical review contains Investment, Portfolio Management and Portfolio Investment.

Investment

A commitment of fund made in expectation of additional return in the feature is called investment. i.e. the activities sacrificing current rupees for future is called investment. At present, organizations use their tangible and fixed assets for certain period with expectation

of uncertain and unknown return. That means return on investment may be positive or negative. So during the

investment, an organization has to consider lot of things to achieve better investment. Uncalculated investment might be the cause of big losses for the organization or the feature of an organization.

"To make better investment and minimize the risk, an organization should follow investment process where it describes extension period of an investment, time of an investment, the best securities for investment and so on". Following five steps should be followed during investment process:

Setting of investment policy

Perform security analysis

Construct a portfolio

Revise the portfolio

Evaluate the performance of the portfolio.

(Francis, 2003, p.10)

"Investment is the current commitment of funds for a period of time to derive a future flow of funds that will compensate the investing unit for the time funds committed for the expected rate of inflation and also for the uncertainty involved in the future flow of the funds. (Frank and Reilly; 2004, p.298-299).

"Investment is the employment of funds with the aim of achieving additional income of growth in values**.**" (Singh; 2001, p.276)

Investment explores future vision of profit, risk, speculation and wealth."Investment is any vehicle into which funds can be placed with expectation that will preserve or increase in value and generated positive return.(Gitman and Joehnk, 1990,p.112-115)

Portfolio and Portfolio Investment

"Every investment entails some degree of risk, it requires at present certain sacrifice for a future uncertain benefits."(Francis; 1998, p.1)

Investors are willing to invest in different sectors to get some return but every return includes risk. People cannot avoid the risk in investment but they can minimize the risk during the investment. So, the process followed by an investor to get maximum level of return at certain level of risk or certain level of return at lowest level of risk is known as portfolio. The feature return of an investment is uncertain and unknown. So, the process of converting uncertain return into certain is called portfolio management. Portfolio management is a method of selecting a investment alternatives that provides maximum yield to the investing organization for a given level of risk or alternatively ensuring minimum level of risk for a given level of return. It aims to determine an appropriate mixed asset which attains optimum level of risk and return. The Concept of portfolio management basically based upon popular slogan "Don't put your all eggs in the one basket". i.e. Portfolio simply deals diversification. So it is clear that, minimization of risk and to maximize the return of investment is possible only through investment in a more than two securities. "Diversification is essential for the creation of an efficient investment because it can reduce the variability of returns around the expected return. This diversification may significantly reduce risk without corresponding reduction in the expected rate of return on the portfolio (Francis, 2003, p.228)." Portfolio management is the art of handling a pool of funds, so that it not only preserves its original worth but also overtime appreciates in value and yields an adequate return consistent with the level of risk assumed (George , Edward, Arthur, 1993).

"A portfolio simply represents the practice among inventors of having their funds in more than one asset. The combination of investment assets is called a portfolio." (Weston and Brigham, 1999, p.245) "Portfolio analysis is to build up a portfolio that has a maximum return at whatever level of risk investor deems appropriate." (Cheny & Moses, 1992, p.162)

Portfolio investment

Portfolio investment is the management of portfolio during the investment in financial assets, i.e. process of finding optimal portfolio from lot of financial assets is known as portfolio investment. Portfolio Investment is a tool which helps for proper utilization of resources. "Portfolio investment refers to an investment that combines several assets. The modern portfolio theory explains the relationship between assets risk and return. The theory is founded on the mechanics of measuring the effect of an asset on risk and return of portfolio. Portfolio investment assumes that the mean and variance of returns are the only two factors that the investor cares. Based on this assumption, the rational investor always prefers the highest possible return for a given level of risk or the lowest possible level of risk for a given amount of return. Portfolio, technically known as efficient portfolio, which is also termed as superior portfolio. The efficient portfolios not only do the function of risk and return of individual asset but also the effect of relationship among the asset on the sum total of portfolio risk and return. The portfolio return is straight weighted average of the individual asset. But the portfolio risk is not the weighted average of the variances of return of individual assets. The portfolio risk is affected by the variance of return as well as the covariance between the return of individual assets included in the portfolio and their respective weights. (Pradhan, 1992, p.295).

2.1.1 Objectives of Portfolio Investment

Several objectives have to be considered to become an executive investment program. The objective of portfolio analysis is to develop a portfolio that has maximum return at any level of risk where the investor seems appropriate. The main objectives of portfolio management are as follows: -

The safe and secured investment.

To increase capitalization.

To minimize the risk and maximize the return.

Ever liquidity

Stable income.

Easy marketability of asset.

Getting income with interest and dividends.

Tax benefit.

2.1.2 Assumption of Portfolio Investment

Portfolio Investment is based on following assumptions:

1. Investors maximize one period expected utility and possess utility curve which demonstrated diminishing marginal utility of wealth.

2. Investor estimates risk on the basis of variability of expected return.

3. Investors are willing to base their decisions solely in terms of expected return and risk. I.e. utility (U) is a function of variability of return (s.d.) and expected return E(r). Symbolically, $U = f[E(r)]$.

4. Investor considers each investment alternative as being represented by the probability distribution of expected returns over some holding period.

5. For any given level of risk investors for higher return to lower returns for any have given level of role of return. Conversely for any given level of role of return, investors refer less risk over more risk.(Francis and Archer, 1979, p.5)

2.1.3 Factors Affecting Investment Portfolio Decision

i) Amount of Investment

While determining the investment portfolio the financial manager should consider the amount of fund available with organization. Trading and manufacturing organization deals in securities only for the purpose of best utilization of their available surplus cash resource. The amount of surplus funds available with them will therefore decide the quantum of their investment in securities.

ii) Objective of Investment Portfolio

While determining the investment portfolio there should be clear objectives on investment in securities. The objective may differ from organization to organization. However, an organization, looking for investment of provident fund of its employees can invest only in such securities, which can assure the safety fund and its return.

iii) Selection of Investment

This is an essential decision to be taken by a financial manger for investing the assets. The selection of investment involves on assuring the type of securities, proportion between fixed and variable yield securities, selection of industries, selection of companies etc. (Maheshwari, 1997:79-81)

iv) Timing of Purchase

To maximize the profit, it is not only important for the financial manager to buy the right security but equally important to buy and sell it at the right time. It is the most intricate decision for financial manger.

2.1.4 Features of a Sound Lending and Investment Policy

The income and profit of the bank depends upon its lending and investment policy of its funds in different securities. The greater the credit created by the bank, the higher will be the chance of earning profit. A sound lending and investment policy is not only the prerequisite for bank's profitability, but also crucially significant for the promotion of commercial saving of a financially back ward country like Nepal. Some necessities for sound lending and investment policies are as follows:

i) Liquidity

Banks must keep minimum money which can repay the daily drawing amount because people deposit their money in the bank in different accounts in order to get repay the money when needed. So, liquidity is the ability of a firm to repay the money when needed. If bank can't repay the depositors, people do not trust the bank and goodwill of bank will decreases. It will negatively affect the bank. So, liquidity should be taken into consideration during the investment.

ii) Diversification

It means the investment in more than one sectors i.e. lending of loan from more than one sector is called diversification. It is based on important slogan   Don't put your all eggs in the one basket. It helps to minimize the risk and maximize the return.

iii) Safety and Security

Safety and security are very important things during the investment. Safety indicate good investment policy and security indicate amount of investment never be rapt or loss. So banks will only be successful when it considers safety and security during the investment. That means bank should never invest its funds in those securities which are subjected with more depreciation and fluctuation because a little difference may cause great loss. So, banks should

accept such types of securities which are commercial, durable, marketable, transferability and high market prices.

iv) Profitability

A commercial bank can only maximize its volume of wealth if it maximizes the return on its investment and lending. i.e. life of CB depends upon its profit. So the banks must invest their funds where maximum profits could be gained.

v) Legality

Illegal securities will bring out many problems for the investor. A commercial bank must follow the rules and regulations as well as different directions issued by the NRB and Ministry of Finance while mobilizing its funds.

2.1.5 Portfolio Management Policies

The portfolio management policies may vary according to company. Some common types of policies of portfolio management used are follows:

a) Aggressive Policy

This policy gives more emphasis on yields of securities. This policy assumes that if the market is strong and rising, the common stocks will be best outlets for the portfolio in rising market. This policy depends more on short –term source of fund.

b) Defensive Policy

This party gives more emphasis on safety of principal amount. This policy will be useful when it is suspected that the market will decline in near future. Bonds and preferred stocks are defensive types of securities. This policy depends more upon long term source of fund.

c) Moderate Policy

This policy suggests for the construction of balanced portfolio of various types of securities. It is the hedge of aggressive and defensive policy or hedge against a rise or fall in the stock market.

d) Income vs. Growth Policy

The income policy gives more emphasis on maximization of current income and attaches insignificant importance to capital gain and growth. The growth policy gives more emphasis on the capital appreciation of the portfolio.

2.1.6 Portfolio Return

The additional gain on investment is called return. It may be positive or negative. So investor can invest in different individual assets to decrease this type of uncertainty or verification. Thus total return of all individual investment affected by its individual weight (percentage of invested amount) is called portfolio return. "The expected return of a portfolio depends upon the amount of funds invested in each security, given expected return on the individual securities." (Weston and Capeland;2003, p.367) The expected return of the portfolio is the weighted average of the expected returns of the individual asset in the portfolio. The weights are the proportion of the investor's wealth invested in each asset, and sum of the weight must be equal one (Cheney and Moses;1992, p.652). The expected rate of return on the portfolio is calculated as:

$$\overline{R}_P = W_A \overline{R}_P + WB \overline{R}_B ..... W_N \overline{R}_N$$

Where,

$\overline{R}_P$ = Expected portfolio return.

W_A = Weight of investment, invested in asset A.

R_A = Expected return for asset A.

W_B =Weight of investment, invested in asset B.

R_B =Expected return for asset B.

2.1.7 Portfolio Risk

The portfolio risk cannot be calculated easily in comparison with the portfolio return because portfolio risk is affected by weighted of investment and also correlation of respective assets or covariance of respective assets. So to find out portfolio risk first of all risk of individual assets (variance or standard deviation), correlation between respective assets or covariance between respective assets must be calculated. Generally, the portfolio risk is less than the weighted average of the standard deviation (risk) of individual securities. The reason is that it ignores the relationship or covariance between the returns of two securities. "The portfolio risk is affected by the variance of return as well as the covariance between the return of individual assets included in the portfolio and respected weight." (Pradhan1992, p.295). "The measurement of a portfolio risk is not as a straight forward as the calculation of a portfolio's expected return. In order to calculate the risk of a portfolio, consideration must be given not only to the risk of the individual assets in the portfolio and their relative weights but also to the extent to which the asset's returns move together. The degree to which the assets returns move together is measured by the covariance or correlation coefficient. By combining the measures of individual assets risk, relative asset weights and the co. movement of asset's return the risk of the portfolio can be estimated. Cheney and Moses; 1992:653). The variance of returns from portfolio made up an asset is defined by following equation.

For two assets,

$$\dagger_P{}^2 = W_A{}^2 \dagger_A{}^2 + W_B{}^2 \dagger_B{}^2 + 2W_A W_B + COV(r_A r_B)$$

$$\dagger_p = \sqrt{W_A{}^2 \dagger_A{}^2 + W_B{}^2 \dagger_B{}^2 + 2W_A W_B + COV(r_A r_B)}$$

For three assets,

Where,

$\dagger_p$ =Standard deviation of portfolio rate of return

COV $(r_A \ r_B)$ =Covariance of returns between asset A & B.

The covariance is related to correlation coefficient as shown in equation:

COV $(r_A \ r_B) = \cdots_{AB} \dagger_A \dagger_B$

$\cdots_{AB}$ =Correlation coefficient between variable A & B.

2.1.8 Source of Risk:

Risk is the deviation between actual return and expected return. The risk can be created in several ways, which is called source of risk. Some sources of risk are as follows:

a) Management Risk:-

The effect on expected return or chances of losing by the cause of management activities is known management risk.

b) Interest rate Risk:

If risk is creating return due to change (increasing and decreasing) in interest rate at market, it is called interest rate risk. Generally, if there is the rise of market interest rate, then the values and market prices of an investment will fall, and vice versa.

c) Political Risk:

Total variability of return on stock caused by political issue is known political risk. The political word indicates both internal politics of company as well as the nation. For example Labor strike, MD change in company, bonus distribution and violence in country, change of government etc.

d) Liquidity Risk

It can be defined as the portion of total variability of return of an asset which results from price discounts given or sales commissions paid in order to sell the asset without delay. Liquidity risk is depended upon investor behavior. If investors want quickly to sale or buy the assets at certain time, then there will be the high fluctuation in the price of an assets or the selling price becomes different from marginal price. Due to this reason liquidity risk is created.

e) Default Risk

It is the portion of total risk of an investment that results from changes in the financial integrity of the investment. Default risk is the variability of return that investors experience, as a result of changes in the creditworthiness of a firm in which they invested. Investor losses from default risk usually result from security prices falling as the financial integrity of a firm weakness. By the time an actual bankruptcy occurs, the market prices of the trouble firm's securities will already have declined to near zero.

f) Bull-Bear Risk

Market price of securities is affected by different sources. So there may be the fluctuation of increasing and decreasing in price trend of stock. If price of securities is in increasing trend from low point fairly, it is called bull risk and if price of securities is fairly decreasing from upper point then it is called Bear risk.

g) Purchasing Power Risk

The variability in purchasing power of an investor due to inflation is called purchasing power risk. Inflation is the decreased rate of capacity of purchasing price. Inflation is calculated by consumer index.

2.1.9 Portfolio Diversification

Simply diversification means scared investment in more than one asset, whose main objective is to try to minimize the risk at the same level of return. Basically, investors are choosing low level of risk at same level of return. They seek to minimize inefficient variability from expected rate of return which is possible by investing in several assets instead of single assets, which is called diversification. So, diversification plays vital role in portfolio management. Diversification is the important tool to control portfolio risk. Investments are made in a wide variety of assets so that the exposure of risk of any particular security is limited. By placing one's eggs in many baskets, overall portfolio risk actually may be less that the risk of any component security considered in isolation (Bodie, Kane and Marcus; 2002, p.162, 208). "Investment risk can be reduced by including more than one alternative or categories of assets in the portfolio and by including more than one asset form each category. Hence, diversification is essential to the creation of an efficient investment because it can reduce the variability of returns around the expected return. This diversification may significantly reduce risk without a corresponding reduction in the expected rate of return on the portfolio." (Weston and Capeland; 2003, p.366)

2.1.10 Method of Diversification

i) Simple Diversification

In simple diversification, securities are selected randomly and are provided equal weight. So it is called simple diversification. In this method risk are divided into two places i.e. first removable risk, which is called systematic risk and other is non removable risk, which is called unsystematic risk. The simple diversification can reduce only systematic risk or avoidable risk and remain unsystematic risk that means this method cannot be reduce total risk into zero. It can be defined as "not putting all the eggs in one basket."

ii) Diversification across Industries

It is a second technique to diversify investment across industries. Under this technique, assets in the portfolio are selected from different industries rather than one industry. Group of same firms are known as industry. For example:-commercial banks, hotel companies, development banks etc.

iii) Superfluous Diversification

The number of assets that are included highly during the investment for diversification is called superfluous diversification. In this diversification, an investor can add further more assets for his portfolio so that he can reduce more risk in future. In this diversification method, an investor can invest in additional assets due to with the risk will automatically be decreased. Due to large number of assets, different types of problems can exist during the portfolio management such as high research cost, high transaction cost, impossibility of good portfolio management etc. This method is avoided because total cost of superfluous diversification is getting very high to manage such problems and also performance of portfolio will not improve which may lower the net return to the investor after the portfolio's management expenses are deducted.

iv) Simple Diversification across Quality Rating Categories

Different rating agencies are rating the companies under basis of default risk and categorize the same rated company. In this method the risk is reduced by diversification across the quality rating assets or securities. The risks of portfolio of different homogeneous quality rating are attained at different level of risk. So, under a simple diversification across quality rating categories, assets are randomly selected from the homogeneous quality rating. The highest quality portfolio of randomly diversified stocks will be able to achieve lower levels of risk than the simple diversified portfolio of lower quality of stocks.

v) Markowitz Diversification

This theory is developed by Harry M. Markowitz. Technically this theory is more effective to diversify as compared to other methods. So, it is called Modern Theory of Management'. This theory is focused on the correlations between securities. This theory assumes that the risk can be minimized in all correlated assets without perfectly correlated assets and process of minimizing risk should be decreased as per increased negative correlation. According to this method, diversifiable risk of perfectly negative correlated assets can be minimized into zero and sometimes it successes to minimize non diversifiable risk into certain level. So, it can minimize risk below the un-diversified level. According to Markowitz The portfolio theory establishes a relationship between a portfolios expected return and its level of risk as the criterion for selecting the optimum portfolio."

2.1.11 Terminology Used in Portfolio Investment.

Return

An additional gain during investment is called return. It can be categorized into realized return and expected return.

a) Realized Return

The initially received return is called realized return. It is also called historical return. It is used to find expected return. This type of return can be calculated by:

Holding (Single) Period Return: This is the return of capital gain plus additional gain during the holding period.

Multiple Period Returns: This is the average return of the different period which can be calculated by using arithmetic mean and geometric mean.

b) Expected return

The return which is expected to get in future but calculated at present by using historical data or probability is called expected return. It can be calculated by two ways:

Using Probability

Using Historical data.

Risk

The variation between actual return and expected return is called risk. "The total variation of the rate of return for an individual security as measured by the standard deviation or variance of the rate of return is called total risk. According to CAPM, total risk is divided into two parts. They are systematic and unsystematic risk (Thapa; 2001, p.71)."

Systematic Risk:

It is also called non diversifiable or irremovable risk because it cannot be avoided. Systematic risk is created due to external factors like; economic, political, sociological environment. It is that part of total risk which has not been eliminated. Systematic risk or undiversifiable risk is a function of its covariance with market portfolio of all assets divided by the variance of the market portfolio.(Weston & Copeland; 2003:392) Un-diversifiable risk can be measured by Beta (s) coefficient. Beta represents the degree of systematic risk due to underlying movement of security prices.

Unsystematic Risk

It is also called diversifiable risk or removable risk because it can be reduce or eliminated through diversification. This risk is created by internal factors such as labor union, inefficient raw material stored, lack of capital and technical problem etc. "Unsystematic risk or diversifiable risk is the portion of the total risk which is unexplained by overall market movements. Since it happens due to internal causes, it is diversifiable by increasing the

efficiencies and effectiveness for the productivity of the organization. This kind of risk is diversifiable risk or avoidable risk. Unsystematic risk can be reduced as more and more securities are added to a portfolio. Various studies suggest that 15 to 20 stocks selected randomly are sufficient to eliminate most of the unsystematic risk of a portfolio (Van Horne; 1996: 55-69) Various variables have been included to analyze the portfolio analysis. Among them, some variables are being explained as follows:

Covariance

Risk of individual assets is not enough for the best portfolio management. Covariance is a tool to indicate the joint variance of any two securities and also measure degree of returns of movement of securities. Negative value of 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. Signaling of covariance is same as correlation. If two assets are positively correlated their covariance also will be positive. So it is directly related with correlation of securities. It can be calculated as,

$COV(r_A \ r_B)$ =Covariance of returns between asset A & B.

$\cdots_{AB}$ =Correlation coefficient between variable A & B.

$\dagger_A$ =Standard Deviation of assets A.

$\dagger_B =$ Standard Deviation of assets B

Correlation

The relation between two variables is called correlation or relative measure of relationship is called correlation. It is bounded by +1 and -1. So correlation coefficient always lies between +1 to -1. +1 and -1 represents perfectly positive correlation and perfectly negative correlation respectively and zero represents no relationship between returns on the respective assets. So,

combining securities with perfectly positive correlation provide no reduction on portfolio risk because return movement of selected securities would be same. Risk of portfolio will be decreased as per value of correlation falling down from +1 to - 1.

Beta Coefficient

The relevant risk associated with an individual stock is based on its systematic risk, which depends on how sensitive the firm's operations are to economic events such as interest rate changes and inflationary pressures are to economic events such as interest rate changes and inflationary pressures. Because the general movements in the economy, the market risk of the stock can be measured by observing its tendency to move with the market, or with an average stock that has the same characteristics as the market. The measure of the stack's sensitivity to market fluctuations is called its beta coefficient. Beta is a key element of the CAPM."The beta of a portfolio is simply a weighted average of the individual stocks betas in the portfolio. Also it is a simple slope of the characteristic line. The beta of stock represents its contribution to the risk of a security market line (SML)." (Van Horne and Wachowicz, 1996, p.103). Always, beta of market should be 1 because it represents average risk for respective securities, more than 1 beta represents more than average risk of respective assets and vice-versa. The relationship between an asset's return and its systematic risk can be expressed by the CAPM, which is also called the security market line. The equation for the CAPM is,

$\mathbf{E(R_j)=R_f+(}\overline{R}_m\mathbf{-R_f)}\ \mathsf{s}_j$

where,

$\mathbf{E(R_j)=}$=Expected return for an asset.

Rf==Risk free rate of return.

$\overline{R}_m$ =Expected market rate of return.

s_j =Beta of asset.

Characteristic Line

A line which describes the relationship between an individual security's return and return on the market portfolio is called characteristic line. It depicts the expected relationship between excess returns for the stock and excess returns for the market's portfolio. The expected relationship may be based on the past experience, in which case actual excess returns for the stock and for the market portfolio would be plotted on the graph and the regression line best characterizing the historical relationship would be drawn. The slope of this line is beta. (Van Horne and Wachowicz, 1996, p.102).

Security Market Line (SML)

The SML is a straight line connecting the risk-free point and the average market return. Since the risk premium is proportion of stock beta, the risk free securities, such as the treasury bills which have zero risk, command no premium. (Pradhan, 2004, p.372)

Opportunity set

It is the group of portfolio which is available in the market i.e. all possible portfolios which can be developed by an investor is called opportunity set.

Efficient Portfolio

A portfolio which provides the highest possible expected return at equal level of risk or the lowest possible degree of risk at equal level of expected return is called efficient portfolio.

Efficient Set

Group of dominant portfolio or effective portfolio is known as efficient set.

Minimum Variance Portfolios

Minimum variance portfolio is also called the feasible least risky portfolio with the lowest level of risk in efficient frontier. The minimum variance portfolio of any number of assets is determined by the weighted distribution of asset held on portfolio (Pradhan, 1992, p.900).

Optimum Portfolio

The portfolio which gives minimum risk and possible higher return on given set of portfolios is called optimum portfolio.   Given the efficient frontier and risk return indifference curves, the optimal portfolio is found set the point of tangency between the efficient frontier and a utility indifference curve. This point represents the highest level of utility the investor can reach.   (Prananara, 1998, p.13)

Over Price and Under Price

If the expected rate of return is less than required rate of return, it is called overpriced securities. Investor will be desired to sell these stocks because there will be a tendency for the price to decline. If the expected rate of return is greater than the required rate of return, it is called under priced security. Investor will be desired to purchase shares of the stock.

2.1.12 Portfolio Performance Measure

Sharpe's Performance Measure

Sharpe's performance considers both risk and return of the specified security in assessing the performance of portfolio. Sharpe's index of performance generates ordinal number that is determined by both the risk and return of the portfolio or other investment being evaluated. It can be stated as:

$$S_P = \frac{risk premium}{total risk} = \frac{ri - R}{\dagger i}$$

where,

SP = Sharpe's index of portfolio performance for portfolio i.

ri= average return from portfolio i.

$\dagger_i$=standard deviation of returns for portfolio i.

R = riskless rate of interest

Treynor's Portfolio Performance Measure

Jack Treynor conceived an index of portfolio performance that is based on systematic risk, as measured by portfolio's beta coefficient. To use Treynor's measure, the characteristic regression lines of portfolio must be estimated. Treynor suggests measuring a portfolio's return relative to its systematic risk rather than relative to its total risk. Treynor's index is defined as follows:

(Sharpe and Alexander; 2003, p.657-58-59)

$$T_P = \frac{riskpremium}{systmeticriskindex} = \frac{ri - R}{bp}$$

TP = Treynor's index of performance for portfolio P.

ri = The average returns from portfolio i.

R = Risk less rate of interest.

bp = The beta for the portfolio

Jensen's Portfolio Performance Measure

Michael Jensen has also developed a method for evaluating a portfolio's or asset's performance. Jensen's measure is the average return on the portfolio over above that predicts the CAPM, given the portfolio's beta and the average market return. Jensen's measure is a portfolio alpha value. The Jensen's measure is computed with regression equation. (Thapa,2001:88-89)

ri , t -Rt =Ai Bi (rm, t- Rt) +Ui , t

where, (ri , t- Rt)= rp, t = The risk premium for asset i in the time period t.

2.2 Review of Popular Models of Portfolio

2.2.1 Markowitz's Portfolio Selection Model

Markowitz studied at the University of Chicago (M.A., 1950; Ph.D., 1954) and then was on the research staff of the RAND Corporation in Santa Monica, California (1952–60, 1961–63), where he met Sharpe. He then held various positions with Consolidated Analysis Centers, Inc. (1963–68), the University of California, Los Angeles (1968–69), Arbitrage Management Company, (1969–72), and IBM's T.J. Watson Research Center (1974–83) before becoming a professor of finance at Baruch College of the City University of New York. In 1994 he became a research professor of economics at the University of California, San Diego. The research that earned Markowitz the Nobel Prize involved his **portfolio theory**," which sought to prove that a diversified, or optimal," portfolio—that is, one that mixes assets so as to maximize return and minimize risk—could be practical. His techniques for measuring the level of risk associated with various assets and his methods for mixing assets became routine investment procedures. He also developed a computer language called Simscript, used to write economic-analysis programs (http://www.britannica.com/eb/article-9051026). It is so simple model or basis model. This model is developed by Markowitz at 1950. He used realized (past) data or probability and analyze it by statistically or mathematically to define portfolio.   The portfolio theory establishes a relationship between a portfolio expected return and its level of risk as the criteria for selecting the optimum portfolio. So as 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 these returns for the individual securities. (Markowitz; 1952:77-91) Markowitz has highlighted following points on his model:-

The proportion of wealth investment in each asset by investor is called weight.

Expected return of the portfolio is the weighted average of the expected returns of the individual assets in the portfolio.

Portfolio risk is the total risk with effect of weight of investment, correlation or covariance of respective assets.

The portfolio model developed by the Markowitz is based on the following reasonable assumptions:

The expected return from an asset or portfolio is the mean value of a probability distribution of the future returns over some holding period.

The risk of an individual asset or an individual asset or portfolio is based on the variability of returns (i.e., the standard deviation or variance).

1. Investors depend solely on there estimates of return and risk in making their investment decision. This means that an investors utility (indifference) curves are only a function of expected return and risk.

2. Investors adhere to the dominance principle. That is, for any given level of risk, investors prefer assets with a higher expected return to asset with a lower expected return for assets with the same expected return investors prefer lower to higher risk.

3. The risk of an individual asset on the variability of returns (standard deviation or variance)

4. Investors depend slowly on their estimates of return and risk in making their investment decisions. This means that an investor's utility (indifference) curves are only a function of expected return and risk.

5. Investors adhere to the dominance principal. That is for only given level of risk, investors prefer assets with a higher expected return to assets with lower expected return for assets with the same expected return, investors prefer lower to higher risk.

"According to the Markowitz, the investors should maximize expected return. This rule implies that the non-diversified single security portfolio with the highest expected return is the most desirable portfolio. Expected rate of return for any assets is the weighted average rate of return, applying the probability of each rate of return as the weight. The portfolio return is the weighted average expected return of the individual stock in the portfolio with weight being the fraction of the total portfolio invested in each stock." (Weston & Brigham; 1982:260)

"According to Markowitz, the expected return of the portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weights are proportional to the investors wealth invested in each asset, and sum of the weights must be equal one." (Cheney & Mosen; 1992; p.651-652).

The portfolio's expected return is defined into following equation:

$$\bar{R}_P = W_A \bar{R}_P + WB \bar{R}_B ..... W_N \bar{R}_N$$

Where,

$\bar{R}_P$ = Expected portfolio return.

W_A = Weight of investment, invested in asset A.

R_A = Expected return for asset A.

W_B = Weight of investment, invested in asset B.

R_B = Expected return for asset B.

Markowitz used the variance of return as the measure of risk. The risk of the portfolio is not the weighted average of the variances of the expected returns of the individual assets in the

portfolio however. Estimating portfolio risk in this way would obscure the effects of combining assets with different return patterns in the portfolio. Portfolio expected return and risk will be explained and illustrate in the next two sections. Portfolio analysis considers the determination of future risk and return in holding various bundles of individuation securities. Portfolio expected return is a weighted average of the expected return of individual securities but portfolio variance is a sharp contrast, can be something less than a weighted average of security variance. As a result, an investor can something reduce portfolio risk by adding another security with greater individual risk than any other security in the portfolio (Bhalla, V.K; 2001).

$$\sigma_P^2 = W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B + COV\ (r_A\ r_B)$$

$$\sigma_p = \sqrt{WA\,2\,A2 + WB\,2\,B2 + 2WA\ WB + COV(rArB)}$$

For three assets,

where,

σ_p =Standard deviation of portfolio rate of return

COV ($r_A\ r_B$)=Covariance of returns between asset A & B.

The covariance is related to correlation coefficient as shown in equation:

COV ($r_A\ r_B$)= $\rho_{AB}\,\sigma_A\,\sigma_B$

ρ_{AB} =Correlation coefficient between variable A & B.

According to Markowitz, the expected return of the portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weights are proportional to the investors wealth invested in each asset, and sum of the weights must be equal one.

2.2.2 Capital Asset Pricing Model

William Forsyth Sharpe American economist who shared the Nobel Prize for Economics in 1990 with **Harry M. Markowitz** and **Merton H. Miller**. Their early work established financial economics as a separate field of study. Sharpe received his Ph.D. in economics from the University of California at Los Angeles in 1961. He was influenced by the theories of Markowitz, whom he met while working at the RAND Corporation (1957–61). Later, Sharpe taught economics at the University of Washington in Seattle (1961–68) and at Stanford University (from 1970) until he retired from teaching to head his own investment consulting firm. Sharpe received the Nobel Prize for his "**capital asset pricing model**," a financial model that explains how **securities** prices reflect potential **risks** and returns. Sharpe's theory showed that the market pricing of risky assets enabled them to fit into an investor's portfolio because they could be combined with less-risky investments. His theories led to the concept of "beta," a measurement of portfolio risk. Investment analysts frequently use a beta coefficient to compare the risk of one stock against the risk of the broader stock market (http://www.britannica.com/eb/article-9067165).

This model is developed by William F. share in 1960 and model simplifying the mathematical calculations required by the Markowitz model. However conceptually, its application remained several limitations. Sharpe assumes that, for the sake of simplicity, the return of a security could be regarded as being linearly related to a single index like the market index. The mechanical complexity of the Markowitz's portfolio model kept both practitioners and academics away from adopting the concept for the practical use. As a result, what is referred to as the capital assets pricing model (CAPM) was developed.(Sharpe; 1964:425)

The CAPM states that the expected risk premium on each investment is proportional to its beta, this mean that each investment should lie on the sloping security market line connecting treasury bills and market portfolio.

Capital market theory (CMT) uses portfolio theory as its starting point: thus, the assumptions underlying portfolio theory also pertain to the CAPM. The assumptions underlying CMT and the CAPM appear less realistic than the portfolio theory assumptions.

The CAPM is based on the following assumptions:

All investors are risk-averse. So when given a choice between two identical portfolios, they will choose the one with the lower standard deviation.

1. Investors evaluate portfolios by looking at the expected returns and standard deviations of the portfolio over a period horizon.

2. Individual assets are infinitely divisible means that an investor can buy a fraction of a share if   he or she desires.

3. Investors can borrow and lend at risk-free rate of interest.

4. Taxes and transaction costs do not exist, i.e. there are no tax effects, costs of acquiring information or transecting costs associated with buying or selling securities. There are often referred to as perfect market assumptions. Markets are assumed to be competitive therefore the same investment opportunities are available to all investors.

5. All investors have the same one period horizon.

6. There are no unanticipated changes in inflation or interest rate.

7. The risk free rate is same for all investor.

8. Information is freely and instantly available to all investors.

9. The capital markets are in a state of equilibrium or striving toward equilibrium, there are no under pricing or overpricing exists, the prices will more to correct this dis-equilibrium situation. (Cheney & Moses, 1992:687)

According to Madura, J. (2001), The significant contribution of this model is as follows:

1. It provides a measure of the risk of an individual security which is consistent with portfolio theory.
2. It enables us to estimate the undiversifiable risk of a single asset and compare it with the undiversifiable risk of a well diversified portfolio.
3. CAPM shows the relationship between an asset's return and its systematic risk.
4. The CAPM is sometimes used to estimate the required rate of return for any firm with publicity traded stock.
5. The CAPM is based on the premise that the only important risk that of a firm is systematic risk or the risk that results from exposure to general stock movements.
6. The CAPM is not concerned unsystematic risk, which is specific to an individual firm, because investors can avoids that type of risk by holding diversified portfolios.

$$E(Rp)=Rf+\frac{\{E(Rm)-Rf\}}{\mathsf{S}m}x\mathsf{S}p$$

Where,

E(Rp) = Expected return on portfolio with risk free assets.

E(Rm) = Expected return on market.

m = Beta of market = 1

p = Beta of portfolio

RF = Risk free rate of return.

2.2.3 Arbitrage Pricing Theory Model

CAPM is based on only a single factor of the average market performance but APT has taken a broad concept about it. Stephe A. Ross has developed a multifactor model in 1976, is called arbitrage pricing theory. The APT is based on the 'law of one price' which says that the same goods cannot be sold with two different prices. If the same goods were sold with different prices, arbitragers will buy the goods where it is cheap, there by bidding up the low price and simultaneously sell the goods where its price is higher, thereby driving down the high price. Arbitragers will continue this activity until prices for the goods are equal (Alexander, Sharpe & Bailey; 2003:295) The APT is termed to be superior on the ground that it is more general than CAPM. The CAPM assumes that the rate of return on a security is influenced by only one factor that is the average market performance. Unlike CAPM, the APT assumes that the rate of return on a marketable security is a linear function of the movement of a set of economic factors common to all securities. The random rate of return under APT models is a linear function on K factor as follows:

$$R_j = E(R_j) \; b_{j1}f_1 + b_{j2}F_2 + \ldots\ldots\ldots + b_{jk}F_k + e_j$$

where,

R_j = Random rate of return on stock j.

$E(R_j)$ = Expected rate of return on stock j.

b_{jk} = sensitivity of stock j's return on stock Kth factor.

F_k = mean zero K^{th} factor common to the return of all assets under consideration.

e_j = Random error term indicating the unique effect on return.

The FK is the mean zero random variable of Kth factor and it is the result of the deviation of realized value from the expected value. The error term, ej is the unique or unsystematic risk

which can be eliminated through diversification and does not affect the stock rate of return. The name arbitrage refers to the market condition where two or more securities of identical factor sensitivities are priced differently, providing opportunities to make profit by selling overpriced securities short and buying under priced long. Such transactions are called arbitrage which allows market participants to make profit without investment and without assuming any risk through short selling and buying long for the amount equivalent to short selling. Such opportunity rarely exists in an efficient market and any one can benefit from arbitrage transactions. Otherwise, prices will continue to change until the expected return from such transactions is zero. Therefore the expected arbitrage profit is zero in the long run if the market functions efficiently. The APT is based on one pricing theory, and causes no investment, no risk, and no gain.

Stephen states on his APT is that if no arbitrage opportunities exist in the market, the asset pricing is a function of risk free rate and a set of relevant factors related risk premium. Therefore, it is true that the APT is not different from CAPM which also states that the return on a security is equal to the risk free rate and risk premium for the market related factor. The market rate of return is in fact influenced by various economic factors such as inflation, GDP, Tax laws etc. Hence, accounting of market rate of return does reflect the consideration of many economic factors that influence all assets in the market. Given this argument, there should not be significant difference in expressing the rate of return either using only the market rate of return or using specially all the factors affect the market. The APT logic is not much different from the logic used in the CAPM. Similar to CAPM, only the set of systematic risk is priced in the above model, and no price is assigned for the diversifiable risk. The risk premium for systematic risk of each factor is determined as the market price per unit of risk multiplied by the degree of factors systematic risk (Pradhan; 1992:286-287)

2.3 Review of Articles

There are not many articles available in published form related to portfolio management of commercial banks of Nepal.

Ghimire, (1999), in his article entitled **"*Investment Trends*"** published on Rising Nepal on 13th May, has mentioned that most of the commercial banks of Nepal are ready to pay the penalty in spite of investing on rural, priority sector, poverty and deprived areas. In the directives of Nepal Rastra Bank, it was clearly mentioned that all the commercial banks (under NRB) should invest 12% of its total investments to the priority sectors. Out of which, they should invest 3% to the lower class of countrymen. However, these commercial banks are unable to meet the requirements of NRB. The foreign joint venture banks used to justify that they do not have any network among these priority areas. So, if investment was done to these areas, operation cost will be very high, that exceeds the penalty if investment was not done. That is why they are interested in paying penalty rather than investing in priority areas.

Thapa, (2003), in his article **"*Managing a Banking Risk*"** published on 'The Kathmandu Post' daily of 9th March, accomplished the subsequent issues. Banking and financial service are among the fastest growing industries in developed world and are also emerging as cornerstones for other developing and underdeveloped nations as well. The primary function of a bank is to take risk. Risk cannot be avoided by the bank but can only be managed. There are two types of risk. The first is the diversifiable risk or the firm's specific risk which can be migrated by maintaining an optimum and diversified portfolio. This is due to the fact that when one sector does not show well performance the growth in another might offset the risk. Thus, depositor must have the knowledge of the sectors in which their banks have been lending. The second is undiversifiable risk and it is correlated across borrower countries and

industries. Such risk is not under control of the firm. According to him, risk management of the banks is not only crucial for optimum tradeoff between risk and profitability but is also one of the deciding factors for overall business investment lending to growth of economy. Managing risk not only needs sound professionalism at the organizational level but appropriate environment need to be developed also. Some of the major environmental problems of the Nepalese banking sector are under government intervention, relatively weak regulatory fame, consideration of the international standard, major corporate governance and the major of all is lack of professionalism. The only solution to mitigate the banking risk is to develop the badly needed commitment eradication of corrupt environment especially in the disbursement of lending, and formulate prudent and conducive regulatory framework.

Mr.Timilsina, (2004), in his article entitled "*Managing Investment Portfolio*". In his article, he is confronted with problems of managing investment portfolio particularly in times of economic slowdown like ours. A rational investor would like to diversify his investment in different classes of asset so as to minimize risks and earn a reasonable rate of return. An investor has to evaluate the risk and return of each of the investment alternatives and select an alternative which has lower degree of risk and offer at least reasonable rate of return. Once can draw a safe side conclusion to invest all the money in government securities only but it is not a rational decision. Similarly other can invest his whole amount in equity share assuming high risk which is also not a wise decision since stock market these day is much dwindling and unpredictable. Therefore, it makes us clear that investing in one calss of financial asset is not a good portfolio.

Mahat, (2004), in his article "*Efficient Banking*" published on 'The Kathmandu Post' daily of 28th April, he has accomplished, the efficiency of banks can be measured using different parameters. The concept of productivity and profitability can be applied while evaluating

efficiency of banks. The term productivity refers to the relationship between the quality of inputs employed and the quantity of outputs produced. An increase in productivity means that more output can be produced from the same inputs or the same outputs can be produced from fewer inputs. Interest expense to interest income ratio shows the efficiency of banks in high yielding asset. In other words, it reflects the efficiency in use of funds. According to Mr. Mahat, the analysis of operational efficiency of banks under the changed scenario and decide when to bank upon. This may also help the inefficient banks to upgrade their efficiency and be wires in the situation developing due to slowdown in the economy. The regulators should also be concerned on the fact that the banks with unfavorable ratio may bring catastrophe in the banking industry.

2.4 Review from Journal

Detemple,Garica and Rindisbcher, (2003), in his journal entitled "*A Monte Carlo Method for Optimal Portfolio*" published on February. In this paper, a comprehensive approach has been developed for the calculation of optimal portfolios in asset allocation problems with complete markets. The major benefit of their method, which relies on Monte Carlo simulation, is its flexibility. Indeed, the approach permits

(i) any finite number of state variables,

(ii) any diffusion process for the state variables, and

(iii) any number of risky assets. It is also valid for any preference relation in the Von

Neumann-Morgenstern class. This flexibility provides a distinct advantage over alternative approaches to the problem.

The paper has also derived a number of economic results that can be used as guidelines for sound asset allocation rules. Naturally, the performance of these rules was dependent upon

empirical sophistication of the underlying model of financial market. Clearly, they did not suggest that the model investigated here are adequate in that respect, although they appear more realistic that the specifications examined in the prior literature. But they have proposed great generality offers that can be easily adapted to address the asset allocation problem for a large class of financial market

models.

Markowitz and Perold, (1981), on his journal entitled *"Portfolio Analysis with Factors and Scenarios"*. Mainly, there are two findings in their study i.e. (i) how the scenario model can be extended to yield more meaningful estimates of covariance amongst security returns, and (ii) how the well known computational advantages of the multifactor model can also be realized for a scenario, or mixed scenario and factor model. These developments should greatly enhance the practicability of the scenario approach for large scale portfolio analysis.

Goetzmann, (1999), on his journal entitled *"An Introduction to Investment Theory"*, investors want to make more money in the future. The key measure of benefit derived from a security is the rate of return. Investor's return is a measure of growth in wealth resulting from that investment. This growth measure is expressed in percentage forms to make it comparable across large and small investors. Stock returns may be riskier or more volatile, but this concept was difficult to be expressed in simple way. To do so, he borrowed a concept from statistics, called Standard Deviation. It is a single measure, allowing to quantity asset returns by risk, and it also provides the bases for investors' discussions about portfolio choice.

2.5 Review of Previous Thesis

Review of previous thesis also helps us to find objective of portfolio and major findings of research. Some related previous thesis are as follows:

Manandhar, (2003), on her research entitled **"***Analysis of Risk and Return on Common Stock Investment of Commercial Bank in Nepal*** . Her analysis was based on five commercial banks that are NABIL, BOKL, HBL, NBBL, and NIBL and she has taken five years historical data since 053 B.S. to 058. The main objective of the study is to analyze risk and return on common stock investment of CBs and other objective are as follows:

1. To calculate risk and return of their portfolio.

2. To examine risk and return on common stock of the selected banks.

3. To identify whether stocks of selected companies are over-priced, under priced and equilibrium priced.

Her major findings are:

Stocks have greater volatility risk than other investment, which takes a random and unpredictable path. Stock market is risky in the short term and it is necessary to prepare the investors for it. This study used the historical data and she found that FY 057/058 is best for banking sector according to market capitalization.

Expected return of the common stock of BOKL is maximum (i.e. 1.1267) due to the effect of unrealistic annual return. Similarly, expected return of the common stock of NIBL is found minimum (i.e. 0.4917). On the basis of sector-wise comparison, expected return on banking sector (i.e. 67.39%) is higher and others sector is the least (i.e. 0.65%).

Risks associated with common stock investment of different selected companies are 1.3949, 0.4154, 0.7392, 0.6798 and 0.1429 of BOKL, NABIL, HBL, NBBL, and NIBL respectively. In the context of comparison of banking sector with other sector expected return is greater than that of other sector. Standard deviation of other sector is greater than that of other sector. CV of others sector is greater than that of others.

One of the main significance of beta coefficient is in capital asset priding model (CAPM). CAPM is a model that describes the relationship between risk and return BOKL, NABIL, HBL, NBBL's beta coefficient is 2.30, 2.01, 1.0853, 1.7632 and 1.7441 respectively, which is greater than one. Therefore such banks common stocks are more volatile with market. On the other hand
NIBL's beta coefficient is 0.3461, which is less than one, therefore common stock of NIBL is said to be less volatile with market.

Stock of all banks in this study are said to be under priced. These companies'common sticks are worth to purchase, as their expected return is greater than required rate of return. Portfolio return is greater than portfolio risk of two banks (NBBL and HBL).

Khaniya, (2003), in her thesis entitled *Investment Portfolio Analysis of Joint Venture Banks*". Her analysis is based on five listed joint venture banks: NABIL, SCB, HBL, NBBL & EBL as a sample. The main objectives of the study are as follows:

1. To analyze the risk and return ratios of commercial banks.
2. To evaluate the financial performance of joint venture banks.
3. To study exiting investment policies taken by Nabil in various

4. To study portfolio structure Nabil bank ltd. IN investment as compared to other joint venture banks.

5. Preference given by Nabil bank Ltd. For investment between loan and investment, Investment in real fixed assets, investment in financial assets.

Her major findings are as follows:

1. SCBNL and HBL have better position. NBBL and NABIl have a position in the industry. But EBL has a very low position in the industry because of having lowest mean return on shareholder's fund resulting from the negative returns in the fiscal years 1995/96 and 1996/97.

2. SCBNL has the highest mean return and EBL has the lowest return. Expect EBL, all other four banks have good performance.

3. Among other joint venture banks, SCNBL has the highest return and EBL has above mean return than industry average. SCBNL and EBL mobilizes the funds in investment title is higher than the standard ratio.

4. NABIL, SCBNL and HBL are investing low amount of deposits on loan and advance which is lower than industry average and NBBL and EBL have invested a high amount of deposits to loans and advances title which is higher than industry average.

5. NABIL is investing the highest amount of funds on NRB bond as compared to other JVBs. i.e.3%. NBBL has invested no amount of funds in this title and EBL has invested the lowest of funds. i.e. 0.4% and SCBNL and HBL have invested above industry average. SCBNL has the highest EPS and EBL has the lowest EPS. Similarly HBL also has above mean EPS than industry average and that of NBBL is lower than industry average.

6. HBL has the lowest beta coefficient among the five JVBs which means that the systematic risk of HBL is the lowest among JVBs. The portfolio return of NBBL is 94%. This return is the average of capital gain yield and dividend yield.

7. The coefficient of correlation between loans and advance in private sector and portfolio return if joint ventures banks come out to be rxy = -0.6. Therefore it indicated that There is negative correlation between loans and advances in private sector and portfolio return of five JVBs in Nepal.

Shrestha, (2004), conducted a study on "*Portfolio Management in Nepal a case study of Listed Commercial Bank in NEPSE*" . His research considering nine banks (EBL, BOK, HBL, NABIL, SBI, NIB, NIC, NBB, SCB) as a sample size from listed commercial banks of NEPSE. The specific objectives of his study are as follows:

1. To evaluate common stock of listed commercial banks under present study in terms of risk.

2. To calculate beta for analysis of systematic risk associated with common stock prices and identify the range for true beta and true alpha.

3. To construct portfolio opportunity sets as different weighs of investment and identify optimal portfolio.

4. To conduct test of significance for difference between portfolio return and market return.

5. To undertake test of significance for difference between portfolio beta and market beta.

6. To carry out test of significance for difference in annual returns of the stocks of banks.

During his study, he had identified that the stocks of NIC banks are overpriced and the rest of the stock of banks are underpriced. The test of first hypothesis research indicated that there was no significant difference between portfolio return and market return. The testing of second hypothesis showed that there was no significant difference between portfolio beta and market beta while the testing of third hypothesis showed that there was no significant difference in annual returns of the three categories of banks, classified on the basis of their market capitalization, where the first category had included HBL, NABIL and SCB. The second category included EBL, NBB, NIB and SBI whereas the third category included BOK and NIC.

Shrestha, (2006), in his thesis entitled "*A study on Investment Portfolio of Commercial Banks in Nepal*. His analysis is based on five commercial banks that are SCBL, EBL, HBL, NIBL and NSBIBL. The general objective of this research is to identify the current situation of investment portfolio of CBs in Nepal.

 The main objectives are as follows:

1. To analyze the investment portfolio of Commercial Banks.

2. To analyze the risk and return of selected commercial banks on investment using portfolio concept.

3. To forecasting and examine the trend of investment and to provide complementary measures based on analysis.

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

1. Proper investment on various securities. i.e. balance allocation of funds on various government securities such as Treasury bills, National saving bonds, Development

bonds etc and fixed income percentage rate that help to reduce the variability of return. In the analysis of risk and return comparatively SCBNL have more return from investment on government securities like same NABIL has better position on investment on loan and advances.

2. The return on share and debenture of commercial banks shows wide fluctuation. These fluctuations in returns are caused mainly by the volatility of the share prices in market and by the changes in dividends in some extent. Comparatively to other assets, share and debenture has higher return and higher risk. Hence, it is cleared from analysis that investment on share and debenture is high risk assets.

3. The return is slightly lower than average return from loan and advances and share and debentures. The portfolio risk on investment is less than that of risk on loan and advances and risk on share and debenture. It shows there is vital role of government securities to reduce the risk.

4. The study shows that the portfolio return is decreasing trend every year. It shows the investment portfolio concept is not using properly by the selected banks.

5. SCBNL is the bank that mobilized its total deposits more effectively on government securities. EBL has concentrated to mobilize its depositor's funds in loan and advances. HBL, NSBIBL and NIBL are not so successful to mobilize its depositor's funds in government securities. But NSBIBL is also more successful to mobilize depositor's funds in Loan and advances as well as share and debentures. And NIBL effectively mobilize its depositor's funds in share and debenture.

Paudyal, (2006), conduct a study on *A study on Portfolio Analysis of Commercial Banks in Nepal*" with the objective of ,

1. To evaluate financial performance of commercial banks of Nepal.

2. To examine the existing situation of portfolio management of Nepalese commercial bank.

3. To analyze risk and return of commercial banks.

4. To analyze the investment and loans and advance portfolio of commercial banks.

5. To show the present position trend of loan and advance and investment to total deposit and forecast it.

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

1. The industrial mean ratio of investment to total deposit is 21.86%. The only EBL has a greater ratio above industrial mean ratio. But other banks have lower investment to total deposit ratio than industrial mean ratio. It shows that EBL has effective mobilization its deposit on investment to generate the return. But other banks are investing its deposits in lower ratio that average industry ratio. Similarly, the CV of EBL is the lowest. Lower ratio indicates that cost consistent which is better than high consistent. The industry CV ratio is 32.37%. The EBL and HBL have the lesser CV ratio to the comparison with industrial CV ratio. It shows variability of ratio of EBL and HBL is the most consistent.

2. Among four commercial banks HBL has invested its more funds on government securities and lesser fund on share and debenture. All banks have invested more thatn 83% amount in government securities. Only BOKL has invested it's 0.63% on non-resident sector. None of the banks hav invested any amount on NRB bond.

3. All of the selected commercial banks ae granting very high amounts its loan and advances to private sector. NIBL and HBL have given second priority to government enterprise and EBL and BOKL give second priority to foreign bills purchase and

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discount. EBL and BOKL have granted very low loan and advance to government enterprises.

4. BOKL has the highest expected return and HBL has the lowest expected return. NIBL has also negative return. The market expected return is 6.47%. The risk of BOKL is the highest and HBL has the lower risk. NIBL and EBL have risk 19.41% and 36.03% respectively. The market risk is

5. 15.86%. In conclusion we can say that higher the risk higher the return andvice versa.

6. Total risk of BOKL stock is highest and total risk of fHBL stock is lowest among four commercial banks.

7. HBL has the highest portfolio return, NIBL stock has lowest portfolio return and it has the highest portfolio risk. It means NIBL invest its amount in risky assets so it become in loss. EBL and BOKL have a portfolio return of 4.79% and 4.80% respectively and portfolio risk is 0.28% and 5.77% respectively. It shows that the portfolio return of three banks is not so different but risk of BOKL is higher than HBL and EBL.

8. EBL is utilizing its more collected fund on loan and advances and investment which mean percentage ratio is 95.85%. It is the highest average ratio among four commercial banks. HBL is in lost position on its 67.36% Other banks NIBL and BOKL are utilizing their deposit in loan and investment is 83.59% and 94.73% respectively.

Poudel, (2008), has undertaken a study entitled "*Portfolio Analysis on Common Stock Investment of Commercial Banks in Nepal* ". His research based on five joint venture banks (NABIL, NBBL, SCBL,HBL, and EBL), was to identify the current situation of investment portfolio of joint venture banks in Neal. His main objectives are as follows:

1. To evaluate the common stock of selected commercial Banks in terms of risk and return.

2. To study risk and return associated with common stock investment of listed commercial Bank.

3. To examine systematic an unsystematic risk associated with stock.

4. To determine whether the share of listed commercial Banks in Nepal are over-priced or correctly valued by analyzing the risk and return characteristic of the individual Bank.

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

1. EBL has the highest rate of return i.e. 32.90%, and NBBL has the negative rate of return. i.e. -27.20%, NBBL stock is the less risky assets and NABIL stock is the most risky assets. EBL is the best security measuring then in terms of CV, which is 1.3012.

2. Beta coefficient of NABIL is the highest i.e. 1.5061 which is greater than 1. Thus it indicates that the return of NABIL is more volatile that means every 1% changes in market return leads to 1.5061 changes in NABIL is the most defensive stock than other due to the lowest beta coefficient. i.e. 0.4939.

3. Considering the market risk and return, expected return of overall market is 5.55% which is the lowest than the expected return of NABIL, SCBL, HBL and EBL. NBBL has the negative return. The risk is also found in minimum portfolio. i.e. 28.67% which represent the lower sensitivity on investment in the market.

4. Correlation co-efficient between NABIL and EBL is the highest .i.e. 0.9942, which is about near of perfectly positively correlation (1) and correlation co-efficient between

SCBL and NBBC is the lowest that is only 0.5839 which means common stock of such banks are less correlated.

5. Considering the sharps performance measure, the portfolio of HBL and NBBL has the best performance because of the highest risk premium return per unit of total risk that is 1.4015. The portfolio of NABIL and EBL is worst due to the negative risk premium return.

Chhetri, (2008), in his thesis entitled "*Portfolio Analysis on Common Stock Investment of Joint Venture Banks in Nepal* . His research based on five joint venture banks (NABIL, NBBL, SCBL, HBL, and EBL), was to identify the current situation of investment portfolio of joint venture banks in Neal. His main objectives are as follows:

1. To evaluate the common stocks of JV Banks in terms of risk and return and perform sector wise comparison on the basis of market capitalization.

2. To estimate an optimal portfolio among common stock investment of JVBs and analyze comparative risks and returns position of these sectors.

3. To determine whether the share of J.V. banks in Nepal are over-priced, under priced or correctly valued by analyzing the risk and return characteristic of the individual bank.

4. To examine systematic and unsystematic risk associated with securities.

5. To draw conclusion, make relevant suggestion and practical ideas and recommendations based on the analysis of data.

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

1. Considering the market risk and return, the expected return and S.D. of overall market is 5.55% and 28.67 respectively. Similarly, the coefficient of variation of the market is 5.1659.

2. From the analysis of required rate of return and expected rate of return, it has become clear that NABIL, SCBL, HBL and EBL's common stocks are under priced and NBBL and SBI's stocks are overpriced.

3. While creating the portfolio between the two assets of all the sample banks, the optimal portfolio of NBBL and EBL gives the maximum expected return that is 62.37% where as, the portfolio of NABIL and EBL gives the lowest expected return i.e. 3.37%.

4. Considering the portfolio risk, the portfolio of HBL and SBI has maximum S.D. that is 75.16 but the portfolio of HBL and NBBL has the lowest S.D. that is 35.79%.

5. Correlation between NABIL and HBL is found highest between mentioned banks under the study and the correlation of SCBL and NBBL is the lowest correlation. However, all the banks are positively correlated but they are neither perfectly correlated nor negatively correlated.

6. Considering the Sharpe's performance measure, the portfolio of HBL and NBBL has the best performance because of the highest risk premium return per unit of total risk and portfolio of SCBL and SBI is worst due to the lowest risk premium.

Chaudhary, (2008), in his thesis entitled "*A Study on Investment Portfolio of Listed Commercial Banks with Reference to NABIL, NIBL, NSBL and EBL*". His main objectives are as follows:

1. To analyze the risk and return of selected commercial banks on investment using portfolio concept.

2. To analyze the investment portfolio of commercial banks. To forecast and examine the trend of investment and to provide complementary measures based on analysis.

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

1. Return on share and debenture of CBs show wide fluctuation caused mainly due to volatility of share price in the market and changes in dividend paid by CBs to some extent. NABIL has more return from government securities and loan and advance.

2. NABIL is the bank which shows better performance on their investment strategies. NABIL is successful in effective mobilization of its overall resources among four CBs. Similarly NIBL and EBL imitate moderate performance in utilization of overall resources and NSBL is the weakest

3. bank to mobilize its total resources in various investment assets among four CBs. The profitability position of NABIL is the highest whereas NSBL has the lowest position.

4. Government Securities and loan and advance with share and debenture, the CBs can reduce total risk at minimum level and increase profit at higher level. Such assets are very useful to make portfolio combination so that combining stock into portfolio reduces risk.

5. The portfolio risk on investment is lower than the risk of loan and advance and share and debenture. The risk on government securities is less than risk of portfolio which shows that there is vital role of government securities for deduction of risk.

6. The study shows that the portfolio return has fluctuating trend during the study period. It shows that the investment portfolio concept is not being used properly by the selected banks.

7. CBs are mainly interested to invest on loan and advance which gives high return. They are not interested to invest on share and debenture even though it gives high return with high level of risk. CBs are also interested to invest on government securities which are less risky.

8. NABIL is most successful in utilizing its deposit on investment and NSBL is the weakest in utilizing its deposit on investment. EBL is bank that mobilizes its total deposit efficiently on government securities. It is also moderate in mobilizing its deposit on loan and advance. NSBL has concentrated to mobilize its deposit on loan and advance and share and debenture.

9. CBs mobilize its total deposit more effectively on loan & advance, and then invest on government securities and very nominal part on share & debenture. In comparison to other assets, most of the CBs give first priority to invest their resources on loan and advance out of total outside investment. Similarly, the CBs give second priority to government securities and least priority to share and debenture. It shows resources are being mobilized effectively on loan & advance.

2.2.6 Research Gap

The previous researches were only focused on the comparative study of limited banks. Recently the now number of commercial banks reached up to 26. So there is a high competition between commercial banks for investment and difficulty in managing portfolio investment. Through this research, the status of portfolio investment strategy of present and past (before increment of number of banks) banks can be compared. Due to the political settlement the investment sectors are increasing compared to past 10 years. So commercial banks are more interested in investment in different sectors. The present research will help to find out whether portfolio investments are applied or not by commercial banks in competitive

market. The samples taken for the research purpose has hardly taken in previous studies in a single batch since 1998/99. This study will focus on overall financial indicators that may or may not affect the financial performance of commercial banks in consideration with portfolio investment. More specifically, researcher has taken the samples which are more bullish in current market and try to find out how they have managed the investment portfolio that made them success in unprecedented way. In this research, researcher has tried to analyze on good portfolio investment leads directly on the financial performance of the banks in long run and help to maximize market price of share.

CHAPTER – 3

RESEARCH METHODOLOGY

3.1 Introduction

Research is a systematic method of finding accurate solutions of the problem whereas research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives (Kothari; C.R. 1992). In other words, research methodology refers to the various methods of practices to solve the research problem applied by the researcher along with the logic behind them within the entire study (Kothari; 1990:10). Research methodology consists of research design, sample and size selection, data collection procedure, tools and technique for processing and analysis, method of analysis and presentation.

3.2 Research Design

Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures (Kothari; C.R. 1992:12). Research design is the plan, structure and strategy of an investigation, conceived so as to obtain answers to research questions and to control variances. To accomplish the objective of the study, descriptive and analytical research designs have been used. The proposed research design is mainly based on two types. They are descriptive research design and analytical research design. Descriptive research design describes the general pattern of the Nepalese investors, business environment, problems regarding the portfolio management etc. Similarly, analytical research design helps to analyze gathered facts and information and critically evaluates it as well.

3.3 Population and Sample

The total number of listed commercial banks in NEPSE is called population. Only five banks are taken for the study among listed by NEPSE, which was considered as a sample size. However there is an absence of reliable and valid data. The studied banks are NABIL Bank Ltd, Nepal Investment Bank Ltd, Bank of Kathmandu Ltd, Everest Bank Ltd, and Himalayan Bank Ltd.

3.4 Sources of Data

The present study was mainly based on secondary data. Source of secondary data are published data like annual reports of banks, financial statement, journals, articles and reports etc. The major sources of data and information are as follows:

    i.   Annual reports of concerned commercial banks.

   ii.   Trading reports published by Nepal Stock Exchange.

  iii.   Related websites.

  iv.   Materials published in newspapers and magazines.

   v.   Annual Reports of SEBO.

  vi.   NRB Economic Report, NRB.

 vii.   Economic survey, Ministry of Finance.

viii.   Journal of Finance.

  ix.   Other related books and booklets.

3.5 Data Collection and Processing Techniques

The relevant data have been collected from the Nepal Stock Exchange Limited and concerned banks chosen as sample for the study. Even though the present study was mainly based upon

secondary data, high level of efforts and time was paid to get the data. Most of the data were obtained after convincing extensively to the concerned officers or authorities. Official publications like Economic Survey, Annual Reports, Banking and non-banking financial statistics, Economic Bulletin etc. were obtained from respective offices. In addition to informal interview was scheduled and conducted to obtain more information and reality about the various published data, investment policies of the banks, portfolio concept in the field of investment etc. Similarly, the required data has also been recollected from Degree Campus library as Shanker Dev Campus library, Central Library of Kirtipur, and different website visit.

3.6 Data Analysis Tools

In order to make the study more reliable and authentic, financial and statistical tools have been used which are believed to make the analysis more reliable.

3.6.1 Financial Tools

There are various financial tools which can be applied in order to analyze the performance of commercial banks. Following main financial tools are used to analyze:

Ratio Analysis

Ratio analysis is used to compare a firm's financial performance and status with other firms or to itself on time. It refers to the numerical or quantitative relationship between two variables. In financial analysis, ratio is used as an index of yardstick for evaluating the financial position and performance of the firms. Only such ratios which are related to investment of CBs are taken here.

(1) Total Investment to Total Deposit Ratio

This ratio helps to measure more successful bank in mobilizing their total deposit on investment. Higher the ratio, better the utilization of collected fund and it generates regular income to the banks. This ratio is calculated by dividing investment by the total deposit.

$$\text{Investment to total deposit ratio} = \frac{Investment}{Total deposit}$$

(2) Loans and Advances to Total Deposit Ratio

This ratio measures the extent to which bank is able to mobilize their deposit funds to earn better profit by providing the fund to outsiders in the form of loans and advances. The higher ratio represents the great efficiency of the firm in utilizing fund and vice-versa. This ratio is calculated by dividing loans and advances by the total deposit. This can be stated as:

$$\text{Loans and advance to total deposit} = \frac{\text{Loan and advance}}{Total deposit}$$

(3) Investment on Government Securities to Total outside Investment

It shows that the bank's investment on government securities in companies to the total outside investment (asset). It is calculated by dividing investment on share and debenture by the total outside investment.

$$\frac{\text{Investment on Government securities}}{\text{Total outside Investment}}$$

The total outside investment represents the sum of loan and advances, bills purchased and discounted, and all types of investment.

(4) Investment on Share and Debenture to Total outside Investment

It shows the bank's investment in shares and debentures of subsidiary and other companies. It is calculated by dividing investment on shares and debentures by the total outside investment.

$$\frac{\text{Investment on Share and debenture}}{\text{Total outside Investment}}$$

(5) Return on Total Assets Ratio

This ratio is calculated by dividing net profit after tax by total assets. It measures the profitability with respect to total assets.

$$\text{Return on total assets} = \frac{\text{NPAT}}{\text{Total Assest}}$$

Return on Individual Assets:

(1) Return on Government Securities:

It is computed by dividing interest income on government securities by total investment on government securities, which can be presented as:

$$\text{Return on government securities} = \frac{\text{Interest income from goverment securities}}{\text{Total income from goverment securities}}$$

(2) Return on Loan and Advances

It can be calculated by dividing total interest earn from loan and advances to final account of loan and advances. This can be stated as:

$$\frac{\text{Interest earn from loan and advance}}{\text{Total loan and advance}}$$

(3) Return on Shares and Debentures

The return on share and debenture considers dividend yield and capital gain yield i.e. change in market price. The dividend yield shows only a partial indication of the return hence, the return on share and debenture significantly depends on the change in its share price. This can be stated as:

$$\frac{\text{Pt - Pt - 1 - Dt}}{\text{Pt - 1}}$$

where,

Pt = closing price per share at period t.

Pt-1 = closing price per share at period t-1.

Dt = Dividend per share at period t.

Average Rate of Return

The average rate of return is the sum of the various one period rates of return dividend by the number of periods.

$$\bar{R} = \frac{1}{n} R_1 + R_2 + R_3 \ldots \ldots R_n$$

where,

n = number of period

R1 = rate of return on different periods

$\bar{R}$ = average rate of return

Risk on Individual Assets

The risk of a security depends on the variability of rates of return. The variability of rates of return can be defined as the extent of the deviation of the individual rate of return from the average rate of return. Hence, risk is a difficult concept to graph and a great deal of controversy has been surrounded which attempt to define and measure. However, one such measure of risk is the standard deviation. Standard Deviation is defined as the positive square root of the mean of the square of deviation taken from arithmetic mean. Risk on individual assets (standard deviation) can be calculated using historical return as follows:

$$\dagger = \sqrt{\frac{\sum R - \bar{R}2}{n-1}}$$

where,

$\dagger$ = standard deviation (S.D.)

R = Average rate of return on individual assets

R = Rate of return on individual assets

n = Number of years (observation)

Return on Portfolio

The expected return of the portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weights are proportion of the investors wealth invested in each assets and sum of the weights must be equal one.

Portfolio return (RP) = WARA + WBRB + WCRC + …… + WnRn

where,

WA = weight of investment invested in stock 'A'

WB = weight of investment invested in stock 'B'

RA = expected return for stock 'A'

RB = expected return for stock 'B'

Risk on Portfolio

The portfolio risk is measured by either variance or the standard deviation of returns. The portfolio risk is affected by the variance of return as well as the covariance between the return of individual assets included in the portfolio and respective weights. Hence, the portfolio risk can be defined as

$$\dagger_p = \sqrt{WA\,2\,A2 + WB\,2\,B2 + 2WA\,WB + COV(rA\,rB)}$$

For three assets,

where,

$\dagger_p$ =Standard deviation of portfolio rate of return

COV (r_A r_B)=Covariance of returns between asset A & B.

The covariance is related to correlation coefficient as shown in equation:

COV (r_A r_B)= $\cdots_{AB}\dagger_A\dagger_B$

$\ldots_{AB}$ =Correlation coefficient between variable A & B.

Covariance

Covariance is the joint variance of any two assets. It measures how two random variable, such as the return on securities A & B move together. It can be stated as follows:

$$COV\ (r_j r_m)= \frac{\sum(Rj - \overline{Rj})(Rm - \overline{R})}{N}$$

Where,

Cov (rjrm) = Covariance between stock j & market return m

Coefficient of Variation

The coefficient of variation is the way of expressing risk and it is quite appropriate to use it. It measures risk per unit of expected return. It is calculated as:

$$CVj=\frac{\dagger j}{Rj} \qquad \text{where, } \dagger j =\text{S.D. of security j.}$$

R Expected (average) return on security j.

3.6.2 Statistical Tool

The following statistical tools were used for the analysis of data.

a) Arithmetic Mean

Arithmetic mean of a set of observations is the sum of all the observations divided by the number of observations.

$$\text{Arithmetic mean}(\overline{X})=\frac{\sum X}{n}$$

where,

$\sum X$ = Sum of total values

n = no. of observations.

b) Karl Pearson's Correlation Coefficient

It is used to measure the extent to which two variances are correlated but it does not tell about cause and effect relationship. One of the widely used mathematical method of calculating the correlation coefficient between two variables x and y is Karl Pearson's correlation coefficient. It is denoted by r xy is defined by:

$$r_{xy} = \frac{n\sum xy - \sum x.\sum y}{\sqrt{n\sum x2 - (\sum x)2}\sqrt{n\sum y2 - (\sum y)2}}$$

where,

rxy = Correlation coefficient between variable x & y.

c) Trend Analysis

It is an analysis of financial ration over time used to determine the improvement of determination of its financial situation. The trend line is represented by following equation:

y = a + bx

where,

y = trend values

a = r intercept

b = slope of the trend line

x = variable that present the time.

To determine the values of a & b, the following equation is to be solved:

$$\sum y = Na + b\sum x$$

$$\sum xy = a\sum + b\sum x2$$

where,

N = No. of period or years.

CHAPTER - 4

DATA PRESENTATION AND ANALYSIS

This chapter is the major part of whole study. This chapter has a focus on analysis and interpretation of all collected relevant data related to the study based on various financial and statistical tools, the data were analyzed. Necessary tables and figures have also presented to achieve the objectives of the study. In this chapter, the investment portfolio of commercial banks were analyzed with based on the following tools.

1. Investment operations of CBs.

2. Risk and return analysis of individual investment on assets and investment portfolio.

3. Test of investment portfolio performance.

4. Ratio analysis.

5. Trend analysis.

4.1 Investment Operations of Commercial Banks

Commercial banks mostly mobilize their deposit and other funds in profitable, secured, and marketable area. On the other hand, commercial banks also fulfill the credit needs of various sectors of the economy such as agriculture, industry, commercial and social service as well as investment on the securities. Investment policy helps to confirmed that which bank can handle its investment operation efficiently and ensure the maximum return with the minimum risk, thus investment decision i.e. the most important function of the commercial banks. The healthy development of any commercial bank depends upon its investment strategies. Hence, investment operations of commercial banks' deals with the diagnostic analysis related to the investment of the commercial banks of Nepal in 'shares and debentures, government of Nepal's securities' and 'loans and advances'.

a) Investment on Government Securities

Investment on government securities includes the investment on treasury bills, development bonds, national saving bonds etc. Most of the commercial banks show interest in investing on government securities.

Table No. 4.1
Structure of Investment on the Government Securities held by Commercial Banks

(Rs. in millions)

FY	NIBL	BOK	NIBL	EBL	HBL	CBs
1999/00	90	111.66	1402.85	184.91	459.45	2248.87
2000/01	35	143.43	1233.82	257.61	2206.92	3876.78
2001/02	300	300.81	2767.96	822.2	2025.25	6216.22
2002/03	224.4	542.65	4120.29	1538.9	2588.56	9014.8
2003/04	400	1510.71	3588.77	1599.35	3347.1	10445.93
2004/05	2001.1	2371.78	3672.63	2466.43	3431.73	13943.67
2005/06	1948.5	2146.62	2413.94	2100.29	5469.73	14079.08
2006/07	2522	2658.37	2301.46	3548.61	5144.32	16175.06
2007/08	3256.4	2332.04	4808.35	4704.63	6454.88	21556.3
2008/09	3155	2113.23	4646.89	4821.61	7471.66	22208.39
TOTAL	13932.7	14231.3	30956.96	22044.54	38599.6	119765.1
AVERAGE	1393.27	1423.13	3095.696	2204.454	3859.96	11976.51

Table No. 4.2

Percentage Share of Investment on Government Securities of each Bank　　(in %)

FY	NIBL	BOK	NABIL	EBL	HBL
1999/00	4.00	4.97	62.38	8.22	20.43
2000/01	0.90	3.7	31.83	6.64	56.93
2001/02	4.83	4.84	44.53	13.23	32.58
2002/03	2.49	6.02	45.71	17.07	28.71
2003/04	3.83	14.46	34.36	15.31	32.04
2004/05	14.35	17.01	26.34	17.69	24.61
2005/06	13.85	15.25	17.15	14.92	38.85
2006/07	15.59	16.43	14.23	21.94	31.80
2007/08	15.11	10.82	22.31	21.82	29.94
2008/09	14.21	19.52	20.92	21.71	33.64
Mean	8.91	10.30	31.97	15.86	32.95
S.D	5.81	4.95	14.35	5.13	9.30
C.V	0.65	0.48	0.45	0.32	0.28

Source: Annual reports of Commercial Banks (B/S) Appendix 1:(a)

$$\text{Mean } \bar{R}j = \frac{\sum Rj}{N}$$

$$\text{S.D } \dagger i = \sqrt{\frac{(Rj - \bar{\bar{R}}j)2}{N-1}}$$

$$\text{Coefficient of variation (C.V.)} = \frac{\dagger i}{Rj}$$

Where,

$\sum Rj$ = Sum total of amount for each period.

N = Total Number of period (year).

Figure No. 4.1

in (%)

Percentage Coverage of Investment of Government Securities held by Commercial Banks
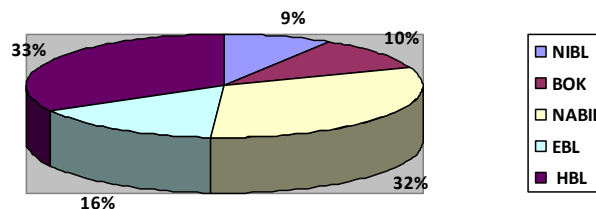
From the above table, it is shows that almost of all commercial banks made investment on government securities either their investment amounts are different. HBL and NABIL has the largest percentage of investment on government securities i.e. 32.95% and 31.97% respectively of the total CBs investment. In other hand, NIBL has the lowest investment on government securities in comparison of other banks i.e. 8.91%. Similarly, EBL has covered 15.68% and BKL has covered 10.3%. Similarly, the lowest coefficient of variation (C.V.) of

HBL (i.e. 28%) shows the more consistency on investment than other banks. On the other hand, NIBL has the largest percentage of C.V. (i.e. 65%), which shows the poor consistency in the investment of government securities. From the above analysis about the investment structure of government securities, we can conclude that there is not similar trend of investment on government securities made by commercial banks. Some bank has covered more than 30% of total investment, while some covered just 8.91% of the total investment. From the analysis of average mean and C.V., it is clear that HBL and NABIL are the two banks which mobilize maximum funds on government securities in comparative to other banks.

b) Investment on shares and debentures:

Commercial banks are interested to invest its funds not only on government securities but also in the shares and debentures of the other companies such as finance companies, development banks, regional development banks, National Insurance Corporation, NIDC Capital markets, Rural Development bank, Himalayan Distillery Ltd., Nepal Housing Developing Finance Co. Ltd., Sanakisan Bikash Bank Ltd., etc. The following table shows the investment structure of commercial banks on shares and debentures

Table No. 4.3
Structure of Investment on Shares and Debentures held by Commercial Banks(Rs. in million)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	12.7	**8.2**	16.51	2.5	9.7	49.41
2000/01	12.7	**5**	16.12	2.5	9.7	45.82
2001/02	12.7	**25**	18.82	3.7	10.7	70.92
2002/03	13.9	38.01	22.22	17.11	34.27	125.51
2003/04	13.9	38.01	22.22	17.11	34.27	125.51
2004/05	13.9	22.81	133.45	17.11	34.27	221.54
2005/06	17.74	93.02	440.28	19.39	39.91	610.34
2006/07	17.74	96.02	104.19	19.08	39.91	276.94
2007/08	35.25	25.56	286.96	19.89	73.43	441.09
2008/09	59.95	45.31	323.24	101.15	89.56	619.21
Total	10.48	396.94	1384.01	219.54	375.32	2586.29
Average	21.048	39.694	138.401	219.54	375.32	258.629

Table No. 4.4

Percentage Share of Investment in Share and Debenture of each Bank

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL
1999/00	**25.70**	16.60	33.41	5.06	19.23
2000/01	**27.72**	10.91	35.18	5.46	20.73
2001/02	**17.91**	35.25	26.T	5.22	15.09
2002/03	**11.07**	30.28	17.70	13.63	27.30
2003/04	**11.07**	30.28	17.70	13.63	27.30
2004/05	**6.27**	10.30	60.24	7.72	15.47
2005/06	**2.91**	15.24	72.14	3.18	6.54
2006/07	**6.41**	34.67	37.62	6.89	14.41
2007/08	**7.99**	5.79	65.06	4.51	16.65
2008/09	**9.68**	7.32	52.20	16.34	14.46
Mean	**12.67**	19.66	41.78	8.16	17.72
S.D	**7.97**	11.1	18.53	4.38	5.96
C.V	**0.63**	0.56	0.44	0.54	0.34

Figure No. 4.2

(in %)

Percentage Coverage of share and Debenture held by Commercial Banks
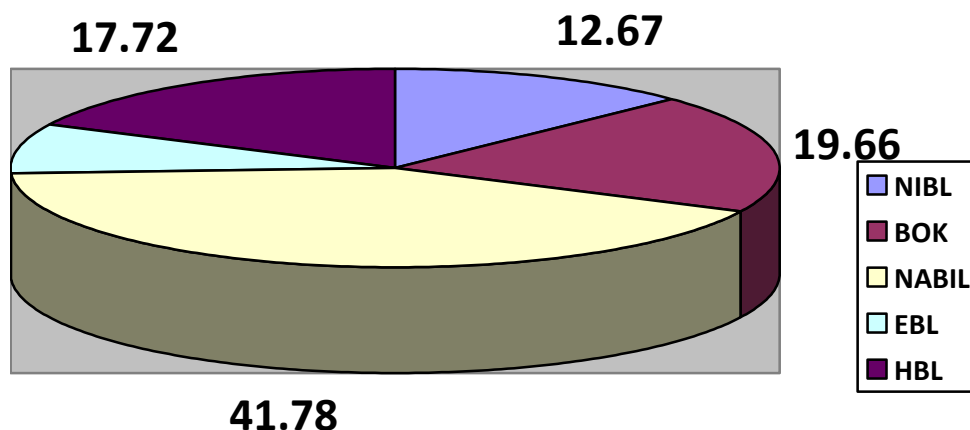
Above of the table no. 4.3 and 4.4, it shows that commercial banks are not so much interested to huge investment on the shares and debentures of the other companies. NABIL is the largest invested bank, which has average invested Rs. 138.40 million, i.e. 41.78% of the total investment of whole commercial bank, NIBL has the least average invested bank i.e. 21.05 million. According to the coefficient of variation (C.V.), HBL is most consistent in the

investment of the other company's securities i.e. share and debenture. They have least percentage of C.V. i.e. (34%) From this analysis, it has been revealed that there is not any proper trend of investment on shares and debentures of the other companies.

c) Investment on Loans and Advances:

Commercial banks collect scattered saving of community and invest them into most desirable and high yielding sectors. Mainly commercial banks are providing funds to government enterprise, private sectors, and foreign bills purchase and discount. The loan and advance is also one of the major sectors of an investment. Commercial bank should not keep its all collected fund as cash bank balance, they should be invested as a loan and advance. The following table shows the investment structure of Nepalese commercial banks as loan and advance.

Table No. 4.5
Structure of Investment on Loans and Advances held by Commercial Banks

(Rs. in million)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	1298.33	1806.41	5396.82	1316.01	5144.47	14962.04
2000/01	1984.24	2939.21	6902.19	2230.78	6891.27	20947.69
2001/02	2318.91	4210.88	7993.28	2959.45	8651.74	26134.26
2002/03	2518.06	4324.77	7135.54	3923.6	10200.55	28102.52
2003/04	5648.03	4494.45	7454.26	4882.79	10001.85	32481.38
2004/05	6917.8	5336.97	7953.76	5860.54	11635.31	37704.38
2005/06	9933.1	5831.07	10465.27	7589.33	12088.71	45907.48
2006/07	12613.56	7239.1	12681.67	9770.92	14395.85	56701.1
2007/08	17010.06	9368.59	15305.91	13623.69	16831.89	72140.14
2008/09	26618.77	12408.31	21159.85	18317.68	19257.72	97762.33
Total	86860.86	57959.76	102448.6	70474.79	115099.4	432843.3
Average	86860.86	5795.976	10244.86	7047.479	11509.94	43284.33

Source: Annual reports of Commercial Banks (B/S) Appendix 1:(c)

Percentage Share of Investment on Loan and Advance of each Bank

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL
1999/00	8.68	12.07	36.07	8.80	34.38
2000/01	9.47	14.03	32.95	10.65	32.90
2001/02	8.87	16.11	30.59	11.32	33.10
2002/03	8.96	15.39	25.39	13.96	36.30
2003/04	17.39	13.84	22.95	15.03	30.79
2004/05	18.35	14.15	21.10	15.54	30.86
2005/06	21.64	12.70	22.80	16.53	26.33
2006/07	22.25	12.77	37.62	17.23	25.39
2007/08	23.58	12.99	21.22	18.89	23.33
2008/09	27.23	12.69	21.64	18.74	19.70
Mean	16.64	13.67	25.71	14.67	29.31
S.D	6.74	1.23	5.19	3.28	5.09
C.V	**0.41**	0.09	0.20	0.22	0.17

Figure No. 4.3

(in %)

Percentage Coverage of Loan and Advance by each commercial banks
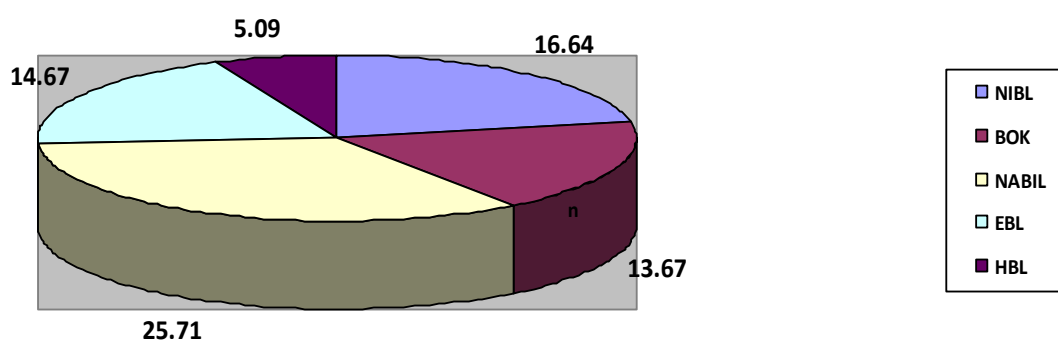
The structure of investment on loan and advance of commercial banks is shows that the above table. In which HBL has the highest percentage of investment among the five banks, which has covered 29.31% and BKL has covered only 13.67%, NABIL bank, NIBL, and EBL are staying at 2nd, 3rd and 4th position respectively, which shows that NABIL has enable to utilize its funds in productive areas. The C.V. of the NIBL, BOK, NABIL, EBL and

HBL are 0.41, 0.09, 0.20, 0.22 and 0.17 respectively. All the banks have more consistent on the investment on loan and advances because of the lower percentage of C.V. except NIBL.

4.2 Analysis of Market Sensitivity

Market Sensitivity looks how the sensitive stocks returns are to the average market return by looking at the percentage change in stock and market return during the same period. The systematic risk is a function of co variability of single stocks return with the average market return. It measures of volatility of a security rate of return in response to the volatility of market rate of return.

Analysis of covariance between market return and stock j return cov (rj, rm), correlation between market return and stock, returns ... jm and Beta coefficient of market and stock ⊆ j jm . (For detail see Appendix - 2).

We know,

$$\text{COV(R}_{\text{NIB}}\text{L, R}_\text{M}) = \frac{\sum(R_{\text{NIBL}} - \overline{R}_{\text{NIBL}})(R_\text{m} - Rm)}{N-1} = \frac{8497.44}{10-1} = 944.16$$

$$\text{COV(R}_{\text{BOK}}\text{, R}_\text{M}) = \frac{\sum(R_{\text{BOK}} - \overline{R}_{\text{BOK}})(R_\text{m} - Rm)}{N-1} = \frac{21360.30}{10-1} = 2373.37$$

$$\text{COV(R}_{\text{NIBL}}\text{, R}_\text{M}) = \frac{\sum(R_{\text{NIBL}} - \overline{R}_{\text{NIBL}})(R_\text{m} - Rm)}{N-1} = \frac{14477.03}{10-1} = 1608.56$$

$$\text{COV(R}_{\text{HBL}}\text{, R}_\text{M}) = \frac{\sum(R_{\text{HBL}} - \overline{R}_{\text{HBL}})(R_\text{m} - Rm)}{N-1} = \frac{9696.90}{10-1} = 1077.43$$

$$\text{OV(R}_{\text{EBL}}\text{, R}_\text{M}) = \frac{\sum(R_{\text{EBL}} - \overline{R}_{\text{EBL}})(R_\text{m} - Rm)}{N-1} = \frac{15806.01}{10-1} = 1756.22$$

Seeing the above result it can be concluded that two variable such as a return on market and return on stock of CBs move together. A positive value of covariance indicates that the stock

return trend moves in the same direction of market return. Again, We can calculate the correlation between market return and return of differential CBs are follows:

$$\rho_{NIBL,M} = \frac{COV(R_{NIBL}R_M)}{\sigma_{NIBL}\sigma_M} = \frac{944.16}{34.84 \, 34.39} = 0.79$$

$$\rho_{BOK,M} = \frac{COV(R_{BOK}R_M)}{\sigma_{BOK}\sigma_M} = \frac{2373.37}{86.26 \, 34.39} = 0.80$$

$$\rho_{NAIBL,M} = \frac{COV(R_{NAIBL}R_M)}{\sigma_{NIBL}\sigma_M} = \frac{1608.56}{52.15 \, 34.39} = 0.90$$

$$\rho_{HBL,M} = \frac{COV(R_{HBL}R_M)}{\sigma_{HBL}\sigma_M} = \frac{1077.43}{32.78 \, 34.39} = 0.96$$

$$\rho_{EBL,M} = \frac{COV(R_{EBL}R_M)}{\sigma_{EBL}\sigma_M} = \frac{1756.22}{53.69 \, 34.39} = 0.95$$

The above calculation shows that the relationship between CB's return and market's return is positive. It means if the market return is decreased then the return of CBs also decreases and vice versa. EBL has the highest correlation and NIBL has the lowest correlation coefficient.

Again

We Know,

$$\beta j_m = \frac{COV(R_j, R_m)}{\sigma_m 2}$$

Beta coefficient of market and stocks of various CBs are as follows:

$$\beta_{NIBL} = \frac{COV(R_{NIBL}, R_m)}{\sigma_m 2} = \frac{944.16}{1182.43} = 0.80$$

$$\beta_{BOK} = \frac{COV(R_{BOK}, R_m)}{\sigma_m 2} = \frac{2373.37}{1182.43} = 2.01$$

$$\beta_{NABIL} = \frac{COV(R_{NABIL}, R_m)}{\sigma_m 2} = \frac{1608.56}{1182.43} = 1.36$$

$$S_{HBL} = \frac{COV(R_{HBL}, R_m)}{\dagger_m 2} = \frac{1077.43}{1182.43} = 091$$

$$S_{EBL} = \frac{COV(R_{EBL}, R_m)}{\dagger_m 2} = \frac{1756.22}{1182.43} = 1.49$$

The above calculation shows that the BOKL has a highest beta i.e. 2.01 and NIBL has the lowest beta i.e. 0.80. If the beta is greater than it indicates the stocks return is more volatile than market return. Any changes in market return causes greater than proportionate change in stock return. Similarly, if the beta coefficient is less than 1, it indicates the stocks return is less volatile than market return.

CAPM equation/SML

Using CAPM model, the investor can estimate the required rate of return for the stock. The intrinsic value of stock is inversely related to require rate of return. The relationship between an assets return and its systematic risk can be expressed by the CAPM theory, which is also called the Security Market Line (SML). SML is the line showing the relationship between the systematic risk (beta) and required rate of return. The equation for the CAPM or SML is:

Required rate of return (Kj) = Rf + (Rm-Rf) S_j

$$= 3.5\ (20.83\ 3.5)\ S_j$$

$$= 3.5\ 17.33\ S_j$$

Where,

Rf = Risk free rate of return.

Rm = Expected return on market port folio.

S_j = Beta or systematic risk of asset j.

Calculation of required rate of return and comparing with expected rate of return are shown on the table below:

CBs	Rf(%)	Risk Premium	Bj	Kj (%)	Rj(%	Evaluation
NIBL	3.5	17.33	0.8	17.36	17.52	Under Priced
BOK	3.5	17.33	2.01	38.33	48.94	Under Priced
NABIL	3.5	17.33	1.36	27.07	36.81	Under Priced
EBL	3.5	17.33	0.91	19.27	12.59	Under Priced
HBL	3.5	17.33	1.49	29.32	35.02	Under Priced

* Source: Rf is taken NRB's economic bulletin Rf is average of treasury bills rate of past 10 years.

From the above calculation BKL stock has the highest the required rate of return i.e 38.33 and its beta is also highest i.e. 2.01 and the required rate of return of NIBL is lowest i.e. 17.36 and the beta is 0.80 among the 5 commercial banks. It means higher the beta higher the require the rate of return that means the required rate of return depend on beta of assets. From the above calculation, except EBL remaining all the bank's required rate of return is less than expected rate of return so all of the stocks are under priced HBL is over priced. Thus, from the investor point of view the under priced stock should be purchased. So long position strategy would be beneficial on these stocks.

4.3 Investment Portfolio Risk and Return Analysis of CBs

Investment portfolio is one of the tools that help for proper utilization of resources. Banks have to investment its funds in different productive sector of the investment alternatives to earn profit. But there is uncertainty of profit which creates risk to the organization. So, every bank has to diversify their investment to minimize the risk. The relationship between risk and return is described by individual's perception about risk and their demand for compensation. Nobody will ready to invest in risky asset without adequate compensation. Generally, higher risk can get higher return. The main purpose of the risk and return analysis is to analyze the investment performance and to explore combination of investments that maximize return, minimize risk. To minimize the risk, banks have to invest different types of assets not only the same. Risk plays a vital role while analyzing the investment alternatives. The

measurement of risk has always been a subject for debate in the investment operation. Risk can be measured in many ways using various statistical techniques such as range, semi-interquartile range, mean absolute deviation, variance, semi-variance etc. In this study, standard deviation (S.D.) has used the tools to measure risk on investment. Risk can be reduced by using the portfolio diversification. The standard deviation of the returns on the portfolio will be less than the standard deviation of the returns from the individual assets.

The average (mean) value of every period indicates the return on the investment. The portfolio return is a weighted average of returns from individual assets. In this chapter, the mean and variance i.e. standard deviation is used as measures of risk and return for a single risky investment asset. Combination of asset in the form of portfolios, provide a set of investment opportunities for the commercial banks.

a) **Risk and Return on Individual Investment**

Risk is a complicated subject and needs to be properly analyzed. It is defined as a variability of return. The standard deviation and the variance are equally acceptable and conceptually equivalent quantitative measures of an asset's total risk. Similarly, the expected rate of return for any asset is the weighted average rate of return, using the probability of each rate of return as the weight. In this chapter, standard deviation (S.D.) and coefficient of variation are taken as the measuring tools of risk and mean return is taken as to measure expected return.

Risk and Return on Government Securities

Government collects their required fund from internal loan by issuing treasury bills, treasury bonds, development bonds, national saving bonds etc. Commercial banks also investment their funds by purchasing such government securities. Generally, it's said that there is not any risk in government securities but the result of standard deviation (S.D.) and coefficient of

variation (C.V.) shows there is risk on such securities because of the more fluctuating trend on the investment on government securities. The risk and return on government securities can be calculated as follows: The return on government securities is computed by dividing interest on government securities by total investment on government securities, i.e.

- Return on government securities (Rg)

$$= \frac{\text{Interest income from government securities}}{\text{Total investment on government securities}}$$

- Expected rate of return ($\overline{R}g$) (Average rate)

$$= \frac{\sum Rg}{N}$$

- Similarly, the risk on government securities can be calculated by using following formula

$$\dagger g = \frac{\sum (Rg - \overline{R}g)}{N-1}$$

<div align="center">

Table No. 4.7
Calculation of Risk and Return on Government Securities Of
Nepalese Commercial Banks

</div>

FY	Investment on government securities	Interest income on government securities	Return on government securities (Rg) (%)	$(Rg-\overline{R}g)^2$
1999/00	2248.87	101.1	4.50	0.39
2000/01	3876.78	194.73	5.02	1.33
2001/02	6216.22	225.58	3.63	0.06
2002/03	9014.8	331.38	3.68	0.04
2003/04	10445.93	410.26	3.93	0.00
2004/05	13943.67	582.37	4.18	0.09
2005/06	14079.08	522.73	3.71	0.02
2006/07	16175.06	596.45	3.69	0.03
2007/08	21556.3	639.44	2.97	0.82
2008/09	22208.39	749.58	3.38	0.24
Total	119765.1	4353.62	38.67	3.03

Source: Appendix 1:(A),(D) & (E)

Figure No. 4.4

Investment and Interest Return on Government Securties
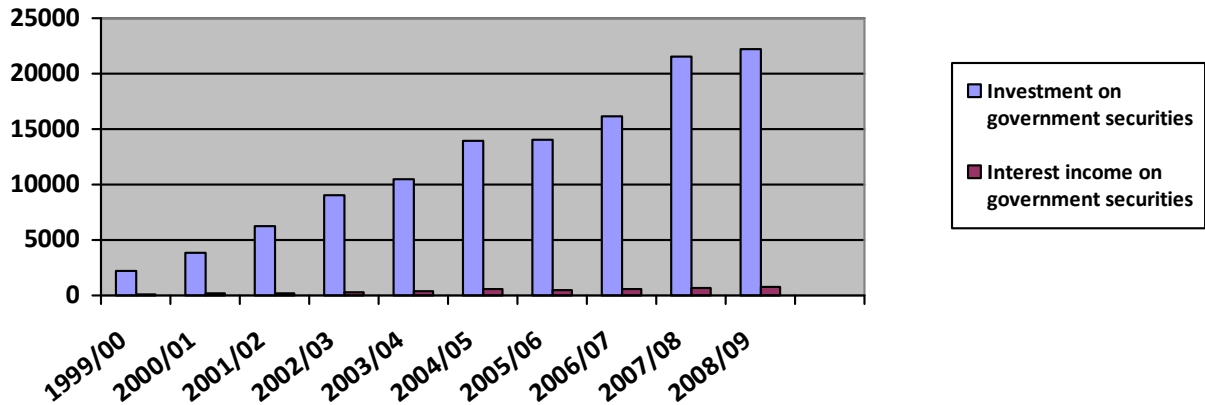
Here,

$\sum Rg = 38.67\%$, number of period (N)= 10

Mean (Rg)= $\dfrac{\sum Rg}{N} = \dfrac{38.67}{10} = 3.87\%$

Again, Standard Deviation $\dagger g = \sqrt{\dfrac{\sum(Rg - \overline{R}g)}{N-1}}$

$= \sqrt{\dfrac{3.03}{10-1}}$

Similarly, coefficient of variation (C.V.)= $\dfrac{S.D}{mean}$

$= \dfrac{\dagger g}{Rg} = \dfrac{0.58}{3.87} = 0.15$

From above calculations, we get,

* Average return on government securities ($\overline{R}g$) = 3.87%

* Standard deviation (Risk) on return on government Securities ($\dagger g$) = 0.58%

* Coefficient of variation (C.V.g) = 0.15

From the above table number 4.7, it can be concluded that the average return on government securities made by commercial banks is 3.87%. Similarly, the standard deviation (S.D.) is only 0.58% which shows that the HMG's securities are less risky assets. Coefficient of variation (C.V.) of HMG's securities is just 0.15, it indicates that the return on government securities is consistency. From above information, it can be concluded that although the rate of return in government securities is low but from the risk and consistency in return point of view it should be taken as a favorable.

Return and Risk on Loan and Advances:

The loan and advance is also one of the major sectors of an investment. Mainly commercial banks providing their funds to government enterprise, private sectors and foreign bills purchase and discount. The risk and return on investment on loan and advances can be calculated as follows:

Return on loan and advances (R)= $\dfrac{\text{Interest income on loan and advance}}{\text{Investment on loan and advance}}$

Average (Expected) return on loan and advance ($\bar{R}1$)= $\dfrac{\sum \bar{R}1}{n}$

where,

n = number of historical period (year)

S.D. on return on loan and advance ($\dagger\,1$) = $\sqrt{\dfrac{(R1-\bar{R}1)2}{n-1}}$

Coefficient of variation (C.V.) $= \dfrac{\dagger 1}{R1}$

Table No. 4.8
Calculation of Risk and Return on Loan and Advances Of Nepalese Commercial Banks

(in Millions)

FY	Investment on Loan and Advance	Interest Income on Loan and Advance	Return on Loan and Advance (R1)	$(R1-\overline{R}1)^2$
1999/00	14962.04	1871.82	12.51	10.96
2000/01	20947.69	2177.74	10.40	1.43
2001/02	26134.26	2674.63	10.23	1.07
2002/03	28102.52	2741.8	9.76	0.31
2003/04	32481.38	3001.73	9.24	0.00
2004/05	37704.38	3427.5	9.09	0.01
2005/06	37704.38	3859.8	8.41	0.63
2006/07	56701.1	4414.76	7.79	2.00
2007/08	72140.14	5325.07	7.38	3.31
2008/09	97762.33	7064.74	7.23	3.89
Total	432843.3	36559.59	92.03	23.61

Source: Annual reports of CBs (B/S)/Appendix 1(C),(F) & (G)

Figure No. 4.5
Investment and Interest Return on Loan and Advance
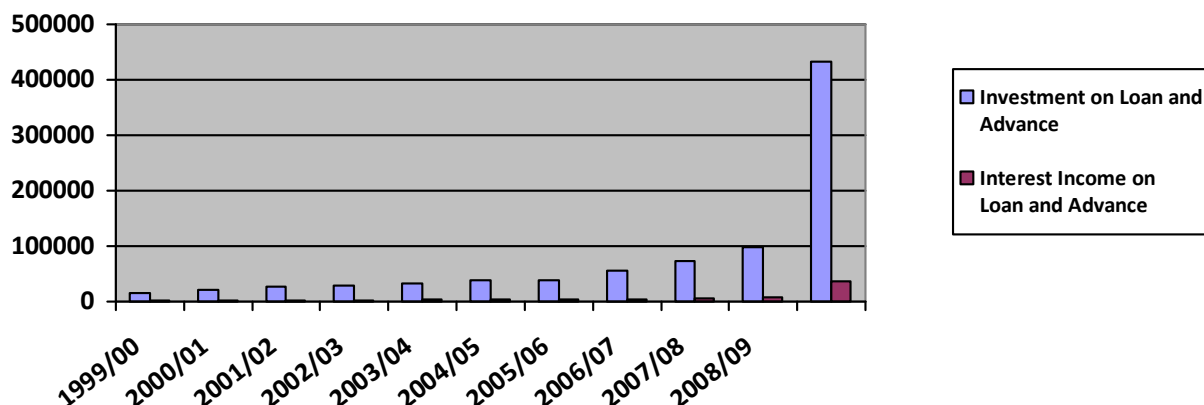
Now, the average rate of return on loan and advance of commercial banks is

$$(\overline{R}1) = \frac{\sum \overline{R}1}{n} = \frac{92.03}{10} = 9.20\%$$

Again, S.D. on return on loan and advance $(\dagger\ 1) = \sqrt{\frac{(R1-\overline{R}1)2}{n-1}}$

$$= \sqrt{\frac{23.61}{10-1}}$$

Coefficient of variation (C.V.) $= \dfrac{\dagger 1}{R1} = \dfrac{1.62}{9.2} = 0.18$

From above calculations, we get,

* Average return on government securities ($\overline{R}_1$) = 9.20%

* Standard deviation (Risk) on return on government Securities ($\dagger\ 1$) = 1.62%

* Coefficient of variation (C.V.1) = 0.18

Above the table number 4.8 reveals that the return on investment on loan and advance has also consistency. During the study period (from 1999/00 to 2008/09) the highest return is 12.51% in 1999/00 and the lowest return is 7.23 in 2008/09. The mean (average) return is 9.20%, S.D. is 1.62% and the coefficient of variation (C.V.) is 0.18. From the above information, it is quite obvious that the S.D. ( ) and C.V. of investment on loan and advance is little high than the investment on government securities.

Risk and Return on Shares and Debentures

The return on shares and debentures considers dividend yield and capital gain yield. The information about dividend received and capital gain yield by the commercial bank is not available properly. Without such information, calculation of return on shares and debentures is not possible. The general assumption has been established to calculate the necessary return on shares and debentures by using market return i.e. the average market return on shares and debentures is also the average return of commercial banks from the investment on shares and debentures. The market return on shares and debentures for this purpose is the average return of the sample companies listed in NEPSE. Here, 13 such companies, 3 from finance company, 3 from commercial banks, 2 from manufacturing companies, 3 from insurance companies, 1 from hotels and 1 from Trading companies has been taken. The risk and return

on investment on shares and debentures of the commercial banks can be calculated as follows:

The return on shares and debentures (Rs) = Capital gain + Dividend

$$= \frac{Pt - Pt-1}{Pt-1} + \frac{Dt}{Pt}$$

The risk on shares and debentures($\dagger s$) $= \sqrt{\frac{(Rs - \overline{R}s)2}{n-1}}$

$$(\overline{R}1) = \frac{\sum \overline{R}1}{n}$$

Coefficient of variation (C.V.) $= \frac{\dagger s}{Rs}$

Capital gain yield $= \frac{Pt - Pt-1}{Pt-1} X100$

Note: Pt and Pt-1 are the average closing price of year t and t-1 (previous year).

Table No. 4.9
Estimate of Market Parameter

S.no	Selected banks	1999/00		2000/01		2001/02		2002/03	
		Pt	Pt	Pt	Dt	Dt	Dt	Pt	Dt
1	NIBL	822	50	1401	25	1150	0	760	0
2	BOK	285	7.49	998	0	850	0	254	10
3	NABIL	700	30	1400	55	1500	40	735	30
4	HBL	1000	50	1700	50	1500	27.5	1000	25
5	EBL	407	15	995	20	650	20	405	20
6	CBs	3214	152.49	6494	150	5650	87.5	3154	85
	Average closing price(Pt)	642.8	30.498	1298.8	30	1130	17.5	630.8	17

2003/04		2004/05		2005/06		2006/07		2007/08		2008/09	
Pt	Dt	Pt	Dt	Pt	Dt	Pt	Dt	Pt	Dt	Pt	Dt
795	20	940	15	800	12.5	1260	20	1729	5	2450	7.5
195	5	295	10	430	15	850	18	1357	20	2350	2.11
735	50	1000	65	1505	70	2240	85	5050	100	5275	60
836	1.32	840	0	920	11.58	1100	30	1740	15	1980	25
445	20	680	20	870	0	1379	25	2430	10	3132	20
3006	96.32	3755	110	4525	109.08	6829	178	12306	150	15187	114.61
601.2	19.26	751	22	905	21.816	1365.8	35.6	2461.2	30	3037.4	22.92

Source: Annual reports of Banks, NEPSE, website (www.nepalstock.com)

Note: Pt - Closing market price of share

Dt - Dividend per share

FY	Average closing price (PE)	Average Dividend	% Change in closing price (capital yield	Average dividend yield (Dt/Pt	Return on share and debenture	(Rs-$\bar{R}_S$)	(Rs-$\bar{R}$ s)^2
1999/00	642.8	30.5					
2000/01	1298.8	30	102.05	2.31	104.36	78.38	6143.95
2001/02	1130	17.5	-13.00	1.55	-11.45	-37.43	1400.85
2002/03	630.8	17	-44.18	2.69	-41.48	-67.46	4551.12
2003/04	601.2	19.26	-4.69	3.20	-1.49	-27.47	754.54
2004/05	751	22	24.92	2.93	27.85	1.87	3.48
2005/06	905	21.82	20.51	2.41	22.92	-3.06	9.38
2006/07	1365.8	35.6	50.92	2.61	53.52	27.54	758.65
2007/08	2461.2	30	80.20	1.22	81.42	55.44	3073.70
2008/09	3037.4	22.92	23.41	0.75	24.17	-1.81	3.29
Total	12824	246.6	240.1408	19.68	259.82	26.00	16698.97

Figure No. 4.6

Capital Yield and Dividend Yield on Shares and Debentures
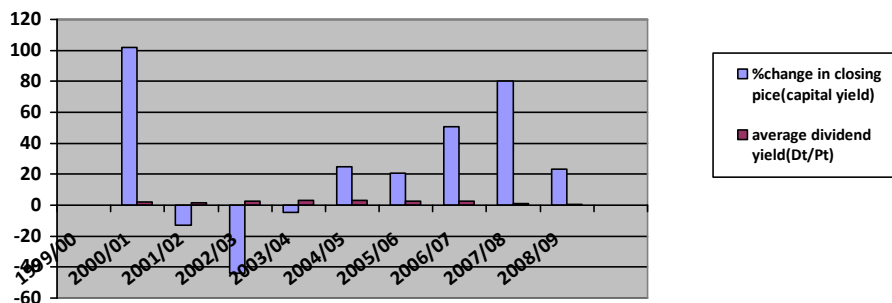
The average ratio of return from share and debenture for commercial banks is:

$$Rs = \frac{\sum Rs}{N} = \frac{259.82}{10} = 25.98\%$$

The risk on shares and debentures($\dagger s$)$= \sqrt{\frac{(Rs - \bar{R}s)2}{n-1}}$

$$= \sqrt{\frac{16698.97}{10-1}}$$

$$= 43.07\%$$

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Coefficient of variation (C.V.) $= \dfrac{\dagger s}{Rs} = \dfrac{43.07}{25.98}$

$$= 1.66$$

From the above calculation, we get:

* Average return on share and debentures (Rs) = 25.98%

* S.D. on return on shares and debentures (s)= 43.07%

* Coefficient of variation on return (C.V.s) = 1.66

Return on share and debentures are the sum of the capital yield (gain) and dividend yield. It can be observed from the above table number 4.11 and figure number 4.6 that the return on shares and debentures for the every period has wide fluctuation, such as -41.48% in 2002/03 and 104.36% in 2000/2001. The main cause of this deviation is the differential share price in the market. Similarly, the change in dividend is also a cause for the variability on returns of share and debentures. The average ratio of return on shares and debentures of CBs for the 10 years, from 199/00 to 2008/09 is 25.98%. Similarly, the risk on return i.e. S.D. is 43.07% and coefficient of variation (C.V.) is 1.66%. Because of the wide variability on the return, the risk (S.D.) on share and debenture is more than the risk (S.D.) on Nepal Government's securities and loan and advances.

b) Risk and Return on Investment Portfolio

Portfolio Return on Investment

Portfolio return is the sum of total invested security's weight multiplied by their individual return. In this study, commercial banks invest their funds in shares and debentures, loan and advances, and government securities. The portfolio return of CBs is calculated as follows:

Table No. 4.11

Calculation of Weight of Investment on Various Assets

S.N.	Assets	Investment amount (in million)	Weight (W)	Average rate of return
1	Government securities	119765.1	0.2157	3.87%
2	Loan and advances	432843.3	0.7796	9.20%
3	Share and debenture	2586.29	0.0047	25.98%
4	Total	555194.7	1	

Expected (Average) Portfolio return on Investment ($\overline{R}$ p)= Wgx $\overline{R}$ g+ W1 R1x Ws $\overline{R}$ s

$$=0.2157 \times 0.0387 + 0.7796 \times 0.092 + 0.0047 \times 0.2598$$

$$= 8.13\%$$

Where,

Wg = weight of government securities

W1 = weight of loan and advance

Ws = weight of share and debenture

R g = Average return on government securities

R 1 = Average return on loan and advance

R s = Average return on share and debenture

Portfolio Risk on Investment

The risk on an individual asset can be measured in terms of standard deviation. The portfolio risk is a function of the proportions invested in the assets, the risk-ness of the assets and correlation of returns on the assets. Portfolio risk is measured by covariance and standard deviation. Therefore, before calculating portfolio risk on investment, covariance between two assets return should be calculated as follows:

Table No. 4.12

Correlation Coefficient and Covariance between Various Assets

S.N.	Assets	S.D.	Correlation Coefficient	Covariance	Weight
1	Government securities (g)	0.58%	rgl=0.2981	Covgl=0.000028	0.2157
2	Loan and advances (l)	1.62%	rls=-0.3619	Covls=-0.002525	0.7796
3	Share and debenture (s)	43.07%	rgs=-1.045	Covgs=-0.002610	0.0047

Covgl, covls and covgs are the covariance between two assets, which is calculated as follows:

Covgl, $=r_{g1}$ x $\dagger g$ x $\dagger 1$

$= 0.2981$x 0.0058 x0.0162

$= 0.000028$

Covsl, $=r_{s1}$ x $\dagger s$ x $\dagger 1$

$= -0.3619$x 0.0162x 0.4307

$= -0.002525$

Covgs, $=r_{gs}$ x $\dagger g$ x $\dagger s$

$= -1.045$x 0.0058 x0.4307

$= -0.002610$

where,

covgl = covariance between government sec. And loan & advance

covls = covariance between loan and advance and share & debentures

covgs = covariance between government securities and share & debentures

Note: For the calculation of correlation coefficient and other, it refers to Appendix-3.

Now,

The standard deviation of investment portfolio is calculated as follows:

$$S.D(\sigma p)= \sqrt{W2g \times \sigma 2g + W2_1 \times \sigma 2_1 + W2s \times \sigma 2s + 2COV \times Ws \times \sigma s \times Wg \times \sigma s \times W1 \times \sigma 1}$$

$$=SQRT\ (0.2157)x\ (0.0058) +(0.7796)x\ (0.0162) +(0.0047)x\ (0.4307)+ 2\ x0.00261$$

$$0.2157\ 0.0047\ \ 2\ 0.000028\ 0.2157\ 0.7796\ 2\ 0.002525\ 0.7796\ 0.0047)$$

$$= 0.0123$$

i.e. 1.23%

The standard deviation of portfolio on investment of commercial banks (p) = 1.23%.

From the above calculation of portfolio risk and return on investment made by commercial banks in various assets, it is important to note that the expected risk of the portfolio (p 1.23%) is considerably less than the expected risk of investment in loans and advances (1.62%) and share and debentures (43.07%). The risk of investment portfolio has considerably reduced due to the negative correlation between returns of investment on share and debentures and government securities (-1.045) and investment on loan and advance and share and debentures (-0.3619). This shows that the effect of combining assets that is risk can be reduced with satisfaction return by investing funds in more than one security. The expected return on portfolio 8.13% is less than the average rate of return on loan and advance (9.20%) and shares and debentures (25.98%). But investing the total funds in loan and advances and share and debenture is more risky than that of investment on portfolio.

4.4 Test of Investment Portfolio Performance

The portfolio of assets usually offers advantage of reducing risk through diversification. The portfolio risk depends upon weight of funds invested in various assets, risk of individual assets, the correlation coefficient of two assets etc. In this topic, the effort have been made to explore in which extent the commercial banks are able to utilize portfolio concept in their

investment. To test the portfolio performance, this sudy uses Sharpe's portfolio performance model. According to this model, in assessing the performance of a portfolio, it is necessary to consider both risk and return. William F. Sharpe devised an index of portfolio performance denoted by Si, which measures the slope of the line starting at risk-less rate R and running out to asset is defined as below:

Models for Test of CBs portfolio performance:

$$Si = \frac{\text{Risk premium}}{\text{Total risk}} = \frac{ri - rf}{\dagger i}$$

Where,

$\overline{Ri}$ = Average return of asset I

Rf = Risk free rate of return

$\dagger$ i = Risk on return for asset I

S = Sharpe's index of portfolio performance.

In this study, above model is used to test whether the portfolio in investment made by Nepalese commercial bank is appropriate or not, i.e. the portfolio on investment is better than investment on other asset or not. As required for the study, performance of the individual investment i.e. investment on shares and debentures, investment on loan and advance, investment on government securities as well as performance of portfolio is calculated as follows:

Table No. 4.13
Performance of Various Investment Assets

S.N.	Investment	Average annual return (i r)%	S.D. (i)	Sharpe's performance Measure Si($= \dfrac{ri - rf}{\dagger i}$)	Ranking
1	Government securities (g)	3.87	0.58	0.6379	3
2	Loan and advances (l)	9.20	1.62	3.5185	2
3	Share and debenture (s)	25.98	43.07	0.5219	4
4	Investment Portfolio	8.13	1.23	3.7642	1

Note: For the calculation of Sharpe's performance measure, the risk free rate of interest (return) is taken according to Nepal Rastra Bank Economic Report 2008 (p- 4), which is 3.5%.

Figure No. 4.7

Performance of Various Investment Assets
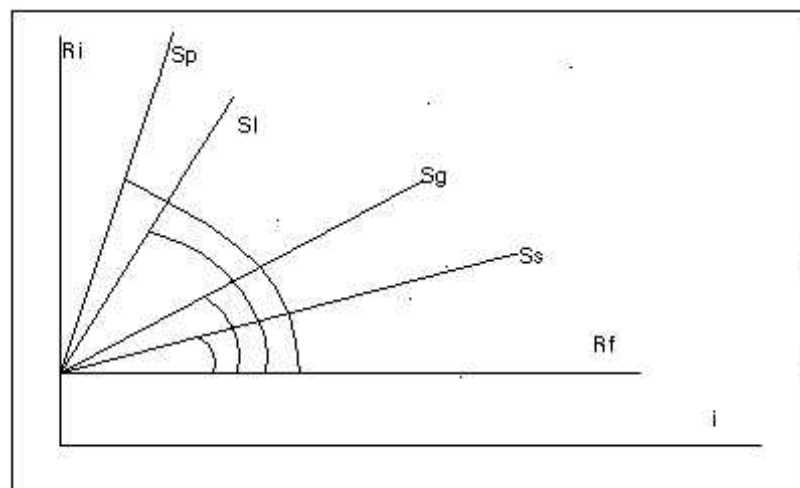
From the above calculation and graph Sp>Sl>Sg>Ss which indicates that the portfolio investment is better performed than investment loan and advance and investment on loan and advance is better perform than investment on government securities and government securities is perform better than investment on share and debenture. So, the portfolio made by

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the commercial banks among various assets is satisfactory, which indicates that CBs are able to utilize their resources on various assets by using portfolio concept to reduce risk and increase return on assets.

4.5 Analysis of Ratios

The purpose of this chapter is to evaluate and analyze the financial position and performance of the different commercial banks. In this part, only those major ratios, which are related with investment operations of commercial banks, are calculated and analyzed.

a) Investment to Total Deposit Ratio

This ratio measures that which banks are more successful in mobilizing their total deposit on investment. Higher the ratio is better in utilization of collected fund and it generates regular income to the banks. This ratio is calculated by dividing investment by the total deposit. This can be stated as:

$$\text{Investment on total deposit ratio} = \frac{\text{Total investment}}{\text{Total Deposit}}$$

A commercial bank may mobilize its bank deposit by investing its fund in different securities issued by government and other financial or non-financial companies. Basically commercial banks are investing their funds in government securities such as treasury bills, development bonds, national savings bonds, special bonds etc. and share to other companies. The following table number 4.15 shows the ratio of investment to total deposit of NIBL, BOK, NABIL, EBL and HBL.

Table No. 4.14
Investment to Total Deposit Ratio

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	4.21	4.67	15.01	14.52	4.80	9.14
2000/01	0.43	3.61	9.79	8.51	15.78	10.50
2001/02	46.29	7.33	48.64	19.75	23.29	31.47
2002/03	43.65	11.66	52.88	30.97	49.18	43.52
2003/04	21.52	29.43	44.85	24.69	48.35	38.68
2004/05	33.53	32.00	41.34	31.44	42.22	37.83
2005/06	27.60	28.95	29.25	21.08	47.12	33.85
2006/07	29.60	32.18	31.93	30.43	41.10	33.96
2007/08	26.57	24.15	38.32	27.41	39.35	32.50
2008/09	19.95	20.24	31.14	21.10	41.89	27.83
Mean	25.33	19.42	34.32	22.99	35.31	29.93
S.D	14.82	11.59	13.91	7.54	15.28	32.85
C.V	0.58	0.60	0.41	0.33	0.43	1.10

Source: Appendix 1:(H), (I)

From the above table, it reveals that the investment to deposit ratio of CBs is quite fluctuable. The investment to deposit ratio in 1999/00 is 9.14% and in 2008/09 is 27.83%. The mean investment to total deposit ratio of HBL is highest i.e. 35.31% and BKL has the lowest ratio i.e. 19.42% among the five commercial banks. The other banks NIBL, EBL and NABIL have 25.33%, 22.99% and 34.32% respectively. On the basis of average ratio, it can be said that NABIL and HBL are capable to mobilize its deposit on the investment than other banks because they have the greater investment to total deposit ratio than the average ratio of CBs i.e. 29.33%, which shows that NABIL and HBL are doing the quite nice performance than other banks. Similarly, the C.V. of EBL is the lowest i.e. 33% and BOK has the highest i.e. 60% among the five commercial banks. The other banks NIBL, NABIL and HBL have the C.V. ratio of 58%, 41%, and 43% respectively. Similarly, the C.V. of total average CBs is 23.2% . EBl is the least consistent among five banks. NABIL and HBLI are the moderate consistent but the NIBL and BKL both has the more consistent ratio. So, it is clear from the above analysis that NABIL is the most successful in utilizing its resources on investment among NIBL, BKL, EBL and HBL bank.

b) Loan and Advance to Total Deposit Ratio

The loan and advance is also one of the major sectors of investment. This ratio measures extend to which bank are successful to mobilize their deposit funds to earn profit by providing the fund to outsiders in the form of loans and advances. The higher ratio is represents the greater efficiency of the firm in utilizing funds and vice versa. This ratio is calculated by dividing loans and advances by total deposit. This can be stated as follows:

$$\text{Loans and advances to Total Deposit Ratio} = \frac{\text{Loans and advances}}{\text{Total deposit}}$$

Table No. 4.15
Loan and Advance to Total Deposit Ratio

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	53.23	70.43	57.02	67.52	52.65	57.13
2000/01	66.51	70.04	54.01	72.96	49.07	56.52
2001/02	54.48	73.56	50.47	64.84	49.35	54.54
2002/03	60.32	75.56	46.02	71.77	54.78	56.78
2003/04	71.29	72.84	55.43	72.90	47.53	58.75
2004/05	60.03	68.94	56.33	72.68	52.86	59.41
2005/06	69.68	64.96	71.75	75.16	48.72	63.12
2006/07	66.64	69.04	65.55	70.79	54.34	63.67
2007/08	69.46	75.62	65.57	74.91	56.02	66.52
2008/09	77.26	78.37	66.30	76.40	60.48	70.83
Mean	64.89	71.94	58.84	71.99	52.58	60.73
S.D	7.69	3.99	8.11	3.54	4.02	5.16
C.V	00.12	0.06	0.14	0.05	0.08	0.09

Source: Appendix 1:(C) and (I)

In the above table, the mean loans and advances to total deposit ratio of EBL bank is highest i.e. 71.99% and HBL has lowest i.e. 52.58% among five commercial banks. Other banks NIBL, BOK and NABIL are 64.89%, 71.94% and 58.84% respectively. The total CB's mean ratio is 60.73% excluding the HBL and NABIL remaining all other banks have the greater average ratio than the CB's mean ratio. From the above description, it can be concluded that EBL and BOK are the banks that mobilize their total deposit more effectively on loan and advances among the five commercial banks. NIBL and NABIL comes under normal

categories, while HBL is unsatisfied in mobilizing it's fund to total deposit on loan and advances. So, the HBL is the least effective to mobilize the total deposit on loan and advances.

c) Return on Total Assets Ratio

This ratio measures the effectiveness of the banks in using its overall resources. It measures in terms of relationship between not profit and total assets. The higher ratio represents the efficient of the banks utilizing its overall resources and vice versa. This ratio is calculated by dividing net profit after tax by total assets. This can be calculated as follows:

$$\text{Return on total assets} = \frac{\text{Net Profit after Tax (NPAT)}}{\text{Total Assets}}$$

The net profit after tax represents that the profit available to common stock holder and total assets includes the total assets of balance sheet item.

Table No. 4.16
Return on Total Assets

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	1.47	1.53	2.30	1.11	1.47	1.76
2000/01	1.91	1.51	2.19	1.21	1.26	1.67
2001/02	1.10	1.02	1.59	1.34	1.42	1.39
2002/03	1.15	0.15	1.54	1.28	1.10	1.16
2003/04	1.30	1.10	2.51	1.17	0.91	1.43
2004/05	1.15	1.34	2.72	1.49	1.06	1.55
2005/06	1.43	1.42	3.02	1.45	1.11	1.65
2006/07	1.64	1.65	2.84	1.49	1.55	1.86
2007/08	1.82	1.80	2.47	1.38	1.47	1.79
2008/09	1.79	2.04	2.01	1.66	1.76	1.84
Mean	1.48	1.36	2.32	1.36	1.31	1.61
S.D	0.30	0.52	0.50	0.17	0.26	0.23
C.V	0.20	0.38	0.22	0.13	0.20	0.14

Source: Appendix 1: Annual Reports of CBs (profit and loss a/c)/(J) and (K).

The above table shows, the mean return on total assets Ratio of NABIL is the highest return i.e. 2.32% and HBL has the lowest i.e. 1.31%, through out the review period. NIBL and BOK

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have a moderate mean return on total assets and EBL has also unsatisfied mean return with compare to average return. NABIL have higher mean return on total assets ratio than average ratio 2.32% > 1.61%, and remaining other banks NIBL, BOK, EBL and HBL have less mean return on total assets ratio i.e. 1.48 < 1.36 =1.36 < 1.31 < 1.61 which shows the performance of these banks are not so good. Similarly, the EBL have lowest c.v i.e. 13% shows that the return on total assets of EBL is the most consistent among five banks and the highest CV of BKL i.e. 38% shows the return on total assets of BKL is highly deviated among the five banks. Finally, it can be concluded that NABIL is the best bank in terms of return on total assets ratio because NABIL has utilized its overall resources efficiently than other banks.

d) Investment of Share and Debenture to Total Outside Investment

The ratio between investment on share and debenture and total outside investment reflects the extent on which the banks are successful to mobilize their total outside investment on purchase of share and debenture of other companies to generate income. This ratio is calculated by dividing total outside investment. This can be stated as:

$$\frac{\text{Investment on share and debentures}}{\text{Total outside investment (TOI)}}$$

Where,

TOI = Loan and advances + Bills purchased and discounted +Investment (from B/S)

A high ratio indicates better performance of investment on shares and debentures out of total outside investment and vice versa.

Table No. 4.17
Investment on Share and Debenture to
Total outside Investment Ratio

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	0.84	0.41	0.61	0.12	0.16	0.35
2000/01	0.61	0.15	0.19	0.08	0.10	0.17
2001/02	0.29	0.54	0.12	0.08	0.08	0.17
2002/03	0.32	0.72	0.14	0.29	0.19	0.25
2003/04	0.19	0.60	0.16	0.25	0.17	0.23
2004/05	0.13	0.28	0.95	0.20	0.16	0.35
2005/06	0.13	1.09	2.96	0.20	0.17	0.86
2006/07	0.10	0.90	0.55	0.14	0.16	0.32
2007/08	0.15	0.21	1.17	0.11	0.25	0.41
2008/09	0.18	0.29	1.03	0.43	0.27	0.45
Mean	0.29	0.52	0.79	0.19	0.17	0.36
S.D	0.24	0.31	0.86	0.11	0.06	0.20
C.V	0.84	0.60	1.09	0.59	0.34	0.56

Source: Appendix 1: (B) and (L)

The above table number 4.18 shows that the commercial banks invest lowest portion of their total outside investment on shares and debentures. In an average only 0.36% parts of total outside investment is invested in shares and debentures of other companies. NABIL has the highest mean ratio i.e. 0.79% and HBL is the lowest investor i.e. 0.17% of total outside investment in shares and debentures among the five commercial banks. Likewise, HBL has the lowest C.V. i.e. 34%, which shows that the variability of ratio between investment on shares and debentures and total outside investment is most uniform among the five banks. Similarly, the highest C.V. of NABIL i.e. 109% shows that it has more variability in investment on shares and debentures to total outside investment.

e) Investment on Government Securities to Total outside Investment

This ratio is used to know, commercial banks are able to mobilizing their total outside investment on different types of government securities to maximize the income or not. Government securities are highly liquid investment so it measures the liquidity position i.e. liquid ratio. This ratio is calculated by dividing investment on government securities by total

outside investment. A high ratio indicates better mobilization of funds as investment on government securities and vice verse. This can be stated as:

$$= \frac{\text{Investment on government securities}}{\text{Total outside investment (assets)}}$$

The following table shows the investment on government securities to total outside investment ratio of five commercial banks.

Table No. 4.18
Investment on Government Securities to Total outside Investment

(in %)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	5.94	5.63	51.78	8.94	7.87	15.93
2000/01	1.68	4.43	14.37	8.24	22.89	14.53
2001/02	6.82	6.47	17.27	17.55	16.05	14.67
2002/03	5.12	10.28	26.35	25.96	14.32	18.28
2003/04	5.35	23.76	26.03	23.22	16.59	19.10
2004/05	18.20	29.19	26.18	29.29	16.15	22.20
2005/06	13.86	25.22	16.24	21.55	22.68	19.75
2006/07	13.72	25.00	12.05	25.34	20.15	18.45
2007/08	13.69	18.82	19.63	25.23	22.40	19.93
2008/09	9.31	13.49	14.84	20.61	22.75	16.20
Mean	9.37	16.23	22.48	20.59	18.19	17.91
S.D	5.28	9.30	11.58	7.10	4.92	18.66
C.V	0.56	0.57	0.52	0.34	0.72	1.04

Source: Appendix 1:(a) and (L)

The above table number 4.19 shows that in an average, NABIL has highest investment on government securities to total outside investment i.e. 22.48%. That means among five commercial banks NABIL is utilized highest percentage of total outside investment into government securities. Similarly NIBL has the lowest mean percentage of investment on government securities to outside investment i.e. 9.37%. The C.V. of HBL has smallest than other banks i.e. 27% which shows that HBL's investment on government securities to total outside investment ratio is the most consistent among five banks on other hand, the C.V. of BKL is the highest i.e. 57%, it means the ratio of BKL is the least consistent. From above

analysis, it can be concluded that the mobilization of total outside investment into government securities of HBL is the higher among other commercial banks. Similarly, HBL and EBL have moderate position.

4.6 Trend Analysis

Trend analysis is a statistical tools which highlights the previous trend and forecast for a future with the help of past and present information. The purpose of trend analysis in this chapter is to analyze the trend of total investment, total deposits and investment on various individual assets such as govt. securities, loan and advances and share and debenture of the commercial banks and projects for next five year. Here, least square method is used to determine the trend value which is stated as:

Y = a + bx

Where,

Y = dependent variable

X = Independent variable (time)

A = y intercept

B = slope of the trend line

To make calculation easier, the deviation of the independent variable (i.e. time) are taken from the middle of a and b can be easily calculated by using following formula/

$$a = \frac{\sum y}{n}$$

$$b = \frac{\sum xy}{x2}$$

4.6.1 Trend Analysis of Total Investment and Total Deposit

On this part, the trend of commercial banks about the investment and total deposit for the 10 year, from 1999/00 to 2008/09 should be analyzed and forecasted for the next five year. The following table no. 4.20 shows the trend values of total investment and total deposit of commercial banks.

Table No. 4.19
Trend value (Ye=a+bx) of Total Investment and Total Deposit of CBs

(in million)

Year (t)	X=(t-2003.5)	Total Investment		Total deposit	
		Trend value	Actual value	Trend value	Actual value
1999	-4.5	4462.4	2394.95	19952.33	26188.69
2000	-3.5	8289.18	3891.79	30799.71	37059.71
2001	-2.5	12115.96	15079.3	41647.09	47916.31
2002	-1.5	15942.74	21539.3	52494.47	49490.44
2003	-0.5	19769.52	21382	63341.85	55284.2
2004	0.5	23596.3	24006.6	74189.23	63459.6
2005	1.5	27423.08	24621.1	85036.61	72729.09
2006	2.5	31249.86	30245.8	95883.99	89053.05
2007	3.5	35076.64	35250.7	106731.4	108454.7
2008	4.5	38903.42	38417.6	117578.8	138019.6
2009	5.5	42730.2		128426.1	
2010	6.5	46556.98		139273.5	
2011	7.5	50383.76		150120.9	

* Note: for a sample calculation of trend equation (line) refer to Appendix- 4

Here,

Statement	Trend line-equation
Trend line for total investment of CBs	YC = 21682.91 + 3826.78 X
Trend line for total deposit of CBs	YC = 68765.54 + 10847.38 X

Trend and Actual Value of Total Investment of CBs
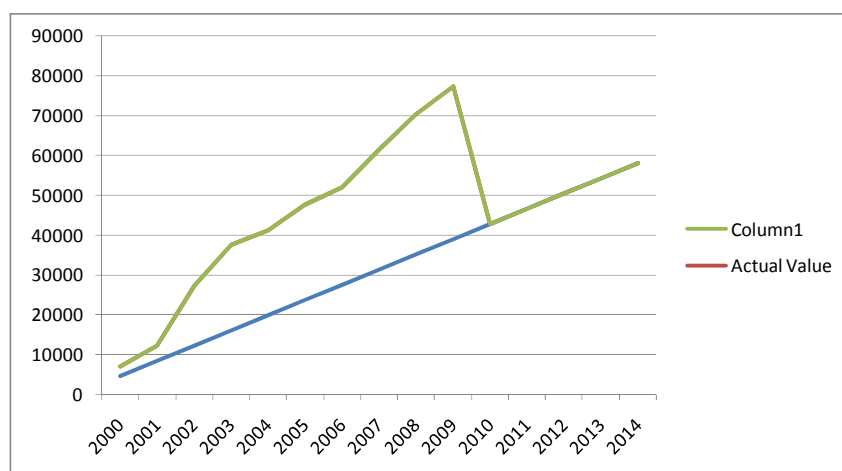
Figure No. 4.9

Trend and Actual Value of Total Deposit of CBs
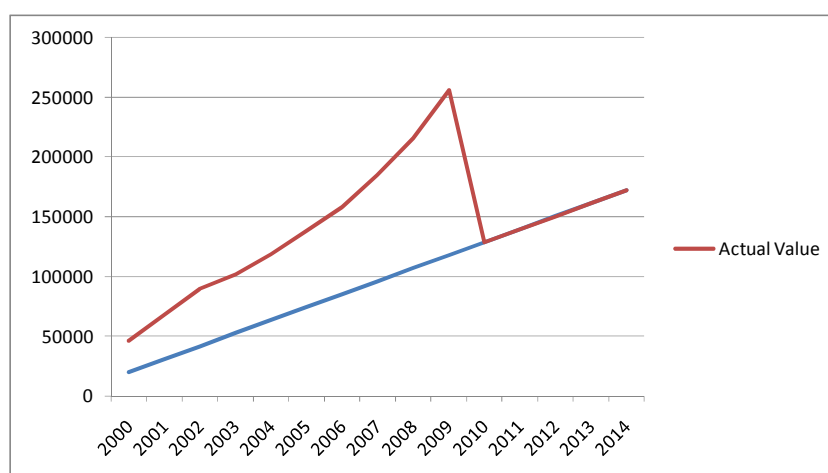
Above the table no. 4.20 and figure no. 4.8 and 4.9 shows that the investments of the commercial banks have been increasing by Rs. 2826.78 million per year and it is expected that it will be reach Rs. 50037.32 million at the end of 2014. Similarly, total deposit of the CBs have been increasing by Rs. 10847.38 million each year and it is hope that it will be reach Rs. 171815.7 at the end of 2014.

4.6.2 Trend analysis of investment on various assets:

In this part, the three individual investments are taken for the trend analysis of commercial banks, such as loan and advances, shares and debentures, and government securities. The efforts have been made to analyze total investment on various assets of CBs for 10 years from 1999 to 2008 and forecasted for next five years till 2013. The following table no. 4.21 shows the trend values for 15 years from 1998 to 2013 of commercial bank's investment on different assets i.e., investment on loan and advances, investment on shares and debentures, and investment on government securities.

Table No. 4.20
Trend Value(Yc = a + bx) of Investment on Govt. Securities,
Loans & Advances and Share & Debentures of the CBs

(in million)

Year (t)	X=(t-2002.5)	Investment on govt. sec.		Investment on loan and advance		Investment on share & debenture	
		Trend value	Actual value	Trend value	Actual value	Trend value	Actual value
2000	-4.5	1834.41	2248.87	7420.095	14962.04	-27.075	49.41
2001	-3.5	4088.21	3876.78	15389.93	20947.69	36.415	45.82
2002	-2.5	6342.01	6216.22	23359.76	26134.26	99.905	70.92
2003	-1.5	8595.81	9014.8	31329.59	28102.52	163.395	125.51
2004	-0.5	10849.61	10445.9	39299.42	32481.38	226.885	125.51
2005	0.5	13103.41	13943.7	47269.25	37704.38	290.375	221.54
2006	1.5	15357.21	14079.1	55239.08	45907.48	353.865	610.34
2007	2.5	17611.01	16175.1	63208.91	56701.1	417.355	276.94
2008	3.5	19864.81	21556.3	71178.74	72140.14	480.845	441.09
2009	4.5	22118.61	22208.4	79148.57	97762.33	544.335	619.21
2010	5.5	24372.41		87118.4		607.825	
2011	6.5	26626.21		95088.23		671.315	
2012	7.5	28880.01		103058.1		734.805	
2013	8.5	31133.81		111027.9		798.295	
2014	9.5	33387.61		118997.7		861.785	

Here,

Statement	Trend line-equation
Trend line for govt. securities	YC = 11976.51 +2253.8 X
Trend line for loan & advance	YC = 43284.33 + 7969.83 X
Trend line for share & debenture	YC = 258.63 +63.49 X

Figure No. 4.10

Trend and Actual Value of Investment on Govt. Securities of CBs
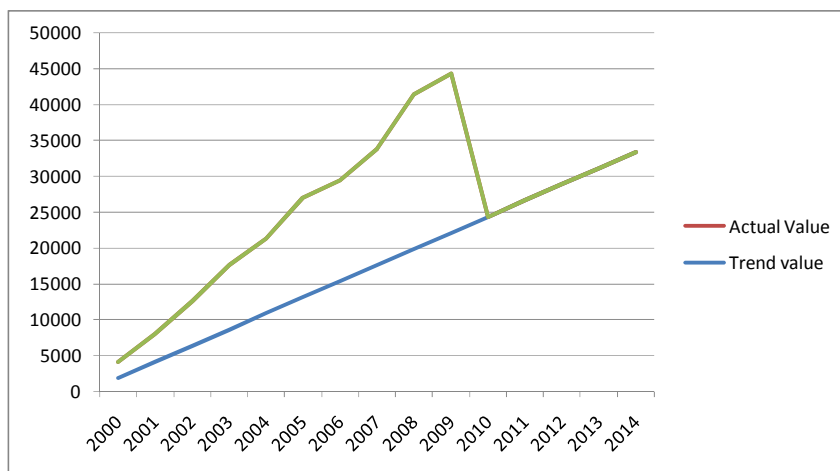
Figure No. 4.11

Trend and Actual Value of Investment on Loan and Advance
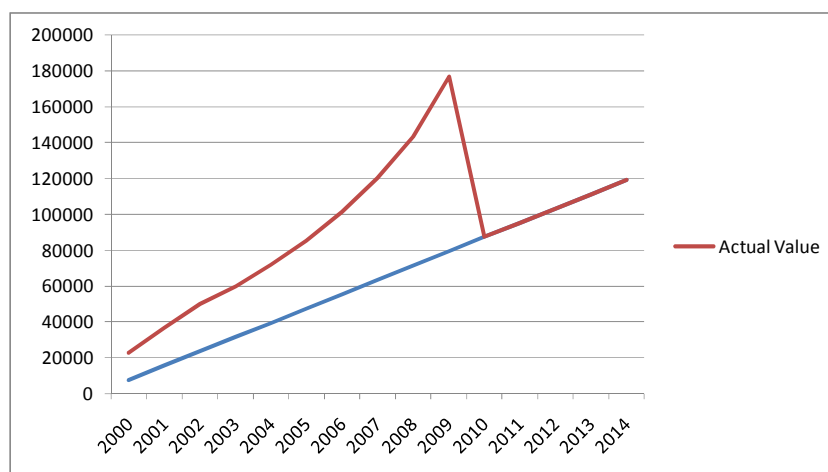
Figure No. 4.12

Trend and Actual Value of Investment on Share and Debenture of CBs
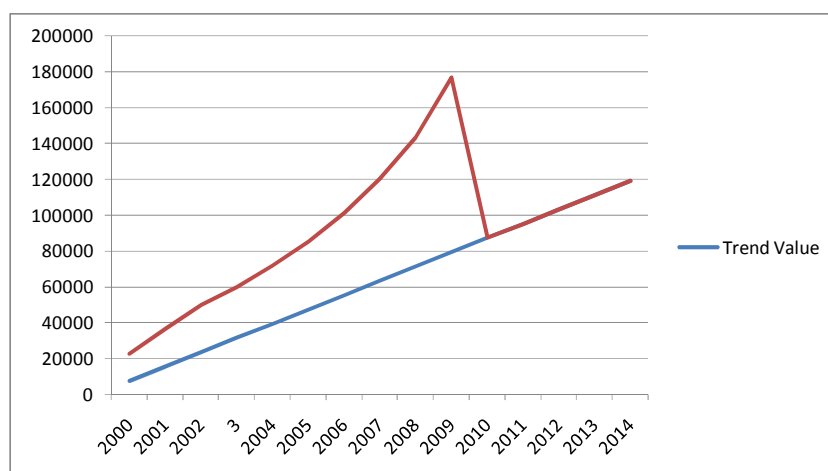
From above table no. 4.21 and figure no. 4.10, 4.11 and 4.12, it is clear that the investment on government securities, loan and advance and share and debenture of commercial banks are in increasing trend. The investment on government securities is increasing by Rs. 2253.8 million each year, investment on loans and advances increasing by Rs. 7969.83 million per year, similarly the investment on share and debenture is increasing by Rs. 63.49 million per year. If other things remaining same, the investment on govt. securities will be Rs. 33387.61 million in year 2014, similarly the investment on loan and advance and share and debenture will be Rs. 118997.7 million, Rs. 861.79 million in year 2014 respectively. In comparison, the increasing ratio on government securities (33387.61/1834.41=18.20 times) is highest than loan and advance (118997.7/7420.095 = 16.04 times) and share and debenture (861.78/. times). It shows that investment on govt. securities is increasing rapidly more than loan and advance and share and debenture.

4.7 Tabulation of Major Findings of the Study

4.7.1 Finding from Investment Operation

Investment activity is the major function of commercial banks. So from this study the major findings of investment operation of commercial banks related to the investment in govt. securities, loan & advance and share and debenture made by CBs are tabulated below:

Table No. 4.21

Major Findings from Investment Operation of Different Commercial Banks

S.N	Investment Sec.		NIBL	BOK	NABIL	EBL	HBL
1	Govt. Securities	Avg	1393.2	1423.1	3095.7	2204.4	3895.9
		% coverage	8.91	10.3	31.97	15.06	32.95
2	Loan and Advance	Avg	8686.0	5795.9	10244.	7047.4	11509.
		% coverage	16.64	13.67	25.71	14.67	29.31
3	Share and debenture	Avg	21.05	39.69	138.4	21.95	37.53
		% coverage	12.67	19.66	41.78	8.16	17.72

4.7.2 Finding from Risk and Return

Commercial banks should be analyzed the risk and return while making investment decision. So, here the risk and return under various assets have tabulated below:

Table No. 4.22

Major Findings from Risk and Return Analysis

S.N.	Assets	Average Return (R)	S.D. (risk)(†)	Coefficient of Variation
1	Govt. securities	3.87%	0.58%	0.15%
2	Loan and advance	9.20%	1.62%	0.18%
3	Share and debenture	25.98%	43.07%	1.66%
4	Portfolio	8.13%	1.23%	0.15%

4.7.3 Findings from Ratio Analysis

From the ratio analysis of various CBs on the basis of their investment strategies, the following major findings are summarized.

Table No. 4.23

Findings from Ratio Analysis

S.N	Ratios		NIBL	BOK	NABIL	EBL	HBL
1	Investment to total deposit ratio	Avg	25.33	19.42	34.32	22.99	35.31
		CV	0.58	0.60	0.41	0.33	0.43
2	Loan & advance to total deposit ratio	Avg	64.89	71.94	58.84.	71.99	52.58
		CV	0.12	0.06	0.14	0.05	0.08
3	Return on total assets ratio	Avg	1.48	1.36	2.32	1.36	1.31
		CV	0.20	0.38	0.22	0.13	0.20
4	Investment on share and	Avg	0.29	0.52	0.79	0.19	0.17
		CV	0.84	0.60	1.09	0.59	0.34
5	Investment on govt. securities to TOI	Avg	9.37	16.23	22.48	20.59	18.19
		CV	0.56	0.57	0.52	0.34	0.27

4.7.4 Findings from Portfolio Performance Test

By using the Sharpe's portfolio performance measure, the following findings are tabulated:

Table No. 4.24

Finding from Portfolio Performance Test

S.N.	Investment Assets	Sharpe's Measure
1	Government securities	0.6379
2	Loan and advance	3.5185
3	Share and debenture	0.5219
4	Portfolio	3.7642

4.7.5 Findings from Trend Analysis

The slope of the trend i.e. increasing or decreasing trend on various sector are tabulated as follows:

Table No. 4.25

Findings from Trend Analysis

S.N.	Items	Slope of trend (increasing or dec.) Per Year (Rs. in million)
1	Total investment	Rs. 3826.78
2	Total deposit	Rs. 10847.38
3	Investment on govt. sec.	Rs. 2253.8
4	Investment on loan & advance	Rs. 7969.83
5	Investment on share & debenture	Rs. 63.49

CHAPTER – 5

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter highlights some selections, actionable conclusions and recommendations on the basis of major findings, which are derived from the analysis of NIBL, BOK, NABIL, EBL and HBL bank. This study was based on secondary data. This chapter summarized the whole study. Summary gives the brief introduction of all the chapters and shows the actual facts of the present

situation under the related topics. Conclusions of the findings are based on the consequences of the analysis of relevant data by using various financial and statistical tools. The recommendations and suggestion are presented on the basis of findings and conclusions.

5.1 Summary of the Study

The correct decision of investment is essential to manage the overall financial condition of an organization. So, before taking investment decision, risk and return is getting considerable

attention in financial management. Investor will not show interest to invest in risky assets unless he is assured of adequate compensation for the acceptance of risk. Hence, risk plays a central role in the analysis of investment. To minimize the risk on investment, investor should apply the portfolio concept for diversifying the investment on different kinds of assets or securities. To minimize the inefficient deviations, diversification is essential to the creation of an efficient investment as it can reduce the variability of returns. Commercial banks are the major financial institutions which occupy important place in the framework of every economy. They provide capital for the different sectors such as industry, trade and so on. So the economic development of the every country is highly affected by the development of the commercial banks. For the growth and expansion of the commercial banks they should not depend on same kind of investment, they have to follow the diversification strategy of portfolio management. Nepal being listed among least developed countries, the commercial banks, success ful formulation and

effective implementation of investment policy is the prime requisite. Commercial banks must mobilize its deposits and other funds to profitable, secured, stable and marketable sectors. The investment portfolio usually offers the benefits of reducing risk through diversification of risky investment to less risky investment. The objective of portfolio management is to analyze different individual assets and delineate efficient portfolios. The study is mainly focused on how the commercial banks have managed their available funds. A bank should not lay all its eggs on the same basket i.e. to minimize the risk; bank must diversify its investment on different sectors and different securities.

In Nepalese context, it seems that commercial banks are exercising to follow the diversification strategy; they are investing in different kinds of securities such as government securities (treasury bill, treasury bonds, development bonds, etc.), foreign government

securities, share and debentures of other companies, loan and advances etc. Although, they are investing on various assets, they did not seem capable to invest their funds on more profitable sectors where there is low risk. Most of the banks are interested to invest their funds on liquid and less risky sector. This was due to lack of sound investment policy and portfolio management. Nepalese commercial banks didn't have clear vision towards the portfolio management and portfolio optimization. There are various problems in resources mobilization of CBs in Nepal such as through cut regulatory procedures, uncertain govt. policy, NRB's bothering directives, unsecured climate created by political situation and Maoist's activities. The present study has tried to analyze the investment of commercial banks on various assets, risk and return on such assets, portfolio risk and return, performance of investment portfolio, analysis of different types of ratios etc.

5.2 Conclusion of the Study

i. HBL has the highest total investment to total deposit ratio and BOK has the lowest among five selected commercial banks, which shows that HBL was the most successful bank to mobilize it's deposit on profitable sector and BOK was not able to do so. NABIL has also good ratio but NIBL and EBL are not so satisfactory.

ii. The total loan and advance to total deposit ratio of EBL and BOK was the quite better than NIBL,NABIL and HBL. It means EBL and BOK are more successful banks to use its deposit on loan and advance where as NIBL has the moderate condition. In case of HBL, the ratio was very

iii. poor as a result there was an unhealthy ratio.

iv.   NABIL has the highest return on total assets ratio and NIBL have moderate position but the EBL,BOK and HBL has the weakest position because of less total return and total assets ratio.

v.   Return on total assets ratio of NABIL was higher than other banks. i.e. 2.32% and other banks didn't have satisfied ratio while total investment of HBL was higher than NABIL. i.e. 83137.71 is higher than 59774.10 million.

vi.   Most of the CBs give priority to the investment on loan and advance, after that government securities and lastly on share and debenture of the other companies. They have invested very few funds on share and debentures of the other companies. HBL has the highest investment percentage on government securities and NIBL has the lowest investment percentage. Similarly, on the investment of share and debenture of other companies NABIL has the highest portion and EBL has lowest portion of investment. HBL has higher percentage of investment on loan and advance and BOK has the lowest percentage.

vii. The average return on government securities, loan and advance and share and debenture were 3.87%, 9.20 and 25.98 respectively and S.D. on government securities, loan and advance and share and debenture were 0.58, 1.62 and 43.07 respectively. That mean government securities has lowest return and lowest risk, loan and advance has moderate return and moderate risk and share and debenture has highest risk and highest return. This indicates higher the risk higher the return, lower the risk lower the return.

viii. The average return and C.V. of loan and advance were 9.20% and 0.18. Which was less return and less risk than share and debenture, it was due to the fixed trend on return on investment on loan and advance. Because, normally banks are charged same rate of interest on same kind of loan and advance and there was no fluctuation on return.

ix. The average return of share and debenture was higher than investment on government securities and loan and advance i.e. 25.98% and the C.V. was also the higher than both i.e. 1.66. It was due to wide fluctuation on the return because return in share and debenture in 2002/03 was -41.48% and in 2000/2001 was 104.36%.

x. There was a negative relationship between loan and advance and share and debenture (rls = -0.3619) and government securities and share and debenture (rgs = -1.045). which shows that there is an effective investment portfolio but relationship between government securities and loan and advance was positive i.e. 0.2981 which indicates that there is not effective investment portfolio.

xi. The return on portfolio investment was 8.13 which was lower than return on loan and advance and share and debenture i.e. 9.20% and 25.98% and over than government securities i.e. 3.87%, but risk of portfolio 1.23% was less than 1.62% and 43.07%. Which means investment portfolio concept is a useful tool for risk diversification.

xii. According to, Sharpe's performance measure, portfolio investment was a better performer than individual investment.

xiii. According to the trend analysis, the total investment and total deposits of CBs are in increasing trend. The individual investment like loan and advance, government securities and share and debenture were also in increasing trend. Among them the investment on loan and advance was increasing rapidly.

Finally it can be concluded that, economic liberalization policy of the government has encouraged the establishment and growth of commercial banks in Nepal within short span of time. Commercial banks were established very quickly within two year. the no of commercial banks reach to 25 from 17 within two year. Strengthening and the institutionalization of the commercial banks is very important to have a meaningful relationship between commercial banks and national development through shift to credit to productive industrial sector. The well established banks have good track record of the utilization of resources and the newly established banks are penetrating the sectors to utilize their resource. The successful formulation and effective implementation of the investment policy is the price requisite for the good performance of the commercial banks. So the CBs must mobilize their deposit and other funds to profitable, secured, stable and marketable sectors. Nepalese CBs are willing to invest their highest portion of resources on loan and advance in comparison of government securities and share and debenture. That means they believe in fixed income also we can say they want to bear limited risk. By considering the individual risk and return investment on loan and advance is better than

others but in comparison with investment portfolio, portfolio is the best investment. According to this sample study, it shows that Nepalese CBs are more interested to invest on less risky sectors because the increas ing trend in government securities is rapid. Based on the present study it can be concluded that NABIL and HBL are the most successful banks in comparison to the other three banks.

5.3 Recommendation

On the basis of overall analysis and findings of study, following recommendations can be suggested for the concerned parties.

i.   Nepalese CBs are more interested to invest their funds on middle risky assets i.e. loan and advance with a small margin, they have no consideration towards diversification. So they have to take risk and get more return by applying the investment portfolio technique.

ii.   The average investment to total deposit ratio of BOK was the lowest among five banks and the ratio of EBL and NIBL banks were also not so good, so they should increase the investment in different newly productive sectors.

iii. HBL has the highest investment on loan and advance but its return on total asets ratio is only 1.31% that means HBL must increase the investment on share and debenture. that means investment on share and debenture is very minimum of HBL

iv.   NABIL has the highest return on total assets ratio due to good investment on share and debenture, so NABIL must keep it up.

v.   NIBL has lowest investment on government securities and it has also not so good on loan and advance. So, NIBL has to invest more on government securities and loan and advances.

vi.   HBl and EBL has the lowest return on assets ratio, so it has to mobilize its resources on more profitable areas. Also BOK has less investment to total deposit ratio so BOK must increased its investment by applying portfolio concept.

vii.   HBL has the highest investment on total deposit ratio which is successful to use its deposit on investment compared to other banks but has only 32.78 which is least than other bank. So it must used portfolio concept during the investment.

viii.   The return on investment of EBL was also not good so it has to mobilize its resources with a optimization technique. Also EBL is unable to invest on share and debenture and loan and advance as compared to other banks. EBL has to increase it's investment on loan and advance and share and debenture.

ix.   In this growing tough competition on banking sector, the activities of the bank should be customer oriented. It should strengthen and active in marketing and retaining customer. For this purpose, banks should develop an "innovative approach to the bank marketing" and formulate new strategies of serving customers in a more convenient and satisfactory.

BIBLIOGRAPHY

Alexander J. Gordon, William F. Sharpe & Jeffery V. Baily. (2003). *Fundamentals of Investments.* Singapore: Person Educations

Bhalla, V.K. (2001). *Investment Management.* New Delhi: S. Chanda & Company Ltd.

Bodie, Kane and Marcus. (2002). *Investment.* USA: Richard D. Irwin.

Chaudhary, Manoj Kumar. (2008). *A Study on Investment Portfolio of Listed commercial Banks with Reference to NABIL, NIBL, NSBL and EBL*. Kathmandu. An Unpublished Master Degree Thesis, submitted to FOM, T.U.

Cheney, John M. and Edward A. Mosses. (1992). *Fundamentals of Investment.* New York, USA: ew York West Publishing Company, St. Paul.

Chhetri, Ammar Bahadur. (2008). *Portfolio Analysis on Common Stock Investment of Joint Venture Banks in Nepal* . Kathmandu. An Unpublished Master Degree Thesis, submitted to FOM, T.U.

Detempte, Jerome B. Garcia Rene and Rindisbacher, Marcel (Feb. 2003). A Monte Carlo Method for Optimal Portfolio. *The Journal of Finance.* Vol. LVIII, No. 1, pp. 401-437.

Dr. Maheshwari S.N. (1997). *Financial Management Principles and practice.* New Delhi: Sultan Chanda and Sons, Educational publisher. Francis, Jack Clark, (1998). *Investment Analysis and Management* . New York, USA: McGraw Hill Int.

Francis, Jack Clark, (2003). *Invetments: Analysis of Management.*, New York, USA: McGraw Hill Ind.

Francis, Jack Clark and Archer Stephen H. (1979). *Portfolio Analysis.* Englewood Cliffs: Prentice-Hall Ind.

Frank and Reilly. (2004). *Investment.* Chicago. The Dryden Press. Fisher E. Donald and Ronald J. Jordan. (2000). *Security Analysis and Portfolio Management.* New Delhi: Prentice Hall of India Pvt. Ltd.

Georzmann, William N. (1999). An Introduction to Investment Theory. *The Journal of Finance.*

George B. Cohen, Edward D. Zinbarg, Arthur Zeikel. (1993). *Investment Analysis & Portfolio Managemen*.

Ghimire, Prabhakar. (1999). Investment Trends. *The Rising Nepal*. 13th May. Gitman, L.J. (1988). *Principal of Management Finance.* San Diego: San Diego State University.

Gitman L. J. and Joehnk. (1990). *Fundamentals of Investment.* New York: Mc- Grew Hill Publishing House.

Khaniya, Kalpana. (2003). Investment Portfolio Analysis of Joint Venture Banks. Kathmandu. An Unpublished Master Degree Thesis, Submitted to FOM, T.U.

Kothari, C.R. (1990). *Research Methodology, An Introduction.* New Delhi: Vikas Publishing House Pvt. Ltd.

Mahat, L.D. (2004). Efficient Banking. *The Kathmandu Post.* 28th April.

Manandhar, Manilata. (2003).*.Analysis of Risk and Return on Common Stock Investment of Commerial Bank in Nepa*l. Kathmandu. An Unpublished Master Degree Thesis, Submitted to FOM, T.U.

Markowitz, Harry M. (1952). Portfolio Selection. *Journal of Financ.,* pp. 77- 91.

Markowitz, Harry M. and Perold F. Andre. (Sept. 1981). Portfolio Analysis with Factors and Scenarios. *The Journal of Finance.* Vol.14, pp. 401-437.

Oxford University. (1997). *Oxford Dictionary of finance & Banking*. Walten Streen, U.S.A: Oxford University Press.

Paudyal, Bhavishor. (2006). *A Study on Portfolio Analysis of Commercial Banks in Nepal.* Kathmandu. An Unpublished Master Degree Thesis, Submitted to FOM, T.U.

Paudel, Anil. (2008). *Portfolio Analysis on common stock Investment of Commercial Banks in Nepal*. Kathmandu. An Unpublished Master Degree Thesis, Submitted to FOM, T.U.

Pradhan, Surendra. (1992). *Basics of Financial Management*. Kathmandu: Educational Enterprise Pvt. Ltd.

Pradhan, Surendra. (2004). *Basics of Financial Management.* Kathmandu: Educational Enterprise Pvt. Ltd.

Pransannra Chandra. (1998). *Management Investment*. New Delhi: Tata Mc Hill Publishing Co. Ltd.

Singh, Preeti. (2001). Investment Management. Bombay: Himalayan Publishing House.

Sharpe, F. William. (1964). Capital assets prices: A theory of market equilibrium under conditions of Risk. *Journal of Finance*.

Shrestha, Kehmraj. (2006). *A Study on Investmet Portfolio of Commercial Banks in Nepal.* Kathmandu. An Unpublished Master Degree Thesis, Submitted to FOM, T.U.

Thapa, Chandra. (2003). Managing Banking Risk*. The Kathmandu Post*. 9th March.

Thapa, Kiran. (2001). *Investment, Theory and Practice*. Kathmandu: Asmita Books and Stationary.

Timilsina, Yogendra. (2004). Managaging Investment Portfolio. *The Kathamandu Post*. 26th may.

Van Horne, J.C. (1997) *Financial Management and Policy.* New Delhi: .Prentice Hall of India Pvt. Ltd.

Van Horne James C. and Wachowicz John M. (1996). *Fundamentals of Financial Management.* New Delhi: Prentice Hall of India Private Limited.

Weston J.F. and Brigham E.F. (1982). *Managerial Finance.* Chicago: The Dryden Press.

Weston, J. Fred and Eugene. F. Brigham. (1999). *Essential of Managerial Finance*. Chicago: The Dryden Press.

Weston, J. Fred and Thomas E. Copeland. (2003). *Managerial Finance.* Chicago: The Dryden Press.

Official Publications:
Annual Reports of NABIL Bank Ltd, FY- 1999 to 2008.
Annual Reports of NIBL Bank, FY- 1999 to 2008.
Annual Reports of BOK Bank, FY- 1999 to 2008.
Annual Reports of EBL Bank, FY- 1999 to 2008.
Annual Reports of HBL Bank, FY- 1999 to 2008.
   Banking and Financial Statistics Published by NRB, FY - 1999 to 2008.
Annual Report of SEBO, FY- 1999 to 2008
Annual Report of NEPSE, FY- 1999 to 2008
Websites:
www.nabilbank.com
www.himalayanbank.com
www.everestbankltd.com
www.bok.com.np
www.nbbl.com.np
www.nrb.org.np
www.sebonp.com
www.nepalstock.com
www.google.com.np/search

Appendix- 1

Arrangement and Tabulation of Available Data of Different CBs

(a) Investment on Government Securities:

(Rs. in million)

FY	NIBL	BOK	NIBL	EBL	HBL	CBs
1999/00	**90**	**111.66**	1402.85	184.91	459.45	2248.87
2000/01	**35**	**143.43**	1233.82	257.61	2206.92	3876.78
2001/02	**300**	**300.81**	2767.96	822.2	2025.25	6216.22
2002/03	**224.4**	**542.65**	4120.29	1538.9	2588.56	9014.8
2003/04	**400**	**1510.71**	3588.77	1599.35	3347.1	10445.93
2004/05	**2001.1**	2371.78	3672.63	2466.43	3431.73	13943.67
2005/06	**1948.5**	2146.62	2413.94	2100.29	5469.73	14079.08
2006/07	**2522**	2658.37	2301.46	3548.61	5144.32	16175.06
2007/08	**3256.4**	2332.04	4808.35	4704.63	6454.88	21556.3
2008/09	**3155**	2113.23	4646.89	4821.61	7471.66	22208.39
TOTAL	**13932.7**	14231.3	30956.96	22044.54	38599.6	119765.1
AVERAGE	**1393.27**	1423.13	3095.696	2204.454	3859.96	11976.51

(b) Investment on Share and Debenture:

(Rs. in million)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	**12.7**	**8.2**	16.51	2.5	9.7	49.41
2000/01	**12.7**	**5**	16.12	2.5	9.7	45.82
2001/02	**12.7**	**25**	18.82	3.7	10.7	70.92
2002/03	**13.9**	38.01	22.22	17.11	34.27	125.51
2003/04	**13.9**	38.01	22.22	17.11	34.27	125.51
2004/05	**13.9**	22.81	133.45	17.11	34.27	221.54
2005/06	**17.74**	93.02	440.28	19.39	39.91	610.34
2006/07	**17.74**	96.02	104.19	19.08	39.91	276.94
2007/08	**35.25**	25.56	286.96	19.89	73.43	441.09
2008/09	**59.95**	45.31	323.24	101.15	89.56	619.21
Total	**10.48**	396.94	1384.01	219.54	375.32	2586.29
Average	**21.048**	39.694	138.401	219.54	375.32	258.629

(c) Investment on Loan and Advance:

(Rs. in million)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	1298.33	1806.41	5396.82	1316.01	5144.47	14962.04
2000/01	1984.24	2939.21	6902.19	2230.78	6891.27	20947.69
2001/02	2318.91	4210.88	7993.28	2959.45	8651.74	26134.26
2002/03	2518.06	4324.77	7135.54	3923.6	10200.55	28102.52
2003/04	5648.03	4494.45	7454.26	4882.79	10001.85	32481.38
2004/05	6917.8	5336.97	7953.76	5860.54	11635.31	37704.38
2005/06	9933.1	5831.07	10465.27	7589.33	12088.71	45907.48
2006/07	12613.56	7239.1	12681.67	9770.92	14395.85	56701.1
2007/08	17010.06	9368.59	15305.91	13623.69	16831.89	72140.14
2008/09	26618.77	12408.31	21159.85	18317.68	19257.72	97762.33
Total	86860.86	57959.76	102448.6	70474.79	115099.4	432843.3
Average	86860.86	5795.976	10244.86	7047.479	11509.94	43284.33

(d) Interest on Government Securities:

(Rs. in million)

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	1.32	5.65	72.27	3.48	18.38	101.10
2000/01	0.39	14.05	92.97	11.88	75.44	194.73
2001/02	9.79	23.87	107.84	19.12	64.96	225.58
2002/03	11.03	25.14	175.58	39.74	79.89	331.38
2003/04	10.20	54.92	174.86	48.74	121.54	410.26
2004/05	35.90	90.87	192.76	92.51	170.33	582.37
2005/06	56.55	88.00	151.06	77.99	149.13	522.73
2006/07	82.42	114.32	130.20	97.27	172.24	596.45
2007/08	78.49	108.59	132.23	128.57	191.56	639.44
2008/09	99.99	61.04	198.44	180.23	185.96	749.58
Mean	38.61	1.36	142.82	69.95	122.94	435.36

(e) Return on Government Securities:

<div align="right">(in %)</div>

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	1.47	5.06	5.15	1.88	4.00	17.56
2000/01	1.11	9.80	7.54	4.61	3.42	26.48
2001/02	3.26	7.94	3.90	2.33	3.21	20.63
2002/03	4.92	4.63	4.26	2.58	3.09	19.48
2003/04	2.55	3.64	4.87	3.05	3.63	17.74
2004/05	1.79	3.83	5.25	3.75	4.96	19.59
2005/06	2.90	4.10	6.26	3.71	2.73	19.70
2006/07	3.27	4.30	5.66	2.74	3.35	19.31
2007/08	2.41	4.66	2.75	2.73	2.97	15.52
2008/09	3.17	4.02	4.27	3.74	2.49	17.69
Mean	2.69	5.20	4.99	3.11	3.38	19.37
S.D	1.04	1.92	1.26	0.78	0.67	5.67
C.V	0.39	0.37	0.25	0.25	0.20	1.46

(f) Interest Income on Loan and Advance:

<div align="right">(Rs. in million)</div>

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	215.54	225.63	660.45	162.06	608.14	1871.82
2000/01	197.70	330.19	722.57	241.99	685.29	2177.74
2001/02	229.04	399.85	846.76	348.62	850.36	2674.63
2002/03	258.58	433.64	801.05	395.10	853.43	2741.80
2003/04	421.80	435.03	776.30	464.76	903.84	3001.73
2004/05	663.00	469.57	761.62	563.14	970.17	3427.50
2005/06	769.00	502.95	831.83	633.63	1122.39	3859.80
2006/07	964.69	550.14	988.41	770.83	1140.69	4414.76
2007/08	1302.12	645.67	1167.25	967.18	1242.85	5325.07
2008/09	1907.26	887.30	1496.24	1329.69	1444.25	7064.74
Mean	692.87	488.00	905.25	587.70	982.14	3655.96

(g) Return on Loan and Advance:

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	16.60	12.49	12.24	12.31	11.82	65.47
2000/01	9.96	11.23	10.47	10.85	9.94	52.46
2001/02	9.88	9.50	10.59	11.78	9.83	51.57
2002/03	10.27	10.03	11.23	10.07	8.37	49.96
2003/04	7.47	9.68	10.41	9.52	9.04	46.12
2004/05	9.58	8.80	9.58	9.61	8.34	45.91
2005/06	7.74	8.63	7.95	8.35	9.28	41.95
2006/07	7.65	7.60	7.79	7.89	7.92	38.85
2007/08	7.65	6.89	7.63	7.10	7.38	36.66
2008/09	7.17	7.15	7.07	7.26	7.50	36.15
Mean	9.40	9.20	9.50	9.47	8.94	46.51
S.D	2.66	1.69	1.68	1.73	1.28	9.04
C.V	0.28	0.18	0.18	0.18	0.14	0.97

(h) Total Investment:

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	102.7	119.86	1420.36	283.08	468.95	2394.95
2000/01	12.69	151.63	1250.94	260.11	2216.42	3891.79
2001/02	1970.28	419.82	7704.31	901.72	4083.16	15079.29
2002/03	1822.16	667.46	8199.51	1693.04	9157.11	21539.28
2003/04	705.24	1816.15	6031.17	1653.98	10175.44	21381.98
2004/05	3864.48	2477.41	5836.97	2535.66	9292.1	24006.62
2005/06	3934	2598.61	4267.23	2128.93	11692.34	24621.11
2006/07	5603	3374.71	6178.53	4200.52	10889.03	30245.79
2007/08	6505.68	2992.43	8945.31	4984.31	11822.98	35250.71
2008/09	6874.02	3204.07	9939.77	5059.56	13340.18	38417.6
Total	32394.25	17822.15	59774.1	23700.91	83137.71	216829.1
Average	3239.425	1782.215	5977.41	2370.091	8313.771	21682.91

(i) Total Deposit:

<div align="right">(Rs. in million)</div>

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	2438.89	2564.83	9464.28	1948.95	9771.74	26188.69
2000/01	2983.28	4196.41	12779.5	3057.42	14043.1	37059.71
2001/02	4256.21	5724.13	15839	4564.57	17532.4	47916.31
2002/03	4174.76	5723.29	15506.4	5466.61	18619.38	49490.44
2003/04	7922.75	6170.7	13447.7	6697.96	21045.09	55284.2
2004/05	11524.7	7741.64	14119.03	8063.9	22010.33	63459.6
2005/06	14255	8975.78	14586.61	10097.69	24814.01	72729.09
2006/07	18927	10485.36	19347.4	13802.44	26490.85	89053.05
2007/08	24488.85	12388.93	23342.29	18186.25	30048.42	108454.7
2008/09	34451.73	15833.74	31915.08	23976.3	31842.79	138019.6
Total	125423.2	79804.81	170347.3	95862.09	216218.1	687655.5
Average	12542.32	7980.481	17034.73	9586.209	21621.81	68765.55

(j) Net Profit of Different CBs:

<div align="right">(Rs. in million)</div>

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	45.69	44.46	266.49	25.23	165.25	547.12
2000/01	72.66	70.73	329.1	41.27	199.38	713.14
2001/02	56.41	65.38	291.37	69.71	277.04	759.91
2002/03	57.11	9.27	271.64	84.35	235.02	657.39
2003/04	116.82	82.13	416.24	94.18	212.13	921.5
2004/05	152.67	127.48	455.31	143.57	263.05	1142.08
2005/06	232.15	139.53	518.64	170.81	308.28	1369.41
2006/07	350	202.44	635.26	237.38	457.46	1882.54
2007/08	501.4	262.39	673.96	296.41	491.82	2225.98
2008/09	696.73	361.5	746.47	451.22	635.87	2891.79
Total	2281.64	1365.31	4604.48	1614.13	3245.3	13110.86
Average	228.164	136.531	460.448	161.413	324.53	13110.86

(k) Total Assets:

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	3106.15	2897.28	11592.1	2275.01	11244.1	31114.64
2000/01	3796.7	4678.95	11592.1	3411.7	15863.74	42775.29
2001/02	5127.36	6409.38	18367.2	5202.58	19500.57	54607.09
2002/03	4973.89	6356.64	17629.3	6607.17	21315.85	56882.85
2003/04	9014.24	7444.81	16562.6	8052.21	23279.34	64353.2
2004/05	13255.5	9496.35	16562.6	9608.57	24762.02	73868.04
2005/06	16274.06	9857.13	17186.33	11792.13	27844.7	82954.35
2006/07	21330	12278.33	22329.97	15959.28	29460.39	101358
2007/08	27590.84	14570.1	22329.97	21432.57	33519.14	124366
2008/09	38873.31	17721.93	37132.76	27149.34	33519.14	157052.9
Total	143342.1	91710.9	199823.5	111490.6	242965.4	789332.3
Average	143342.1	91710.9	199823.5	11149.06	24296.54	789332.3

(l) Total Outside Investment (Asset):

FY	NIBL	BOK	NABIL	EBL	HBL	CBs
1999/00	1513.95	1983.26	2709.29	2067.54	5840.95	14114.99
2000/01	2083.38	3239.26	8585.7	3125.67	9639.62	26673.63
2001/02	4399.31	4647.1	16028.75	4686.18	12620.83	42382.17
2002/03	4386.59	5281.16	15637.41	5928.74	18070.83	49304.73
2003/04	7477.38	6358.85	13787.13	6888.22	20177.29	54688.87
2004/05	10992.61	8124.11	14025.94	8419.78	21243.97	62806.41
2005/06	14060.25	8510.83	14861.7	8419.78	24116.86	71297.24
2006/07	18379.1	10633.79	19101.07	14001.83	25531.59	87647.38
2007/08	23792.11	12391.77	24491.09	18648.39	28820.98	108144.3
2008/09	33870.67	15666.71	31304.82	23398.65	32837.7	137078.6
Total	120955.4	76836.84	16053.29	96912.6	198900.6	654138.3
Average	120955.4	76836.84	16053.29	96912.6	198900.6	654138.3

Appendix - 2

Calculation of annual rate of return, expected rate of return and variance of NABIL, BOK, NABIL, EBL and HBL.

Where,

$$\bar{R}j = \frac{\sum Ri}{N}$$

$$\dagger m = \sqrt{\frac{\sum(Ri - \bar{R}i)2}{n-1}}$$

$$CV = \frac{\dagger i}{Ri}$$

Calculation of Annual Rate of Return, Expected Return and Variance of NIBL

Year	Closing Price	Cash Div.	Rs(%)	$(Rnibl - \bar{R}nibl)$	$(Rnibl - \bar{R}nibl)2$
1999/00	822	50	-	-	-
2000/01	1401	25	73.48	-35.44	3131.45
2001/02	1150	0	-17.92	-51.43	1255.69
2002/03	760	0	-33.91	-10.28	2645.36
2003/04	795	20	7.24	2.61	105.74
2004/05	940	15	7.24	2.61	6.79
2005/06	800	12.5	-13.56	-31.08	966.20
2006/07	1260	20	-13.56	42.48	1804.55
2007/08	1729	5	37.62	20.10	403.97
2008/09	2450	7.5	42.13	24.61	605.86
			$\sum \bar{R}s = 175.20$		$(Rnibl - \bar{R}nibl)2 = 10925.62$

$$\bar{R}j = \frac{\sum Rnibl}{N} = \frac{175.20}{10} = 17.52\%$$

$$\dagger nibl = \sqrt{\frac{\sum(Rnibl - \bar{R}nibl)2}{n-1}} = \sqrt{\frac{10925.62}{10-1}} = 34.84\%$$

$$CVnibl = \frac{\dagger i}{Ri} = \frac{0.34.84}{0.1752} = 1.99$$

Calculation of Annual Rate of Return, Expected Return and Variance of BOK

Year	Closing Price	Cash Div.	Ri(%)	$(Rnibl - \overline{R}nibl)$	$(Rnibl - \overline{R}nibl)2$
1999/00	285	7.49	-	-	-
2000/01	998	0	250.18	201.24	40495.70
2001/02	998	0	-14.83	-63.77	40495.70
2002/03	254	10	-68.94	-117.88	40495.70
2003/04	195	5	-21.26	-70.20	4928.02
2004/05	295	10	56.41	7.47	55.80
2005/06	430	15	50.85	1.91	3.64
2006/07	850	18	101.86	52.92	2800.58
2007/08	1375	20	64.12	15.18	230.36
2008/09	1375	2.11	71.06	52.92	489.41
			$\sum Ri = 489.44$		$(Ri - \overline{R}i)2 = 66966.05$

$$\overline{R}j = \frac{\sum Rbok}{N} = \frac{489.44}{10} = 48.944\%$$

$$\dagger bok = \sqrt{\frac{\sum(Rbok - \overline{R}bok)2}{n-1}} = \sqrt{\frac{66966.05}{10-1}} = 86.26\%$$

$$CVnibl = \frac{\dagger i}{Ri} = \frac{0.8626}{0.48944} = 1.76$$

Calculation of Annual Rate of Return, Expected Return and Variance of NABIL

Year	Closing Price	Cash Div.	Rb(%)	$(Rnabil - \overline{R}nabil)$	$(Rnabil - \overline{R}nabil)2$
1999/00	700	30	-	-	-
2000/01	1400	55	107.86	201.24	40495.70
2001/02	1500	40	10.00	-63.77	40495.70
2002/03	735	30	-49.00	-117.88	40495.70
2003/04	735	50	6.80	-70.20	4928.02
2004/05	1000	65	44.90	7.47	55.80
2005/06	1505	70	57.50	1.91	3.64
2006/07	2240	85	54.49	52.92	2800.58
2007/08	5050	100	129.91	15.18	230.36
2008/09	5275	60	5.64	52.92	489.41
			$\sum Rb = 368$		$(Ri - \overline{R}i)2 = 66966.05$

$$\overline{Rj} = \frac{\sum nabil}{N} = \frac{368.10}{10} = 36.810\%$$

$$\dagger nabil = \sqrt{\frac{\sum(Rnabil - \overline{R}nabil)2}{n-1}} = \sqrt{\frac{66966.05}{10-1}} = 52.15\%$$

$$CVnabil = \frac{\dagger i}{Ri} = \frac{0.5215}{0.36810} = 1.42$$

Calculation of Annual Rate of Return, Expected Return and Variance of HBL.

Year	Closing Price	Cash Div.	Rhbl(%)	$(Rhbl - \overline{R}hbl)$	$(Rhbl - \overline{R}hbl)2$
1999/00	1000	50	-	-	-
2000/01	1700	50	75.00	62.41	3895.01
2001/02	1500	27.5	-10.15	-22.74	516.97
2002/03	1000	25	-31.67	-44.26	1958.65
2003/04	836	1.32	-16.27	-28.86	832.78
2004/05	840	0	0.48	-12.11	146.69
2005/06	920	11.58	10.90	-1.69	2.85
2006/07	1100	30	22.83	10.24	104.78
2007/08	1740	15	59.55	46.96	2204.81
2008/09	1980	25	15.23	2.64	6.97
			$\sum Rhbl = 125.90$		$(Rhbl - \overline{R}hbl)2 = 66966.05$

$$\overline{Rj} = \frac{\sum hbl}{N} = \frac{125.90}{10} = 12.59\%$$

$$\dagger hbl = \sqrt{\frac{\sum(Rhbl - \overline{R}hbl)2}{n-1}} = \sqrt{\frac{66966.05}{10-1}} = 32.78\%$$

$$CVhbl = \frac{\dagger i}{Ri} = \frac{0.3278}{0.1259} = 2.6$$

Calculation of Annual Rate of Return, Expected Return and Variance of EBL

Year	Closing Price	Cash Div.	Rebl(%)	$(Re_{bl} - \overline{Re}_{bl})$	$(Re_{bl} - \overline{Re}_{bl})2$
1999/00	407	15	-	-	-
2000/01	995	20	149.39	114.37	13079.52
2001/02	650	20	-32.66	-67.68	4581.03
2002/03	405	20	-34.62	-69.64	4849.09
2003/04	445	20	14.81	-20.21	408.25
2004/05	680	20	57.30	22.28	496.55
2005/06	870	0	27.94	-7.08	50.11
2006/07	1379	25	61.38	26.36	694.81
2007/08	2430	10	76.94	41.92	1757.27
2008/09	3132	20	29.71	-5.31	28.18
			$\sum Re_{bl} = 350.20$		$(Re_{bl} - \overline{Re}_{bl})2 = 25944.81$

$$\overline{Rj} = \frac{\sum ebl}{N} = \frac{350.20}{10} = 35.020\%$$

$$\dagger ebl = \sqrt{\frac{\sum(Re_{bl} - \overline{Re}_{bl})2}{n-1}} = \sqrt{\frac{25944.81}{10-1}} = 53.69\%$$

$$CVebl = \frac{\dagger i}{Ri} = \frac{0.5369}{0.35020} = 1.53$$

Calculation of Annual Rate of Return on Market, Expected Return on Market and Variance of Market

Year	Closing Price	Cash Div.	Rm(%)	$(Rm - \overline{R}m)$	$(Rm - \overline{R}m)2$
1999/00	216.92	15	-	-	-
2000/01	360.72	20	66.29	45.46	2066.77
2001/02	348.43	20	-3.41	-24.24	587.44
2002/03	227.54	20	-34.70	-55.53	3083.10
2003/04	204.86	20	-9.97	-30.80	948.48
2004/05	222.04	20	8.39	-12.44	154.85
2005/06	286.83	0	29.18	8.35	69.71
2006/07	386.83	25	34.86	14.03	196.95
2007/08	683.95	10	76.81	55.98	3133.64
2008/09	963.36	20	40.85	20.02	400.90
			$\sum Rm = 208.31$		$(Rm - \overline{R}m)2 = 10641.83$

$$\overline{R}j = \frac{\sum m}{N} = \frac{208.31}{10} = 20.831\%$$

$$\dagger m = \sqrt{\frac{\sum(Rm - \overline{R}m)2}{n-1}} = \sqrt{\frac{10641.83}{10-1}} = 34.39\%$$

$$\dagger 2m = 1182.43\%$$

$$CVm = \frac{\dagger i}{Ri} = \frac{0.3439}{0.20831} = 1.65$$

Calculation of Covariance between Market Return and Stock Return cov(r$_j$ r$_m$), correlation between Market Return and Stock j Return (... $_{jm}$) and Beta Coefficient of Market and stock (B$_{jm}$).

Year	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	TOTAL
NIBL R NIBL- $\overline{R}$ NIBL) R M - $\overline{R}$ M)		55.96 45.64	-35.44 -24.2	-51.43 -55.53	-10.28 -30.8	2.61 -12.44	-31.08 8.35	42.48 14.03	20.1 55.98	24.61 20.02	
R NIBL- $\overline{R}$ NIBL)(R M - $\overline{R}$ M)		2543.942	859.066	2855.91	316.624	-32.468	-259.52	595.994	1125.2	492.692	8497.44
BOK R BOK- $\overline{R}$ BOK) R M - $\overline{R}$ M)		201.24 45.64	-63.77 -24.24	-117.88 -55.53	-70.2 -30.8	7.47 -12.44	1.91 8.35	52.92 14.03	15.18 55.98	22.12 20.02	
R BOK- $\overline{R}$ BOK)(R M - $\overline{R}$ M)		9148.37	1545.78	6545.88	2162.16	-92.927	15.9485	742.468	849.776	442.842	21360.30
NABIL R NABIL- $\overline{R}$ NABIL) R M - $\overline{R}$ M)		71.05 45.64	-26.81 -24.24	-85.81 -55.53	-30.01 -30.8	8.09 -12.44	20.69 8.35	17.68 14.03	93.1 55.98	-31.17 20.02	
R NABIL- $\overline{R}$ NABIL)(R M - $\overline{R}$ M)		3229.933	649.874	4765.03	924.308	-100.64	172.762	248.05	5211.74 -	-624.02	14477.03
HBL R HBL- $\overline{R}$ HBL) R M - $\overline{R}$ M)		62.41 45.64	-22.74 -24.24	-44.26 -55.53	-28.86 -30.8	-12.11 -12.44	-1.69 8.35	10.24 14.03	46.96 55.98	2.64 20.02	
R HBL- $\overline{R}$ HBL)(R M - $\overline{R}$ M)		2837.159	551.218	2457.76	888.888	150.648	-14.112	143.667	2628.82	52.8528	9696.90
EBL R EBL- $\overline{R}$ EBL) R M - $\overline{R}$ M)		114.37 45.64	-67.68 -24.24	-69.64 -55.53	-20.21 -30.8	22.28 -12.44	-7.08 8.35	26.36 14.03	41.92 55.98	-5.31 20.02	
R EBL- $\overline{R}$ EBL)(R M - $\overline{R}$ M)		5199.26	31.12	-38.47	622.4	6316.42	-156.23	3170.35	604.21	56.95	15806.01

Appendix – 3

Year	Return on govt. sec. (Rg)	Return on loan & adv. (Rl)	Return on share & deb. (Rs)	RgX Rl	Rg XRs	Rl XRs	Rg2	Rl2	Rs2
1999/00	17.56	65.47	56.21	1149.65	1832.56	6832.45	308.35	4286.32	10891.01
2000/01	26.48	52.46	104.36	1389.14	-303.20	-600.67	701.19	2752.05	131.10
2001/02	20.63	51.57	-11.45	1063.89	-855.73	-2139.12	425.60	2659.46	1720.59
2002/03	19.48	49.96	-41.48	973.22	-29.03	-74.44	379.47	2496.00	2.22
2003/04	17.74	46.12	-1.49	818.17	494.06	1284.44	314.71	2127.05	775.62
2004/05	19.59	45.91	27.85	899.38	449.00	1052.26	383.77	2107.73	525.33
2005/06	19.70	41.95	22.92	826.42	1054.34	2245.16	388.09	1759.80	2864.39
2006/07	19.31	38.85	53.52	750.19	1572.22	3163.17	372.88	1509.32	6629.22
2007/08	15.52	36.66	81.42	568.96	375.12	886.07	240.87	1343.96	584.19
2008/09	17.69	36.15	24.17	639.49	427.57	873.75	312.94	1306.82	584.19
TOTAL	$\sum$ Rg=193.7	$\sum$ Rl 465.1	$\sum$ Rs 316.03	$\sum$ RgRl 9078.51	$\sum$ RgRs 5016.92	$\sum$ RlRs 13523.07	$\sum$ Rg^2 3827.86	$\sum$ Rl^2 22348.52	$\sum$ Rs^2 24707.86

Now,

Calculation of correlation coefficient between various assets are as follows

$$R_{gl}= \frac{N\sum RgR1 - \sum RG.\sum R1}{\sqrt{N\sum Rg2 - (\sum Rg)2}\sqrt{n\sum R12 - (\sum R1)2}}$$

$$R_{gl}= \frac{10x5016.92 - 465.1x316.03}{\sqrt{10x3827.86 - (193.7)2}\sqrt{10x24707.86 - (316.03)2}}$$

$$= -1.05$$

Again, correlation coefficient between Rl and Rs:

$$R_{1s}= \frac{N\sum R1Rs - \sum R1.\sum Rs}{\sqrt{N\sum R12 - (\sum R1)2}\sqrt{n\sum Rs2 - (\sum Rs)2}}$$

$$R_{1s} = \frac{10 \times 13523.07 - 465.1 \times 316.03}{\sqrt{10x22348.52 - (465.1)2}\sqrt{10 \times 24707.86 - (316.03)2}}$$

$R_{1s=}$ -0.3619

From the above calculations, we can conclude the following three

points:

(i) There is a higher positive relationship between return on government securities and loan and advance (rgl = 0.7258).

(ii) There is high negative relationship between the return on government securities and share and debentures.

(iii) There is a very lower negative relationship between the return on loan and advance and shares and debentures.

Appendix - 4

A sample calculation of 'straight line trend'

Let straight-line trend between dependent variable (total investment) y and the independent variable (time) x, be:

Y=a+bx

Then, to find the value of a and b, we have:

$$a = \frac{\sum y}{n} \qquad b = \frac{\sum xy}{x2}$$

Let, the year 1999/00 is equal to 2000, 2000/01 to 2001 and so on. Fitting of trend line by least square method

Trend of Total Investment

Year(t)	Total investment of CBs (Y)	X=t-2003.5	XY	X_2
2000	2394.95	-4.5	-10777.275	20.25
2001	3891.79	-3.5	-13621.265	12.25
2002	15079.29	-2.5	-37698.225	6.25
2003	21539.28	-1.5	-32308.92	2.25
2004	21381.98	-0.5	-10690.99	0.25
2005	24006.62	0.5	12003.31	0.25
2006	24621.11	1.5	36931.665	2.25
2007	30245.79	2.5	75614.475	6.25
2008	35250.71	3.5	123377.485	12.25
2009	38417.6	4.5	172879.2	20.25
Total	y=216829.12	x=0.0	xy=315709.46	x2=82.50

Now,

$$a = \frac{216829.12}{10} = 21682.912$$

$$b = \frac{315709.46}{82.05} = 3826.78$$

So,

The straight line trend for Total investment of commercial bank is

Yc = 21682.91 + 3826.78 X

Trend of total deposit

Year(t)	Total Deposit of CBs (Y)	X=t-2003.5	XY	X2
2000	26188.69	-4.5	-117849.105	20.25
2001	37059.71	-3.5	-129708.985	12.25
2002	47916.31	-2.5	-119790.775	6.25
2003	49490.44	-1.5	-74235.66	2.25
2004	55284.2	-0.5	-27642.1	0.25
2005	63459.6	0.5	31729.8	0.25
2006	72729.09	1.5	109093.635	2.25
2007	89053.05	2.5	222632.625	6.25
2008	108454.7	3.5	379591.45	12.25
2009	138019.6	4.5	621088.2	20.25
Total	y=687655.39	x=0.0	xy=894909.09	x2=82.50

Now,

$$a = \frac{687655.39}{10} = 68765.539 \qquad b = \frac{894909.09}{82.05} = 10847.38$$

So,

The straight line trend for Total deposit of commercial bank is

$Y_C = 68765.54 + 10847.38\ X$

Trend of Investment of government securities

Year(t)	Total Investment of governmet securities CBs (Y)	X=t-2003.5	XY	X2
2000	2248.87	-4.5	-10119.915	20.25
2001	3876.78	-3.5	-13568.73	12.25
2002	6216.22	-2.5	-15540.55	6.25
2003	9014.8	-1.5	-13522.2	2.25
2004	10445.93	-0.5	-5222.965	0.25
2005	13943.67	0.5	6971.835	0.25
2006	14079.08	1.5	21118.62	2.25
2007	16175.06	2.5	40437.65	6.25
2008	21556.3	3.5	75447.05	12.25
2009	22208.39	4.5	99937.755	20.25
Total	y=119765.1	x=0.0	xy=185938.55	x2=82.50

Now,

$$a = \frac{119765.1}{10} = 11976.51 \qquad\qquad b = \frac{185938.55}{82.05} = 2253.2$$

So,

The straight line trend for investment on government securties of commercial bank is

$Y_C = 11976.51 + 2253.8\ X$

Trend of Loan and Advance on total investment

Year(t)	Total Investment of governmet securities CBs (Y)	X=t-2003.5	XY	X₂
2000	14962.04	-4.5	-67329.18	20.25
2001	20947.69	-3.5	-73316.915	12.25
2002	26134.26	-2.5	-65335.65	6.25
2003	28102.52	-1.5	-42153.78	2.25
2004	32481.38	-0.5	-16240.69	0.25
2005	37704.38	0.5	18852.19	0.25
2006	45907.48	1.5	68861.22	2.25
2007	56701.1	2.5	141752.75	6.25
2008	72140.14	3.5	252490.49	12.25
2009	97762.33	4.5	439930.485	20.25
Total	y=432843.32	x=0.0	xy=657510.92	x2=82.50

Now,

$$a = \frac{432843.32}{10} = 43284.332$$

$$b = \frac{657510.92}{82.05} = 7969.83$$

So,

The straight line trend for Investment on Loan and Advance of commercial bank is

$Y_C = 43284.33 + 7969.83\ X$

Trend of Total investment of share and debenture

Year(t)	Total Investment on share and debenture CBs (Y)	X=t-2003.5	XY	X$_2$
2000	49.41	-4.5	-222.345	20.25
2001	45.82	-3.5	-160.37	12.25
2002	70.92	-2.5	-177.3	6.25
2003	125.51	-1.5	-188.265	2.25
2004	125.51	-0.5	-62.755	0.25
2005	221.54	0.5	110.77	0.25
2006	610.34	1.5	915.51	2.25
2007	276.94	2.5	692.35	6.25
2008	441.09	3.5	1543.815	12.25
2009	619.21	4.5	2786.445	20.25
Total	y=2586.29	x=0.0	xy=5237.86	x2=82.50

Now,

$$a = \frac{2586.29}{10} = 258.629 \qquad b = \frac{5237.86}{82.05} = 63.49$$

So,

The straight line trend for investment on share and debenture of commercial bank is

$Y_C = 258.63 + 63.49\ X$

Statement	Trend line-equation
Total Investment	$Y_C = 21682.91 + 3826.78\ X$
Total Deposit	$Y_C = 68765.54 + 10847.38\ X$
Total Investment on governments securitie	$Y_C = 11976.51 + 2253.8\ X$
Investment on loan and advance	$Y_C = 43284.33 + 7969.83\ X$
Investment on share and debenture	$Y_C = 258.63 + 63.49\ X$

<center>**Appendix: 5**</center>

Profiles of the Banks Under study:

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

(I) NABIL Bank Ltd.

It is the first joint venture commercial bank in Nepal, which was established in 1984 under the company act 1964. Dubai bank Ltd. (DBL) was the initial foreign joint venture partner with 50% equity investment. The shares owned by DBL were transferred to Emirate Bank International Ltd. (EBIL), Dubai. Later on EBIL sold its entire stock to National Bank Ltd. Bangladesh (NBL). Hence, 50% of equity investments of Nabil Bank Ltd. are held by National Bank Ltd Bangladesh and out of another 50% shares, financial institutions had taken 20% and remaining 30% were issued to general public of Nepal. Authorized capital and paid up capital of Nabil Bank Ltd. are Rs. 500 million and Rs 491.6544 million.

(II) Nepal Investment Bank Ltd.

It is also called Nepal Indosuez Bank Ltd. Established in 1986 as the second joint venture bank under the company act 1964. Initially, the bank was managed by Banque Indosuez, Paris in accordance with joint venture and technical service. 50% of shares of Nepal Indosuez Bank Ltd. Held by credit Agricole Indosuez were sold to the Nepalese promoter on April 25, 2002 as per the transaction record of NEPSE. After this divestment of shares by Nepalese owners, the name of the company was changed to Nepal Investment Bank Ltd. Out of total equity are held by a group of companies, 15% by commercial banks, another 15% by financial institutions and remaining 20% by general public. It has Rs. 270 million authorized capital and Rs. 169.9845 million issued and paid up capital.

(III) Himalayan Bank Ltd.

Himalayan Bank Ltd. Is a joint-venture bank with Habib Bank Ltd of Pakistan, was established in 1992 under the Company Act, 1964. The operation of the bank started from Febuary,1993. The main objective of bank is to provide modern banking facilities like Tele Banking to the businessman, industrialsists and other professionals and to provide loans on agriculture, commerceand industrail sector. Authorized capital, issued capital and paid-up capital of HBL are 1000 million, 650 million and 429 million respectively. Its share subscription is as follows:

Organized Institutions	50.93%
Habib Bank Ltd.	20.00%
Financial Institution	15.41%
General Public Shareholders	13.56%
Others	0.10%

(IV) Everest Bank Ltd.

Everest bank limited was established in 1992 A.D. under the company act 1964 A.D. with an objective of extending efficient banking services to various segments of the society under the commercial bank Act 1974.It is the joint venture between Punjab National Bank, India and Nepali promoters with public shareholders.Its share subscription is as follows:

Nepalese Promotors	50%
Punjab National Bank	20%
Public sector	30%

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Authorized Capital of this bank is 600 million, paid up Capital is 518 million, Issued Capital is 529.8 million.

(V) Bank of Kathmandu Ltd.

It was established in 1993 in collaboration with the SIAAM Commercial Bank PCC – Thailand under the company act 1964. The SIAAM commercial bank diluted its holding to the Nepalese citizen in 1998. Hence, Nepalese public hold 97.72% of the equity shares of the BICL and remaining shares are hold by financial institutions (0.9%) and organized institution (1.38%). Authorized capital and paid up capital of Bank of Kathmandu Ltd. is Rs. 1000 million and Rs 463.58 million respectively.

Appendix - 6

Consolidated B/S of the Commercial Banks under this Study NABIL Bank Ltd.

Consolidated Balance Sheet as on mid-July

(in million)

S.NO	Particular	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
	Capital &Laibilities										
1	Share Capital	392.8	392.8	491.65	491.65	491.65	491.65	491.65	491.65	491.65	689.22
2	Reserve and surplus	468.38	545.67	623.12	654.77	822.53	990.03	1165.98	1383.34	1565.39	1747.98
3	Debentures & Bonds									882.57	240
4	Borrowings	190.22	285.2	0	417.3	961.46	229.66	17.06	173.2	23342.29	1360
5	Deposits	9464.28	12779.51	15839.01	15506.43	13447.66	14119.03	14586.61	19347.4	83.51	31915.05
6	Bills Payable	53.99	38.07	69.7	67.75	108.94	173.5	85.42	92.54	509.42	238.42
7	Proposed& Undistributed Dividens							-361.22	435.08		437.37
8	Income Tax Liabilities							15.35	34.6		38.78
9	Others	1022.44	982.96	1343.67	491.34	730.37	741.61	340.79	372.15	378.55	465.94
	Total liabilities	11592.11	15024.21	18367.15	17629.24	16562.61	16745.48	17064.08	22329.97	27253.39	37132.76
	Assets										
1	Cash Balance	196.2	373.49	208.48	318.16	187.78	286.89	146.35	237.82	270.41	511.43
2	Balance with Nepal Rastra Bank							389.71	318.36	1113.42	1829.47
3	Bank Balance	434.74	715.26	604.42	733.66	957	683.6	23.32	74.06	16	330.24
4	Money at call	3214.05	4631.83	522.55	313.68	670.2	918.73	868.43	1734.9	563.53	1952.36
5	Investment	1420.36	1250.94	7704.31	8199.51	6031.18	5835.95	4275.53	6178.53	8945.31	9939.77
6	Loans, Advances and Bills Purchased	392.11	432.57	331.16	302.36	301.69	236.23	10586.17	12922.54	15545.78	21365.05
7	Loans, advance and overdraft	5396.82	6902.19	7993.28	7135.54	7454.26	7953.76				
8	Fixed assets	205.59	219.19	235.12	237.64	251.92	338.13	361.24	319.09	286.89	598.04
9	Non banking Assets										
10	Others	332.23	498.76	767.83	671.02	708.61	492.2	413.34	544.67	369.57	606.39
	Total	11592.1	15024.23	18367.15	17629.25	16562.64	16745.49	17064.08	22329.97	6357.47	37132.75

Nepal Investment Bank Ltd.

Consolidated Balance Sheet as on mid-July

(in million)

S.NO	Particular	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
	Capital &Laibilities										
1	Share Capital	135.35	169.19	169.98	169.98	295.29	295.29	587.74	590.59	801.35	1203.92
2	Reserve and surplus	220.44	236.04	249.22	353.48	443.25	433.75	592.43	824.85	1076.77	1482.87
3	Debentures & Bonds							300	550	800	1050
4	Borrowings	50	140	120	98.5	6.83	361.5	50			34451.73
5	Deposits	2438.89	2983.28	4256.21	4174.76	7922.77	11524.68	14254.57	18927.31	24488.86	78.84
6	Bills Payable	10.12	8.85	5.18	6.82	31.63	27.84	15.01	18.82	32.4	93.47
7	Proposed& Undistributed Dividens							79.35	121.63	0.29	24.08
8	Income Tax Liabilities								9.32	347.52	488.4
9	Others	251.35	259.37	326.77	170.34	414.48	582.43	184.43	287.63		
	Total liabilities	3106.15	3796.73	5127.36	4973.88	9114.25	13225.49	16063.54	21330.14	27590.84	38873.31
	Assets										
1	Cash Balance	47.35	32.8	147.66	615.23	200.97	315.38	374.27	562.56	763.98	1464.48
2	Balance with Nepal Rastra Bank							780.24	1526.07	1381.35	1820.01
3	Bank Balance	216.35	330.12	375.2	277.4	725.56	911.54	185.97	247.89	296.18	470.45
4	Money at call	1209.44	1170.72	0	0	40	310	140	70	362.97	1952.36
5	Investment	102.7	12.7	1970.28	1822.16	1705.24	3862.48	3934.19	5602.87	6505.68	6874.02
6	Loans, Advances and Bills Purchased	112.91	86.44	110.12	46.37	124.11	212.33	10126.06	12776.23	17286.43	26996.65
7	Loans, advance and overdraft	1298.34	1984.24	2318.91	2518.06	5648.03	6917.8	0	0	0	0
8	Fixed assets	36.22	39.95	33.97	35.88	192.12	249.79	320.59	343.45	759.46	970.09
9	Non banking Assets							1.54		1.13	0.75
10	Others	82.86	139.77	171.23	212.5	379.22	476.18	200.69	201.33	233.67	276.85
	Total	3106.17	3796.74	5127.37	5527.6	9015.25	13255.5	16063.54	21330.14	27590.84	38873.3

Everest Bank Ltd.

Consolidated Balance Sheet as on mid-July

(in million)

S.NO	Particular	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
	Capital &Laibilities										
1	Share Capital	200	200	240	350	400	455	518	518	518	831.4
2	Reserve and surplus	90	102.34	133.34	140.63	180.44	225.32	314.62	444.81	683.52	1089.84
3	Debentures & Bonds							300	300	300	300
4	Borrowings										
5	Deposits	1948.95	3057.42	4564.57	5466.61	6697.96	8063.9	10097.69	13802.44	18186.25	23976.3
6	Bills Payable	6.65	12.11	14.32	17.11	16.56	22.03	17.78	15.81	26.78	49.43
7	Proposed& Undistributed Dividens							23.53	114.67	68.15	140.79
8	Income Tax Liabilities							3.31		15.28	41.14
9	Others	36.06	51.94	264.67	649.93	773.81	842.32	457.59	763.56	1634.6	720.44
	Total liabilities	2275.01	3411.7	5202.58	6607.17	8052.21	9608.57	11732.52	15959.28	21432.57	27149.34
	Assets										
1	Cash Balance	60.24	80.53	95.23	103.11	112.57	128.76	192.59	259.35	535	822.99
2	Balance with Nepal Rastra Bank							779.67	1139.51	1178.2	1080.91
3	Bank Balance	56.23	70.34	125.34	180.24	405.33	128.76	77.73	154.1	678.24	764.07
4	Money at call							570	66.96		346
5	Investment	283.08	260.11	901.72	1693.04	1653.98	503.05	7618.67	4200.52	4984.31	5059.56
6	Loans, Advances and Bills Purchased							134.07	9801.31	13664.08	18339.09
7	Loans, advance and overdraft	1784.46	2865.56	3784.46	4235.7	5234.24	2535.66	134.07	152.09	170.1	360.51
8	Fixed assets	60.23	71.23	84.24	92.12	102.21	118.37	24.57	7.44		
9	Non banking Assets										
10	Others	30.77	63.93	211.59	302.96	543.88	438.61	206.29	178.01	222.66	376.21
	Total	2275.01	3411.7	5202.58	6607.17	8052.21	9608.57	11732.52	15959.28	21432.57	27149.34

Himalayan Bank Ltd.

Consolidated Balance Sheet as on mid-July

(in million)

S.NO	Particular	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
	Capital &Laibilities										
1	Share Capital	250	300	300	390	429	536.25	643.5	772.2	810.81	1013.51
2	Reserve and surplus	320.22	380.32	420.59	468.11	634.13	787.92	898.25	993.98	1335.69	1499.48
3	Debentures & Bonds								360	360	860
4	Borrowings	232.7	128.6	79.53	534.01	608.13	659	506.05	144.62	235.97	83.18
5	Deposits	9771.74	14043.1	17532.4	18619.38	21045.09	22010.33	24824.01	26490.85	30048.42	31842.79
6	Bills Payable	18.22	24.22	25.92	55.58	46727.2	64.38	68.4	73.58	91.3	102.67
7	Proposed& Undistributed Dividens								238.41	130.94	263.08
8	Income Tax Liabilities									11.91	19.13
9	Others	367.33	398.89	407.92	605.35	516.26	759.48	914.49	386.75	494.01	491.7
	Total liabilities	11244.1	15863.74	19500.57	20672.43	23279.34	24817.37	27844.69	29460.39	33519.14	36175.54
	Assets										
1	Cash Balance	188.21	167.21	149.96	462.78	397.19	274.24	286.53	305.43	177.24	278.18
2	Balance with Nepal Rastra Bank								1096.25	1272.54	935.84
3	Bank Balance	886.21	980.21	1285.22	801.9	1582.02	1726.95	1727.94	315.67	307.56	234.12
4	Money at call	1008.44	2121.22	4057.65	352.35	150.1	368.9	441.08	1005.28	1710.02	518.53
5	Investment	468.95	2216.42	4083.16	9157.11	10175.44	9292.1	11692.34	10889.03	11822.98	13340.18
6	Loans, Advances and Bills Purchased	5372	7423.2	8537.67	8913.72	10001.85	11951.87	12424.52	14642.56	16998	19497.52
7	Loans, advance and overdraft										
8	Fixed assets	150.21	180.21	201.68	318.84	229.87	299.64	295.82	540.82	574.06	726.07
9	Non banking Assets								21.73	12.77	10.31
10	Others	399.23	463.32	555.47	665.74	742.88	903.67	976.46	643.61	643.97	634.79
	Total	11244.1	15863.74	19500.57	20672.44	23279.34	24817.37	27844.69	29460.39	33519.14	36175.54