

CHAPTER - ONE

INTRODUCTION

1.1 Background of the Study:

Generally, the term “Bank” refers to commercial banks. Commercial banks are the foundation of the national economy. They transfer monetary sources from savers to users. They involve in various functions like money creation, credit facilitating, foreign trade facilitating, safe keeping etc. Commercial banks have their own roles and contributions in the economic development. They are sources of economic development and they maintain economic confidence of various segments and extend credits to the people. Thus, activities of commercial banks are to eliminate poverty, reduce unemployment problems and increase economic growth. The main objectives of the bank are collection of amount from public in a form of saving and providing loan (for the development of industry, trade, and business) to the ones who need. The development of country's economy is impossible without expansion of banking function in both rural and urban area of the country. Development of trade and industry is dependent upon the development of banking facilities. So it is said that the bank is backbone of economic development in modern society.

"The term 'portfolio' simply means collection of investment for an investor through the stock exchange; the portfolio will be a collection of shareholdings in different companies. For a property investor has portfolio will be collection of buildings. To a financial manager within an industrial company has portfolio will be a collection of a real capital projects. It will be apparent that the actual nature of the components of a portfolio depends on the population of opportunities from which the selection has been made (*Brookington; 1990:124*). It is the process of selecting a bundle of securities that provides the investing person or organization a maximum yield for a given level of risk. It can be also taken as risk and return management. It aims to determine an appropriate assets mix which attains optimal level of risk and return.

Investment means the sacrifice of current money to increase future money. Generally when cash is needed, investment can be retired. In investment, two attributes are generally involved i.e. time and risk. Risk is the fluctuation of actual returns and

expected return. The sacrifice takes place in the present and is certain. The reward comes later and is uncertain. Investor always tries to minimize the risk by investing two or more securities. A set of two or more security is called portfolio (*Thapa and Rana; 2011:5*).

Portfolio investment refers to an investment that combines several securities. It is the collection of security. Nobody is ready to bear risk without any return but to have return, one must ready to face some risk. To minimize the risk at given rate of return, the concept of portfolio diversification is necessary. It is one such tool that helps for proper utilization of resources. Investor always tries to achieve their investment goal. To fulfill the goal they gathered different security. These securities diversify the risk. Most investors hope that if they have several securities then even one goes bad, the others will provide protection from loss. "A portfolio simply represents the practice among the investor of having their fund in more than one asset. The combination of investment assets is called portfolio(*Weston & Brigham; 1992*).

"A systematic investment process should be followed to win the stock market. Investment process describes how an investor should go about making decision with regard to what marketable to invest in, how extensive the investment should be and when the investors should be made. A five step procedure for making these decision forms the basis of investment process:

1. Set investment policy
2. Perform security analysis
3. Construct a portfolio
4. Revise the portfolio
5. Evaluate the performance of portfolio (*Sharpe, Gordon & Bailey; 1995:560*).

Among these investment processes the study is focused on security analysis and portfolio selection. Security analysis involves examining of individual securities or group of securities within the broad categories of financial assets. Portfolio construction identifies those specific assets in which to invest determining the proportion of investor's wealth. Diversification should be done to minimize the risk and maximize the return. Portfolio performance involves determining periodically

how the portfolio performs in terms of not only the return earned, but also the risk experienced by the investor.

The commercial banks are those banks which pool together the savings of the community and arrange them for the productive use. Commercial banks transfer monetary sources from the savers to the users. They accept deposits from the public on the condition that they will be repayable. They provide loans and advances from the money, which they receive through deposits. Apart from financing, they also render services like collection of bills and cheques, safekeeping of the valuable, financing advising etc to their customer.

The development of the country is based on the how much money is invested. For the investment purpose the capital formation is essential. However, it is not possible to finance the whole investment by the investors on their own. Thus, in such situations the commercial banks pull the funds from surplus groups and provide them to the deficit group. Although, the commercial banks are truly inspired by profit making objectives, their functions and roles contributes a lot for the overall development off the country.

The evolution of the organized financial system in Nepal has a more recent history than in other developing and developed countries. Banking history of Nepal is nearly of seven decades. In Nepalese context, the history of development of banking system started with the establishment of “Nepal Bank Ltd.” in 1937 AD(1994 B.S.) with authorized capital of Rs.10 million and paid capital of Rs.0.842 million. The government owned 51% equity and remaining 49% equity owned by general public.

Due to the political instability in the country, the economic and industrial development had been nearly stopped. Then the government felt the requirement of a central bank and established “Nepal Rastra Bank (NRB)” in 1956 AD (2013 B.S.) with the initial purpose of replacing the Indian currency with Nepalese currency and removing the dual monetary system existing in the country. Likewise, the rising of banking function got popular, it became more complicated which further suggested NRB for the establishment of another commercial bank and in 1966 AD (2022B.S.), “Rastriya Banijya Bank” was established as a fully government owned commercial

bank. This further enhanced the economic activities of the nation. Agriculture Development Bank was also established by the government in 1968 AD (2024 B.S.) as a development bank with the objective of increasing the life standard of the people involved in agriculture. However, this bank now can perform all the commercial banking functions and the government has placed it in the category of commercial banks.

Today in Nepal, the performance of all the economic sectors is less than the average. However, the case of financial institutions is little bit different. The Nepalese financial sector has seen many ups and downs and it has been able to overcome them to a large extent. The financial sector of Nepal is composed of banking and non-banking sector. Banking sector comprises Nepal Rastra Bank and commercial banks whereas the non banking sector includes development banks, finance companies, micro credit development banks, co-operative financial institutions, non-government organizations performing limited banking services. Even though there are various financial institutions functioning in Nepal, the role and importance of the commercial banks has been increasing day by day. The reason behind this may be the performance, credibility, and trustworthiness of the banks. Similarly, the commercial banks are also performing the major role of supporter for the government in the field of economic and infrastructural development of the country.

The commercial banks are increasing in numbers with a goal to get succeed creating intense competitive environment. To cope with the competitive situations, the banks should increase their financial strength by increasing the investments considering various factors associated with it. Investment in the broadest sense means sacrificing the current income for future reward. Thus, every investment posses return as well as risk. All the investors want to maximize the return and minimize the risk involved in it. Investment in a single asset/security may not satisfy the investor's need for optimum return because risk cannot be reduced in single investment. Since, the diversification helps to reduce the risk; the investment in two or more assets/securities is desirable. This forms the group of assets/securities invested which is termed as investment portfolio

1.2 Statement of the Problems

“An investment is a commitment of funds made in the expectation of some positive rate of return. If the investment is properly undertaken, the return will be commensurate with the risk the investor assumes“.Nepalese investors seem to invest their money in capital market in share and debentures because of lower interest rate provided by the banks and finance companies. Nepal Stock Exchange (NEPSE) is organized stock exchange and this is the one stock exchange of Nepal. Many companies which have listed their shares do not want to furnish sufficient information to the existing investors. There are no specialized investment analyses rendering profession services to the investor. It arises a question whether Nepalese investors make their investment by studying the market and risk return status of the securities they choose or just they gamble to make the profit.

The investment planning of the commercial banks and financial companies in Nepal heavily depend upon the rules and regulation provided by the Center Bank, NRB. The composition of asset portfolio of the commercial banks and finance companies is influenced by the policy of the Central Bank. The competition is burning issues in the country due to emergence of many commercial banks. It has also warned the commercial banks and finance companies to improve their productivity.

These are the key issues in investment decisions of commercial banks and finance companies. Hence, this deals with those problems in terms of risk and return characteristics and portfolio concept. In such situations, therefore, the following issues have been raised to address in this study.

- The study has examined about the condition of portfolio management in financial institutions but whether the institutions have maintained portfolio management or not?
- What is the rate of risk in their institutions and their associated risk of the securities listed in NEPSE?
- But if the institutions are careless about the portfolio management, by how much profit they are having and how they are maintaining their earning?
- What is the different between the earning per share (EPS) of the institutions that portfolio management and do not have portfolio management.

- The study also tried to find out the relationship between earning per share (EPS) and market price per share (MPS) of financial institutions and which is the optimum portfolio in NEPSE to invest?

1.3 Focus of the Study:

Harry M. Markowitz originally proposed portfolio theory in 1952. Markowitz diversification is the combining of assets, which are less than perfectly correlated in order to reduce portfolio's risk. It can sometimes reduce risk below the un-diversifiable level. Markowitz diversification is more analytical than simple diversification and considers assets correlation. Risk adverse investors select efficient portfolio that maximizes return at a given level of risk or minimizes risk at a given level of return. With the collection of those efficient portfolios the optimal portfolios can be obtained for given investors. By combining securities of low risk with securities of high risk, success can be achieved by an investor in making a choice of investment outlets.

It is a common problem of investment manager how to maximize the expected return of the portfolio subject to some target level of volatility. That is investment weights are done to have best performance for an expected level of standard deviation. The target standard deviation is determined by the investor's tolerance for risk, expected return depends upon the firm's life cycle and returns of mature firms with those of growth firms. Time variation can play an important role in determining expected returns of mature firms than of growth firms. Effective risk and return management strategy should be applied in order to manage portfolio risk and return.

The study focuses on the empirical study of those stocks trading at Nepal Stock Exchange, which is secondary market in Nepal. This study mainly tries to find out a profitable portfolio alternative with the effective use of available liquidity of public. People have liquidity but they are unproductive. So they try to find out available best alternative and best portfolio, which will increase wealth position of the investor and indirectly contribute to the economic growth of the nation.

1.4 Objectives of the Study

Every study is conducted with some objectives. The main objectives of the study are to analyze the current status of portfolio management of listed commercial banks in Nepal. However, to achieve the main objectives, the following specific objectives are put forward.

- To examine risk and return of commercial banks.
- To identify the optimal portfolio weight of selected commercial banks.
- To assess the present status of portfolio management of selected commercial banks.

1.5 Significance of the Study

Nepal being listed among least developed countries, the commercial banks and other financial institution plays vital economic development of the country. The main objective of commercial banks is to earn profit by proper mobilization of resources. The research actually held in the fact of today's situation of Nepal. People are looking for investment alternatives. In Nepalese commercial banks, they do not have clear vision towards effective investment. They are found to be making investment only on short-term basis. There is hesitation to invest in long-term projects because they are much more safety minded. Even there are various ways to minimize risk, they are not aware and do not take any attention towards such field i.e. they do not think about portfolio management. Hence the main significance of this study of investment portfolio analysis of Nepalese commercial banks is to help how to minimize risk on investment and maximize return through portfolio analysis.

This study is important to acknowledge them how important risk and return calculation and motivate them for rational investment. They can compare market risk and individual risk to conclusion whether the security is as risky as market risk and individual risk to conclusion whether the security is as risky as market or not. This type of research provides filtered information. This research will inform them about valuation of stock is over-priced or under-priced. So this research helps to increase analytical skill, communicative skill and decision-making on investment and suggestions for its improvement.

1.6 Limitations of the Study

The scope of the study is subjected to various limitations, which are as follows

- Among 32 commercial banks, only 2 banks are chosen for the study. Thus, the finding could not be extensively generalized to all the existing commercial banks of the country.
- The study will cover only a period of 5 fiscal years i.e. 2007/08 to 2011/12 for the further calculations.
- Mostly, the secondary data are used for the analysis purpose. So, the accuracy and reliability of the data may be the part of argument. However primary data is also used to consider the views of investors.
- Time constraints could limit the details and depth of the study.
- The interest incomes from the flow of loans, advances and overdraft are considered as the loan return whereas the overall market interest rates of commercial banks is averaged to get the market return.
- The dividend incomes from the investment of shares in other companies are considered as the stock return and NEPSE index is considered for the calculation of the market return.

1.7 Organization of the Study

This study has been broadly divided into five chapters, which are as follows:

Chapter I: Introduction

This chapter includes the background of the study, statement of the problems, focus of the study, brief introduction of sample banks, objectives of the study, significance of the study, limitation of the study and organization of the study.

Chapter II: Review of Literature

This chapter includes the reviews of the relevant previous writing and the studies to find the existing gaps. So, the past studies in relation to the concerned topic are going to be reviewed to examine what new can be contributed to make the study more relevant. Reviews of the journals, books, newspapers, annual reports are also going to be included.

Chapter III: Research Methodology

This chapter deals with the methodology used in the study. It briefly explains about the statistical tools which will be used to evaluate the trend analysis for the concerned topic. It consists of the research design, population and sample, sources of the data collection, various tools and techniques for analysis, methods of analysis and limitations of the study.

Chapter IV: Data Presentation and Analysis

This chapter comprises the main part of the study. It deals with the presentation and analysis of the data and information collected from primary as well as secondary sources and scoring the empirical findings of the study through definite course of the research methodology.

Chapter V: Summary, Conclusion and Recommendation

This chapter covers the summary of the whole study. It is followed by the basic conclusions of the study based on the fourth chapter and lastly, the recommendations have also been presented for considerations on the basis of the conclusions.

CHAPTER – TWO

REVIEW OF LITERATURE

The study is divided into two parts one is conceptual framework and another is review of previous studies.

2.1 Conceptual Framework

There are various national and international books regarding the risk and return, which are taken into consideration. The study mainly focus on the trade-off between risk and return, it emphasized the implication in the investment of common stock.

2.1.1 Return

Worldwide know that return/profit is outcome of investment which is achieved today or coming future. It is known as reward for risk – taking uncertainty bearing and consequence of dynamic change. A businessman or Investor plan design to make profits and are the primary measure of its success.

The rate of return from a capital investment is a concept that has different meanings to different investors. Some companies seek near-return cash inflow and give less value to more distant return. Such a firm might purchase the stock of other firms that pay large cash dividends other investors are concerned primarily with growth. They would seek projects others measure return using financial ratio. They might seek to invest in a company that has a high return on investment or equity.

Total return = Dividend income + Capital gain

“Return is the changes in value of an assets plus any cash distribution, expressed as a percentage of the beginning of period investment value (Gitman, 1988:221)._Suppose the video concept company has several thousand shares of stock outstanding and you are a shareholder further purpose that you purchased some of the shares of stock in the company at the beginning of the year; it is new year end and you want to figure out how well you have done on your investment in stocks, like that in bond or any other investment, comes in two forms.

First, over the year most companies pay dividends to shareholders. If the company is profitable, it generally will distribute some of its profits to the shareholders. Therefore, as the owner of shares of stock, you will receive some cash is called dividend, during the year. This cash called the income component of your return. In addition to the dividends, the other part of year return is the capital gain-or, if it is negative, the capital loss (negative capital gain) on the investment. Suppose at the end of the year, the company paid the dividend, you would have received dividend income. Suppose, lastly that at the end of the year the market price of the stock is push up, stock price is increased, you have a capital gain vice-versa you have a capital loss (Pandey 2008:156).

2.1.2 Return on Common Stocks

The term returns maybe defined as the changing value plus any such receipt which is expressed as a percentage of the beginning period investment value. An investor can be obtaining two types of return from any investment in a share of stock or bonds. They are

- Income from price appreciation
- Cash income from cash dividend

“The return from holding in investment over some period, say a year, is simply any cash payments received due to ownership, plus the change in market price divided by the beginning price. Thus, the return comes from two sources: income and price appreciation (Brealey and MayersS, 1994:84).

2.1.3 Holding Period Return

“The return from an investment is the change in market price, plus any cash payments receive due to ownership, divided by the beginning price

“The single period return is the basic random variable in investments analysis. This rate of return concept is important because it measure the speed of which the investor’s wealth increase or decreased. An investment’s single period rate of return denoted by r_j is simply the total return on investor would receive during the

investment period or holding period stated as percent of the investment's price at the start of holding period (Francis, 2000:45).

If an investor purchase a stock of any companies and holds it for certain period he/she can get return in two ways: one is increased in the value of that stock as compare to initial one. Another is direct cash payment. The increase in the value as called capital gain and direct cash payment is called dividend gain.

The return from holding an investment over some period is simply a cash payment received due to ownership plus the change in market price divided by the beginning price.

$$HPR_t = \frac{(P_{t+1} - P_t) + D_t}{P_t}$$

HPR_t = Holding period of return during the t^{th} period

P_t = price (value) of assets at time t (beginning price)

P_{t+1} = cash received from the assets investment in the time period of $t+1$.

D_t = dividend/coupon interest received during the t period

2.1.4 Common Stock

“Common stock holders are the owner of the corporation. As owners, common stock holder have certain rights, the most important are the right to participate in profit distribution, the right to vote etc. from the corporation viewpoint, common stock represents a fund raising device. From the investor's viewpoint, stock ownership gives the stockholders an opportunity to share in the profit when declared as dividend, opportunities to make money on appreciation in value of the securities and opportunity to vote for directors of the corporation(Bradley,1993:104).

“Common stockholders of a corporation are its residual owner their claim to income and assets comes after creditors and preferred stockholders have been paid full. As a result, stockholders return on investment is less certain that the return to lender or to a preferred stockholder. On the other hand, the share of a common stock can be authorized either with or without par value. The par value of a stock is merely a stated

figure in the corporate charter and is of little economic significance (Van Horne, 1997:560).

Common stock represents the ownership position in a company. The holders of ordinary shares called shareholders or stockholders are the legal owners of the company. Ordinary shares are the source of permanent capital since they do not have a maturity date. For the capital contributed by shareholders by purchasing ordinary shares, they are entitled for dividends. The amount of rate of dividend is not fixed. The company's board of directors decides it. An ordinary share is therefore, known as a variable income security (Pandey, 2007:125).

2.1.5 Common Stock Values

Common stock values are either denoted by par value, book value or market value. These three terms are different and their rupee amount differs.

2.1.5.1 Par Value

The face value of one stock established at the time the stock is initially issued is known as par value. The par value of common stock remains unchanged unless and until the stock split or reverse split exists. Generally common stock carry Rs 100 par value.

2.1.5.2 Book Value

The sum of the cumulative retained earnings and other entries such as common stock and capital contribution in excess of par value under stockholder's equity is the book value of the equity.

2.1.5.3 Market Value

The value of share in secondary market traded between investors and traders is the market value. Market value is the consequence of demand and supply.

It is considers the earnings and dividends, capital market and company risk.

2.1.6 Features of Ordinary Shares (Common Stock)

Common stock has different types of features which are different from other securities. Common stock's features are generally linkage with shareholder's right and claim.

- **Claim on income:**

Ordinary/common shareholders have low priority/residual ownership claim. They have claim to the residual income, which is earning available for common shareholders after paying operating expenses, interest & tax charges and preference dividend.

- **Par value:**

Owners of common stock in any companies are referred to as shareholders. They receive stock certificates for the shares they own. There is often a stated value on each stock certificate called the par value.

- **Claim on assets:**

Common shareholders also have residual claim on assets of their corporation at the time of liquidation.

- **Voting right:**

Common shareholders have voting right to elect the board of director (BOD). In most of the common stocks each shareholder casts one vote in one share.

- **Limited liability:**

Every shareholder has nothing more liability or contributes In the event of financial distress liquidation, if the shareholders have already fully paid the issue price of the shares purchased.

- **Preemptive right:**

A privilege offered to existing shareholders for buying a specific number of additional shares of the company's stock before the stock is offered to outsiders for sale. Preemptive right provides the existing shareholder is made provision by company's charter or law.

2.1.7 Required Rate of Return

The required rate of return is the minimum rate of return that an investor expected from his/her investment in risky assets. The required rate of return on an individual securities investment is represent by a risk free rate of investment plus a risk premium. Hence required rate of return is the minimum return that an investor expects at least not to suffer from loss. If investor goes to below the required rate of return he definitely suffer from loss.

If investors are invest in risky securities they must receive a risk premium to compensate for the added risk. Risk premium is an excess return over the risk free rate, expected for incurring the risk associated with the market portfolio. Risk premium is the difference in any particular period between the actual rate of return on a risky assets and the risk free rate. Formula of required rate of return is as follows:

$$K_j = R_f + [E(R_m) - R_f] \beta_j$$

Where, K_j = required rate of return

R_f = risk free rate of return of stock j

$E R_m$ =expected rate of return of market portfolio

β_j =beta coefficient of stock j

The return that an investor expects from his investment in the forthcoming future is called expected rate of return. An investor normally estimates his expected rate of return by analysis the trend of return of previous years.

2.1.8 Risk

“Risk defined most generally the probability of the occurrence of unfavorable outcomes. But risk has different meanings in different contents. We are interested in the effects of risk on the evaluation of assets or securities-claims on assets. In this context, risk refers to the probabilities that the return and therefore, the values of net or security may have alternative outcomes (Weston & Brigham, 1981:94).

“Risk is associated with the variability of future return of the project. The greater the variability of the expected returns the riskier the project. Risk can, however be measured, as the likelihood that the actual return from an investment will be less than the forecasted return”. (Hampton, 2003:396) “Risk can be thought of as the possibility that the actual return from holding a security will deviate from the expected return. The greater the probability of its occurrence, the greater is said to be the risk of the security” (Van Horne, 2005:94).

“Risk can be defined as the chance of receiving an actual return other than expected, which simply means there is variability in the returns or outcomes from the investment. Therefore, investment can be measured by the variability of the investment return” (Besley and Brigham, 2006:183).

2.1.9 Method of Measuring Risk

Every investment has uncertainties. Uncertainties make future investment returns risky. The sources of uncertainty that contribute to investment risk are as follows: There are many ways to measure risk mainly three methods are commonly used.

2.1.9.1 Standard Deviation

“A statistical measure of possible of the variability of a distribution around its mean, It is the square root of the variance” (Van Horne and Wachowich, 1996:91). This is the measure of the dispersion of forecast returns when such returns approximate a normal probability distribution. It is a statistical concept and is widely used to measure risk from holding a single asset. The standard deviations represents a largest dispersion of return and is a high risk, a low deviation is a small dispersion and represents a low risk.

It is the statistical measure of the variability of a set of observation it is measure of total risk. The smaller a variance shows the lower the risk of the stock and vice-versa. Standard deviation measure the risk of common stock. It is a statistical tool it measure the variability of individual stocks.

2.1.9.2 Beta Coefficient (β_j)

“The beta coefficient is an index of systematic risk. If an investment has a beta greater than the market it will be classified as an ‘aggressive’ investment. If an investment has a beta which is less than the market than it is known as a ‘defensive’ investment. If an investment has a beta of 1 it is expected to fluctuate in line with market and called ‘neutral’ investment” (Thapa and Koirala 2008:78).

Beta coefficient is a tool of measuring the risk of securities. In the business world we can get two type of risk: (a) systematic and (b) unsystematic. The market (systematic) risk of a security is measured in terms of its sensitivity to the market movements. This sensitivity is referred to the securities beta (β_j). Beta reflect the systematic risk which can't be reduced. Investor can estimate unsystematic risk when they invest their wealth in an unsystematic (Well diversified) market portfolio. A beta of 1.0 indicates average level of risk while more than 1.0 means that the security's return fluctuates more than that of market portfolio. A zero beta means no risk. Beta is a ratio of the covariance of returns of a security of return of the market portfolio.

2.1.9.3 Subjective Estimates

A subjective risk measure occurs when qualitative rather than quantitative estimates are used to measure dispersion. As an example, an analyst may estimate that a proposal offers a low level of risk. This means that, in the analyst's view, the dispersion of return will be very wide. Similarly, a high risk level will be accompany a project whose forecast returns may vary a great deal (Hampton, 1998) “The portion of an assets risk attributable to firm specific random events that can be eliminated through diversification”(Gitman, 1988:221).

2.1.10 Systematic Risk

“Systematic risk is the part of the total risk that can't be diversified away. The type of the risk arises because of the economy wide uncertainties and the tendency of individual securities to move together with changing the market. This part of risk cannot be reduced through diversification, and it is called systematic or market risk. Investors are exposed to market risk even when they hold well-diversified portfolios of securities”(Pandey, 1996:121).

The examples of systematic risk are.

- The government changes the interest rate policy.
- The government resorts to massive deficit financing.
- The inflation rate increases.

2.1.11 Unsystematic Risk

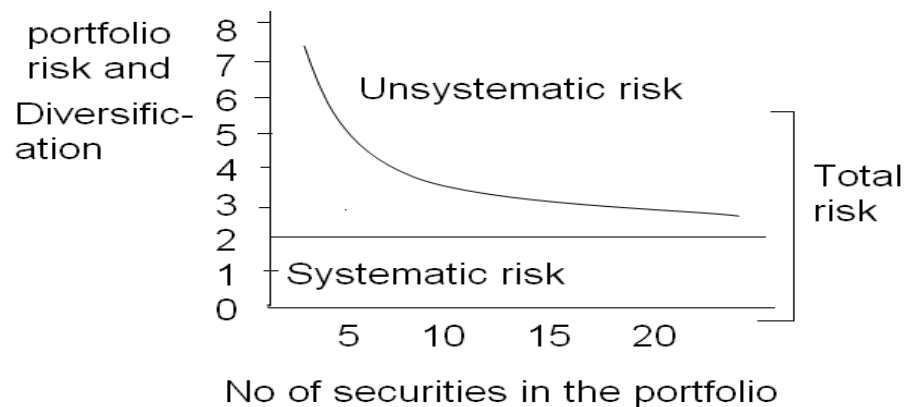
This type of risk can be reduced by efficient diversified portfolio. Diversifiable risk differs from one company to another company it is caused by events of particular firm.

The examples of unsystematic risk are:

- Workers declare strike in the company.
- The R&D expert of the company leaves.
- A formidable competitor enters the market.

Figure 2.1

Total Risk= Systematic + Unsystematic

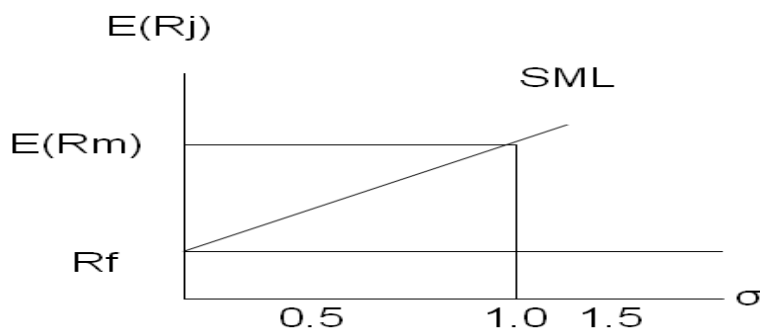


The figure also indicates that the standard deviation equals to the level of systematic risk when the number of securities in the portfolio becomes very large. As a result when the portfolio is broadly diversified it resembles to market portfolio which has only systematic risk. Thus, a well diversified portfolio contains only undiversifiable portion of the total risk. The market too prices only the undiversifiable risk.

2.1.12 Security Market Line (SML)

“The security market line (SML) equation shows the relationship between securities risk and rate of return. The return required for any security j is equal to risk free rate plus market risk premium times the securities beta” (Cheney and Moses, 1995:156) SML shows that the expected rate of return on a security is equal to a risk free rate plus the risk premium. The risk premium varies directly with systematic risk measured by beta. For given amount of systematic risk (β_j), SML shows the prevailing rate of return. “A security’s beta of 1.0 indicates on average level of systematic risk. If the security’s beta is greater than 1.0, then it implies the security’s returns fluctuate more than the market returns. On the other hand, a beta less than 1.0 means that the security’s returns are less sensitive to the changing in the market price” (Pandey, 1996:145).

Figure 2.2
Security Market Line



Total risk is divided into two parts: systematic risk and unsystematic. Unsystematic risk which can be eliminated through diversification and systematic risk which cannot be reduced. Since unsystematic risk can be totally eliminated without any cost, there is no price paid for it. Therefore, it will have no influence on the return of individual securities. The equation for SML is:

$$R_j = R_f + [E(R_m) - R_f] \beta_j$$

Here,

R_j = Expected return for an asset or stock j

R_f = Risk free rate

$E(R_M)$ = Expected market return

B_j = beta of the asset or stock j

2.1.13 Portfolio Theory and Risk Diversification

The portfolio theory provides a normative approach to the investor's decision to investment in assets or securities under risk. It is based on the assumption that investors are risk averse. This implies that investors hold well- diversified portfolio instead of investing their entire wealth in a single assets or security. A portfolio is a bundle or combination of individual assets or securities. It investor holds a well- diversified portfolio, than his concern should be the expected return and risk of portfolio rather than individual assets or securities. The second assumption of the portfolio theory is that returns of securities are normally distributed. This means that the mean (the expected value) and variance (standard deviation) analysis is the foundation of the portfolio decisions. The lower the correlation between the assets, the more the Markowitz diversification will be able to reduce the portfolio risk. The following figure 1, 2 and 3are shows simply a diversification in investment.

Figure 2.3
Portfolio Diversification

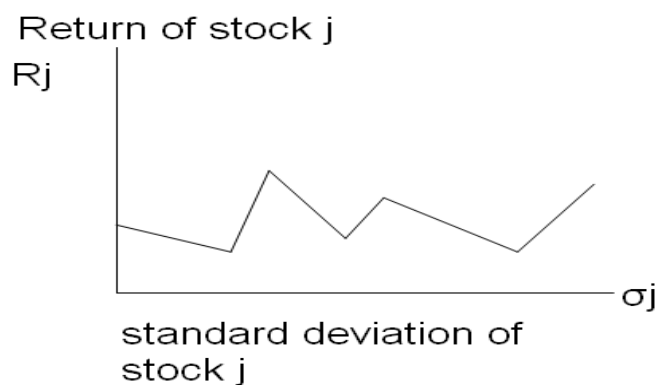


Figure 2.4

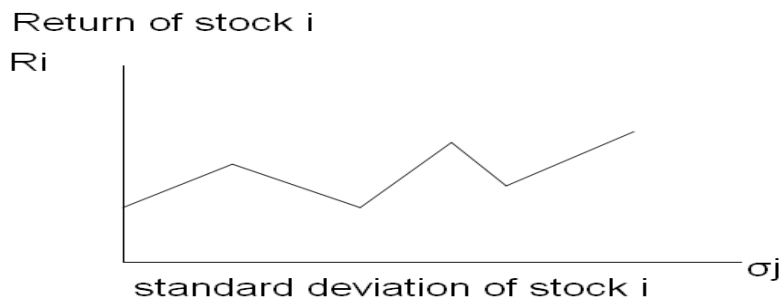
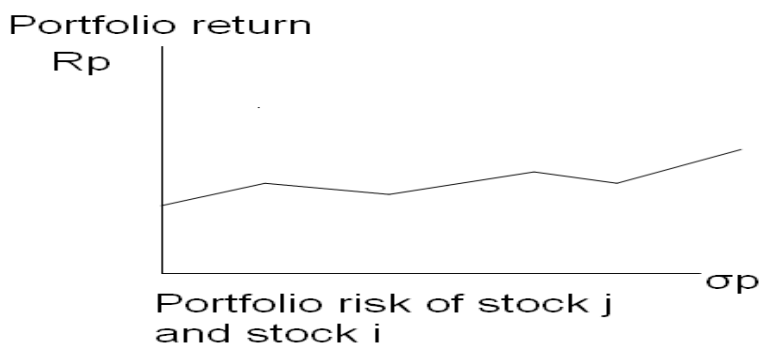


Figure 2.5



These three diagrams clearly show simply a diversification method, risk can be diversified by investing different stocks or appropriate portfolio.

2.1.14 Portfolio Return

Portfolio is a bundle of combination of individual assets or securities. The return of a portfolio is equal to the weighted average return of the individual assets (or securities) in the portfolio with weights being equal to proportion of investment in each asset. The return on a portfolio is simply a weighted average of the expected return on the individual securities in the portfolio with the weight being equal to proportion of investment in each asset.

2.1.15 Portfolio Risk

The portfolio risk depends on both the variances of the individual securities and the covariance between the two securities. The variance of a security measures the variability of an individual security's return. Covariance measures the relationship between the two securities for given variances of the individual securities, a positive

relationship or covariance between two securities increase the variance of the entire portfolio. A negative relationship or covariance between the two securities decreases the variance of the entire portfolio. If one of your securities tends to go up when the other goes down, or vice-versa, your two securities are offsetting each other. You are achieving what is called a hedge in finance and the risk of your entire portfolio will be low. However, if both your securities rise and fall together, you are not hedging at all. Hence, the risk of your entire portfolio will be higher.

2.1.16 Sources of Investment Uncertainty

We should know that the present is certain but the future will be uncertain. We invest today but the return will be achieved in the coming next upcoming days or years. Uncertainty makes the future return of investment in today more risky. The sources of uncertainty that contribute to investment risk are as follows:

2.1.16.1 Interest Rate Risk

It is defined as the potential variability of return caused by changes in the market interest rate. If the market interest rate goes up, then investment's values and market prices will fall down and vice-versa. The movement/variability of return is caused by interest rate movement in the market. This type of interest rate movement affects the price of bonds, stocks etc.

2.1.16.2 Purchasing Power Risk

It is the variability of return of an investor that suffers because of inflation. Inflation automatically reduces the purchasing power of investors. When inflation takes place, financial assets i.e. bonds, cash, stocks, may lose their ability to command the same amount of goods and services they did in the past. In other words, the real rate of return of financial assets may not adequately compensate the holder of financial assets for inflation.

2.1.16.3 Default Risk

It is the portion of an investment's total risk, the result comes from changes in the financial integrity of the investment.

2.1.16.4 Callability Risk

Some bonds and preferred stocks are issued with a provision that allows the issuer to call them for repurchase. The portion of a security's total variability of return that derives from possibility that issue may be called the call ability risk.

2.1.16.5 Convertibility Risk

Convertibility risk is the part of the total variability of return from a convertible bond or a convertible preferred stock.

2.1.16.6 Political Risk

Political risk emerged from political environment changes. It affects the assets value and market price. Political environment includes these elements: tax, policy, legislative and judicial system of government.

2.1.16.7 Liquidity Risk

Liquidity risk is that portion of an asset's total variability of return which result from price discount given or sales commission paid in order to sell the asset without delay.

2.1.17 Dividend

Dividend is the outcome (profit) of the investment which the investor invest their wealth in shares or stock. A company's total net income can be divided into two parts: earning to be distributed to the equity shareholders and earning to be kept in the organization. Earnings that are distributed to the shareholders are known as dividend and earning which are kept in the organization are known as retained earnings. Dividend policy determines the division of earnings between payments to stockholders and investment in the firms.

2.1.18 Forms of Dividend

The usual practice is to pay dividend in cash. In generally dividend is divided into two parts, one is cash and other is stock dividend. Dividend is the outcome of an investment of which investor invest their wealth in common stocks. A company's total net income can be divided into two parts: earning to be distributed to the equity shareholders are known as dividend and earning which are kept in the organization

are known as retained earnings. Dividend policy determines the division of earnings between payments to stockholders and reinvestment in the firm.

Total dividend = cash dividend + stock dividend

2.1.18.1 Cash Dividend

Most companies pay dividends in cash. Sometimes cash dividend may be supplemented by a bonus issue (stock dividend) A company should have enough cash in its bank account when cash dividends are declared. If the company does not have enough bank balance at the time of paying cash dividend, arrangements should be made to borrow funds. “When the company follows a stable dividend policy, it should prepare a cash budget for the coming period to indicate the necessary funds which would be needed to meet the regular dividend payment of the company. If it is relatively difficult to make cash planning in anticipation of dividend needs when an unstable policy is followed” (Pandey, 1996:275).

When the company distributes cash dividend it will be reduced cash account and reserve account of the company. It means, total assets and net worth of the company will be reduced itself. The market price of shares drops in most cases by the amount of the cash dividend distributed.

2.1.18.2 Bonus Share/Stock Dividend

“An issue of bonus share represents a distribution in addition to the cash dividend (known as stock dividend U.S.A) to the existing shareholders. This has the effect of increasing the number of outstanding shares of the company. The bonus shares are distributed proportionately”(Pandey, 2008:274).

2.1.19 Expected Return

This is the return that an individual expects a stock to earn over the next period. Of course because this is only an expectation, the actual return may be higher or lower. An individual’s expectation may simply be the average return per period a security has earned in the past. Expected rate of common stock is obtained by arithmetic mean of the past years return.

2.1.20 Coefficient of Variation (CV)

Coefficient of variation is the ratio of the standard deviation to expected return expressed as percentage. The coefficient of variation measure of relative dispersion that is useful in comparing the risk of assets with differing expected return.

“Coefficient of variation is the “percentage variation in the mean”. It is relative measure of dispersion, so it is independent of units of measurement. It always express in percentage”. (Karl Pearson, 1989:176) CV is used to standardized the risk per unit of return i.e. measure the risk per rupee. The coefficient of variation should be used to compare investments when both the standard deviations and the expected values differ. A project with a low CV has less risk per rupee than a project with a high CV.

2.1.21 Beta Coefficient (β)

“The market risk of a security is measures in terms of its sensitivity to the market movements. This sensitivity is referred to the securities beta (β). Beta reflects the systematic risk which cannot be reduced, investor can eliminate unsystematic risk when they invest their wealth in well diversify market portfolio. A beta 1 indicates average level of risk while more than 1.0 means that the securities return fluctuates more than that of market portfolio a zero beta means no risk. Beat is a ratio of the covariance of returns of a security; J and the market portfolio M, to the variance of return of the market portfolio” (Pandey, 2008:175). “Researchers have shown the best measure of risk of a security. The basic intuition of beta is that it measures the sensitivity of a change in the return of an individual security to the change in return of the market portfolio”(Stephen and Wasterfield, 1997:75).

2.1.22 Beta Portfolio (β_p)

Portfolio is the combination of two or more than two securities. Portfolio beta (β_p) is the weighted average beta of total assets that are involved in a portfolio. A beta coefficient for a portfolio is the weighted average of all individual securities beta included in the beta. It is denoted as β_p . β_p reflects the volatility of portfolio returns in response to the market return.

2.1.23 Portfolio Return (R_p)

Portfolio return is the weighted average of the expected returns on the individual securities. Return /profit are the outcome/output of the investment which will be expected every investor. Portfolio is the holding of securities and investment in financial assets i.e. bonds, stocks and others. The expected return on a portfolio, $E(R_p)$ is the weighted average of the expected returns on the individual assets in the portfolio with the weights being the fraction of the total portfolio invested in each asset.

2.1.24 Portfolio Risk

Portfolio risk is measured by a statistical tool standard deviation and variance .it as a function of proportions invested in the components. Portfolio risk is a function of the proportion invested in the components, the riskiness of the components and the correlation of returns on the components securities. A Portfolio risk depends on both the variances of the individual securities and the covariance between two securities. The variances of a security measure the variability of an individual security's return. Covariance measure the relationship between the securities for given variances of the individual securities, a positive relationship or covariance between two securities increase the variance of the entire portfolio. A negative relationship or covariance between the two securities decreases the variance of the entire portfolio. If one of your securities tends to go up when the other goes down or vice-versa, your two securities are offsetting each other.

2.1.25 Correlation Coefficient (r_{AB})

“A standardized statistical measure of the linear relationship between two variables; its range is from -1(perfect negative correlation) through zero (no correlation), to +1 perfect correlation” (Van Horne & Wachowich, 1996:97). The correlation is also measure the relationship between two assets. A project or investor can be reduced risk investing their assets in more than one asset. The risk diversification depends on the correlation between returns of securities.

The correlation coefficient will always lie between +1.0 and -1.0. If the correlation is positive, we can say that the variables are positively correlated. If it is negative, we

say that they are negatively correlated and if it is zero, we say that they are uncorrelated.

- Perfectly positive correlation (+1)
Risk cannot eliminate by diversification. Portfolio risk and return are linearly related.
- Positively negative correlation (-1)
Total risk can be eliminated by diversification. Portfolio return increase and the portfolio risk decline as higher proportion than individual risk.
- Zero correlation (0)
There is no relationship between the return of the securities, they are independent each other. In this condition, some risk can be reduced.
- Intermediate correlation between two securities, $\text{Cor}(AB)=\rho(AB)=0.75, 0.50$
Most of the stocks are positively correlated but not perfectly. In this condition risk can be maximum diversified but not eliminate completely.

2.1.26 Covariance

Covariance is a measure of the degree in which two variables ‘move together’ time (Thapa & Bhattra, 2006:75). A statistical measure of the degree which two variables e.g. Security, return) ‘move together’. A positive value means that, on average, they move in the same direction” (Van Horne, Wachowich, 1989:145). “Covariance is a measure of the degree in which two variables move together over time”. (Van Horne & Wachowicz, 1996:94) A covariance between the rates of return for the assets that is positive indicates that the rate of return tends to move in the same direction at the same time. If covariance is negative the rate of return of the assets tend to move in the opposite direction and zero value of covariance means there is no relationship between two assets at all.

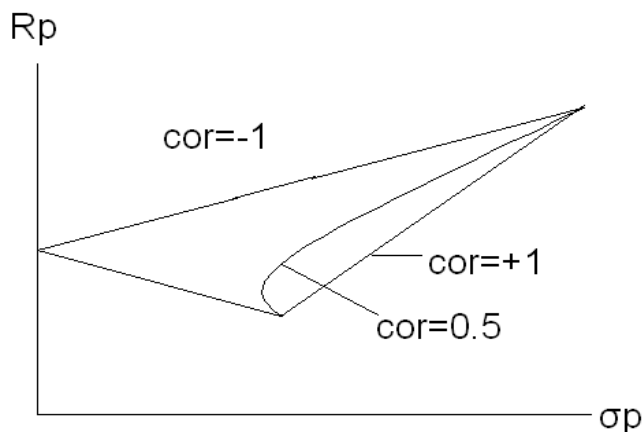
2.1.27 Efficient Portfolio

“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” (Choen, 1997:149). “Portfolio is the combination of investment assets. Portfolio is the holding of securities and investment in financial assets i.e. bonds, stocks. Portfolio management

is related to the efficient portfolio investment in financial assets. Investors are risk-averse. They would choose portfolio which offers the highest return for the given level of risk. A portfolio is not efficient if there is another portfolio with a higher expected return and the same standard deviation. If your portfolio is not efficient you can increase the expected return without increasing the risk, decrease the risk without decreasing the expected return or obtain same combination of increased expected return and decreasing the risk by switching to a portfolio on the efficient frontier” (Van Horne 1977:560).

Here, we understand that correlation between two or more securities. When two securities are perfectly positively correlated, the risk return relationship is shown by straight line AB. On other hand when two securities are negatively correlated, the risk return relationship is given by Line ACB. When two securities are not perfectly negatively or positively correlated, the risk return relationship is made by curve AEB. This curve AEB referred to the minimum variance portfolio opportunity set. We also know that the triangle AEB limits the set of opportunities.

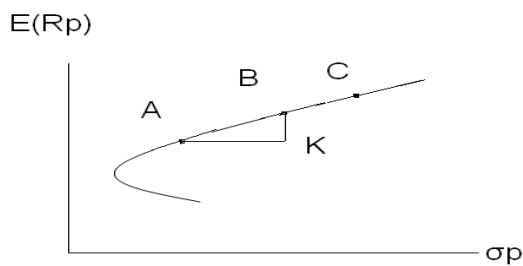
Figure 2.6
Efficient Portfolio



Portfolio A has minimum risk and minimum return. Portfolio B has high risk and high return, than C portfolio has high risk low return because proportionately higher increasing risk than proportionately increasing return. Thus, portfolio A and C dominated by portfolio B, risk-averse investor will prefer a portfolio which have

highest expected return for a given level risk or prefer a portfolio with the lowest level of risk for a given level of expected return. In the portfolio theory, this is referred to as the principle of dominance. The portfolio which has the highest expected return for a given level of risk is called an efficient portfolio. The frontier formed by the set of efficient portfolios is called the efficient frontier. The line ABC is the efficient frontier. It represents the locus of all the portfolios which have the highest return for a given level of risk. All the others portfolio which lie outside the efficient frontier are inefficient portfolios.

Figure 2.7

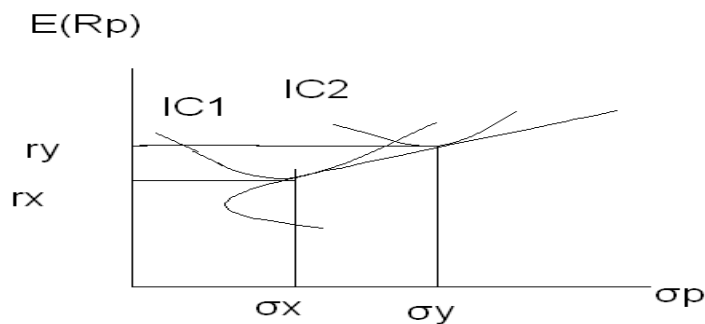


Portfolios to the left side of the efficient frontier are not possible, because they lie outside the attainable set. Portfolios to the right of the efficient frontier are inefficient because some other portfolio could provide either a higher return with same degree of risk or a lower risk for the same rate of return. In the above figure, point B provides the higher rate of return than portfolio K with the same level of risk. Other hand portfolio A provides minimum/low risk than portfolio K as the same rate of return. The portfolios A, B and C are lies on the efficient frontier. Portfolio A has low risk and high return. Both portfolios A and B are equally efficient portfolio. A portfolio selection by investor will be depended on his risk-return preference.

Once the efficient frontier is determined, we now consider the selection of optimal portfolio. We know that different individual have different attitude towards the risk and return. It means different individual have different indifference curve. The following figure illustrates portfolio choices for two individuals who have different indifference curve because they have difference attitudes towards risk. The optimal

portfolio for an investor is the point at which the efficient frontier is just tangent to the investor's indifference curve.

Figure 2.8



The point X and Y have the same portfolio opportunity set but they have different attitude towards risk and hence different indifference curves and different optimal portfolio. Risk-averse investors will choose only those portfolios that lie on the efficient set. Individual X prefers lower risk for which he has willing to accept lower return. His optimal portfolio is given by point X. Similarly individual Y prefers higher risk because he wants higher return. His optimal portfolio is therefore given by point Y which makes the highest level of satisfaction, an investor can achieve maximum profit setting potential portfolio.

2.1.28 Capital Asset Pricing Model (CAPM)

“CAPM is on equilibrium model of the trade-off between expected portfolio return and unavoidable risk” (Van Horne, 1997:561). Based on the behavior of risk-averse investors, there is an implied equilibrium relationship both risk and expected return for each security. In market equilibrium, a security is supposed to provide and expected return commensurate with its systematic risk, the risk that cannot be avoided by diversification. The greater the systematic risk of a security, the greater the return that investors will expect from the security. The relationship between expected return and systematic risk, and the valuation of securities that follows, is the essence of Nobel Laureate William Sharpe's capital assets pricing model (CAPM). This model was developed the 1960s, and has had important implication for finance ever since.

While other models also attempt to capture market behavior, the CAPM is simple in concept and has real world applicability.

Like any model, this one is a simplification of reality. Nevertheless, it allows us to draw certain implication about risk and size of the risk premium necessary to compensate for bearing risk. Because a complete and mathematically rigorous presentation of the model is beyond the scope of an introductory book, we shall concentrate on the general aspect of the model and its important implications. Certain corners have been cut in the interest of simplicity. As with any model, there are assumptions to be made. First we assume that capital markets are efficient in the investors are well informed, transaction cost are low, there are negligible restriction on investment and no investor is large enough to affect the market price of a stock. We also assume that investors are in general agreement about the likely performance of individual securities and that their expectations are based on a common holding period, say, one year period. There are two types of investment opportunities with which we will be concerned. The first is a risk free security whose return over the holding period is known with certainty. Frequently, the rate on short to intermediate term treasury securities is used as surrogate for the risk free rate. The second is the market portfolios of the common stocks. It is represented by all available common stocks and weighted according to their total aggregate market value outstanding. As the market portfolio is a somewhat unwieldy thing with which to work, most people use a surrogate such as S&P 500 Index. This broad based market-value-weighted index reflects performance of 500 major common stocks.

In the book “Investment analysis and portfolio management” written by the Prasanna Chandra has focused on capital assets pricing model. “The CAPM predict the relationship between the risk of an assets and its expected return. This relationship is very useful in the ways. First, it produces a benchmark for calculating various investments. For example, when we are analyzing a security we are interested in knowing whether the expected return from it is in line with its fair return as per the CAPM. SECOND, it helps us to make an informed guess about the return that can be expected from an asset that has not yet been traded in the market. For example, how should a firm price its initial public offering of a stock? Although the empirical

evidence on the CAPM is mixed, it is widely use because of the valuable insight it offers and its accuracy is deemed satisfactory for most practical applications”.

Prasanna Chandra presents the following basic assumption of CAPM:

- Individuals are risk–averse.
- Individual seek to minimize the expected utility of their portfolio over a single period planning horizon.
- Individuals have homogeneous expectation. They have identical subjective estimates of the means, variances and covariance among returns.
- Individuals can borrow and lend freely at risk-less rate of interest.
- The market is perfect, there are no taxes and there are no transactions cost.
- Securities are completely divisible, the market is competition.
- The quantity of risk securities in the market is given.
- Looking at these assumptions one may feel that the CAPM is unrealistic.

However, the value of a model depends not on the realism of its assumptions, but on the validity of its conclusions. Extensive empirical analyst suggests that the conclusions of the CAPM are reasonably valid. The relevant risk for and individual assets is systematic risk (or market related risk) be caused non market risk can be eliminated by diversification. The relationship between an asset return and systematic risk can be expressed by the CAPM.

2.1.29 Dividend per Share

The net profit after taxes belongs to shareholders. But the income which they really receive is the amount of earning distributed as cash dividend. Therefore, a large number of present and potential investors may be interested in DPS, rather than EPS. DPS is the earnings distributed to ordinary shares outstanding.

2.1.30 Securities

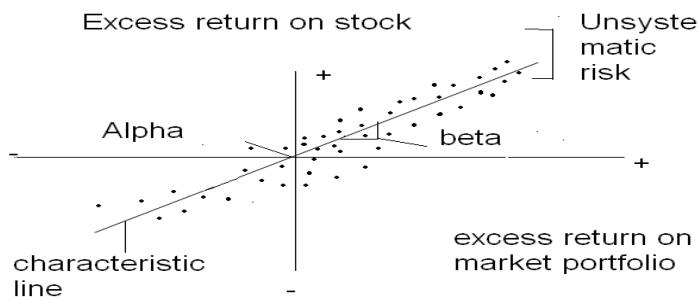
In general, only a piece of paper represents the investor’s rights to certain prospects or property and the condition under which he or she may exercise those rights. The piece of paper, serving on evidence of property rights, is called a security. It may transfer to another investor, and with it will go all its rights and conditions. Hence, the term of security can be understood as a legal representation of the right to receive prospective

future benefits under stated conditions. The primary task of security analysis is to identify misplaced securities by determining their prospective future benefits, the conditions under which they will be received, and the likelihood of such conditions.

2.1.31 The Characteristic Line

We are now a position to compare the expected return for the market portfolio. In our comparison it is useful to deal with returns in excess of the risk free rate. The excess return is simply the expected returns less the risk-free return. A comparison excess returns for a specific stock with these for the market portfolio. The colored line is known as the security's characteristic line; it depicts the expected relationship between excess return for the stock and excess return for the market portfolios. The expected relationship may be based on the past experience, in which case actual excess return for the stock and for the market portfolio would be plotted on the graph and a regression line best characterized the historical relationship would be drawn. A line describes the relationship between an individual security return and return on the market portfolio. The slope of this line is beta.

The dispersion of the data points about the characteristic line is a measure of the unsystematic risk of the stock. The wider the relative distance of the points from the line, the greater the unsystematic risk of the stocks; this is to say that the stock's return has increasingly lower correlation, with the return on the market portfolio. The narrower dispersion, the higher the correlation and the lower the unsystematic risk. From efficient diversification for a portfolio 20 carefully selected stocks, the data points would hover closely around the characteristic line for the portfolio.



Beta is simply the slope (i.e. the changes in the excess return of the stock over the change in the excess return on the market portfolio) of the characteristic line. If the slope is 1, it means that excess return for the stocks vary proportionately with excess return for the market portfolio. In other word, the stock has the same systematic risk as the market as a whole. If the market goes up and provides an excess return of 5% for the month, we would expect, an average, the stock's excess return to be 5% as well. A slope steeper than 1.0 means that the stock's excess return varies more than proportionately with the excess return of the market portfolio, Put another way, it has more unavoidable risk than the market as a whole. This type of investment called defensive.

2.1.32 Money Market

Money market refers to that financial market in which securities with a short term and highly liquid debt securities are traded. Thus money market comprises the securities that have short maturity period. It is too much liquid, marketable and lower risk than other securities.

2.1.33 Capital Market

It means financial market by which long term securities are traded. The securities having life more than one year generally traded in the capital market. More specifically, long term instruments such as stocks issued by corporation are basically traded in capital market. The capital market experienced an impressive growth in the last two years. Improvement in the peace and security situation, the central bank policy to increase the paid-up capital of banks and financial institutions, market reform, institutional and infrastructural developments related to the capital market has contributed to this growth. The activities of both the primary and secondary

2.1.34 Primary Market

Primary market is the market in which corporations raise new capital. Market in which corporations raise funds by issuing new securities is called primary market it is the new securities market. These securities can either sold directly by the company or through underwriter the behalf of the company. In the FY 2007/08 the Security Board of Nepal (SEBON) granted permission to 71 companies for mobilization of Rs.11.56

billion while 33 companies got approval to mobilize Rs. 2.75 billion in the preceding year. The number of capital mobilizing companies and amount of capital mobilization has risen by 132.25 percent and 320.36 percent respectively. Following chart shows the capital mobilization trends in the last five years in the primary market.

2.1.35 Secondary Market

The market where the existing and pre-developed securities are bought and sold is called secondary market. On the other hand, secondary market is the place where already issued securities are traded. It provides the liquidity of all securities will be traded in secondary market. Secondary market can be regarded as the center to convert stocks, bonds, and other securities into cash immediately. The Nepalese stock market continued to expand in the FY 2007/08 too. With the restoration of peace and a subsequent boost in investors' confidence, major indicators of the share market grew tremendously. Almost all the major indicators of the secondary market like amount of shares traded, number of listed shares, the number of transactions, annual turnover, total market capitalization of listed shares, markets capitalization and GDP ratio, turnover to market capitalization and the GDP ratios all increased in the review period.

2.1.36 Market Capitalization

The total market capitalization of listed shares almost doubled to Rs.366.24 billion during the review year. The central bank's directive to increase the capital base of banks and financial institutions has a major impact on the market value of listed shares. Most of the companies opted to issue bonus and right shares to increase their capital base, which attracted lots of investors.

2.1.37 OTC Market Started

NEPSE started the over-the-counter (OTC) market from 4 June 2008 to give shareholders a chance to sell or buy the shares of companies that are de-listed and that are not listed on NEPSE for failing. The shares of 43 companies can now be traded in the OTC market. But as per the request of Nepal Rastra Bank NEPSE has decided to restrict the shares trading of Nepal Bank Limited in the OTC, since shares trading of Nepal Bank Limited will have a negative impact on the ongoing Financial Sector

Reform Project. In the OTC Market one does not have to go to brokers to trade shares; one can come to NEPSE and trade, paying a commission of two percent for transactions of up to Rs 25,000, 1.5 percent for transactions of above Rs 25,000 but under Rs 5,00,000, and one percent for transactions of over Rs 5,00,000. However, no transaction has been made until the end of the fiscal year.

2.1.38 Automated Trading System

The Automated Trading System (ATS), an internationally compatible trading system was inaugurated by the then Finance Minister Dr. Ram Sharan Mahat on 24 August 2007. In order to adopt the ATS, NEPSE made an agreement with the British Company Comdaq Limited in November 2006 under the Asian Development Bank (ADB) loan assistance project--Corporate and Financial Governance (CFG)--at the cost of 300 thousand US dollars. The system has helped eliminate all possible human errors as seen in the open outcry trading procedures. Several international practices have been incorporated to make the system internationally compatible and modifications have also been made to customize the existing rules and regulations of the country. The following features are therefore found in the existing automated trading system.

1. Client Management

Client Management enables a broker to create a client. Without creating a client the broker will not be allowed to place any order. The broker has to insert various details of the client, including a *client code*, which is a unique code for that particular client. After receiving an order, the broker has to place the order for that client on the First in First out (FIFO) basis of the order registered by the client's in the broker's office.

2. Order

It is an expression of interest to either buy or sell a specified quantity of stock either at a specified price or at the current market price. An order is given by a client to a licensed broker. There is an *order entry form* in the system through which a broker place the purchase or sells orders. Generally, four types of order can be placed in the system:

Regular: An order which is completed on the exchange and that confirms the order of lot size or greater than that.

Odd-Lot: An order which is completed on the exchange and that confirms the order less than lot size.

Manual: An order which is placed by brokers and is reported individually by the buying and selling brokers.

Block: An order which is placed by brokers and confirms to the minimum block trade quantity specified by the exchange and is reported individually by the buying and selling brokers.

3. Price

It is the price, which the buyer quotes in his/her buy or sell order. The investors as usual can quote either *fixed price*, *price in range* or *market price*. If broker find the price within range they enter the details to execute the transactions. In the present system the order entry form on computer has been developed to indicate a price either in *limit* or *market*. If the price is given in fixed, brokers insert the fixed price and if it is given in range they insert the best price for their clients. Brokers must always attempt to execute transactions to protect their clients' interest. If investors are sellers brokers must attempt to execute transactions at higher prices and if investors are buyer brokers must attempt to buy at low prices. It is the negotiation process through which they execute the transactions. If the price is market then after brokers will execute orders at the market price, that is, they buy or sell the shares at market price.

4. Trading Hour Extended

From 19 December 2007 NEPSE has increased the trading hours by one hour due to an increasing trading pressure after the automation of trading. Initially, NEPSE opened its trading activities for only two hours. Now the trading floor opens from 12.00 noon to 15.00. NEPSE has expected that investors in general and small investors in particular will benefit from the increase in trading hours.

2.2 Review of Related studies

2.2.1 Review of Journals and Articles

Mahat (2006) has published an article entitled on "*Effective Banking*" which explained that the efficiency of banks could 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 quality 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 the less inputs. Interest expenses to interest income ratio shows the efficiency of banks in mobilizing resources at lower cost and investing in high yielding assets. In other words, it reflects the efficiency in the use of funds. The operating profit to total income ratio helps in assessing whether banks are doing the right things internally. According to Mr. Mahat the analysis of operational efficiency of banks will help one in understanding the extent of exposure of banks under the changed scenario and in deciding when to back up. This may also help the inefficient bank to upgrade their efficiency and be viable in the situation developing due to slowdown in the economy. The regulation should also be concerned on the fact that the banks with unfavorable ratio may bring catastrophe in the banking industry.

Michael J. Brennan and H. Henry Cao (2008) have published an article entitled on "*International portfolio investment flows*". This article develops a model of International equity portfolio investment flows based on differences in informational endowments between foreign and domestic investors. It is shown that when domestic investors possess a cumulative information advantage over investors about their domestic market, investors tend to purchase foreign assets in periods when the return on foreign assets is high and to sell when the return is low.

Followings are the conclusions from the article:

- The article has developed a model of international equity portfolio flows that relies on informational differences between foreign and domestic investors.
- The model predicts that if foreign and domestic investors are differentially informed then portfolio flows between two countries will be a linear function of the contemporaneous returns on all national market indices: and if

domestic investors have a cumulative information advantage over foreign investors about

- Domestic securities, the co-efficient of the host market return will be positive.
- Portfolio flows are associated with returns on national market indices as the symmetric information hypothesis implies.
- The examination of U.S. portfolio investment in emerging markets shows the strong evidence that U.S. purchases are positively associated with local market returns in many countries.
- This model is able to explain only a small proportion of the variance of international equity portfolio flows.

Michael Koehn and Anthony M. Santomero (2010) has published an article entitled on "*Regulations of Bank Capital and Portfolio Risk*" to examined the portfolio allocation that flows from the portfolio decision of the firm and the effects on bank portfolio risk of a regulatory increase in the minimum capital assets ratio that is acceptable to the supervisory agency. The allocation across assets becomes the choice variable deriving the optimal mean rate of return per unit of the capital and the variance of that return. Therefore, the analysis will be developed in terms of risk and return per unit of capital with no loss in generality. According to them, an explicit relationship between the risk of the bank portfolio, the amount of bank capital held and the chance of bankruptcy must, therefore, be obtained to evaluate the result of bank capital regulation.

Shrestha (2012) has published an article entitled on "*Portfolio management in commercial bank, theory and practice*". According to him, the portfolio management becomes very important for both individuals as well as institutional investors. Investors would like to select a best mix of investment assets subject to select mix of investment assets subject to following aspects:

- Higher return which is comparable with alternative opportunities available according to the risk class of investors.
- Certain capital gain.
- Flexible investment.
- Good liquidity with adequate safety of investment.

- Maximum tax concession.
- Economic, efficient & effective investment mix.

Following findings have been point out from the research:

- To find out the investible assets having some for better returns depending upon individual characteristics like age, health, need, disposition etc.
- To find out the risk of the securities depending upon the attitude of investors towards risk.
- To develop alternative investment strategies for selecting a better portfolio.
- To identify securities for investment to refuse volatility of return and risk.

2.2.2 Review of Thesis

The thesis related with the portfolio of stocks as well as the portfolio of various investment and assets, are reviewed as reference which have made this study easier. The thesis/studies reviewed are presented below in conclusive manner.

Shrestha (2006) prepared the thesis on the title '*Portfolio Analysis of Common Stock of Commercial Banks in Nepal*'. The main objective of the study is to find out level of portfolio risk and return on stock of commercial bank investment. The other specific objectives are;

- To analyze the risk and return of common stock of reviewed banks.
- To analyze the market price movement of the common stock.
- To try to find out the best portfolio from NEPSE.

Major Findings:

- Expected return of HBL stock is highest i.e. 53.68% and NABIL is lowest i.e. 32.72% among the banks. NBBL and SCBL have expected return of 47.05% and 39.02% respectively. The risks of NBBL is highest i.e. 93% and SCBL has a lowest risk i.e. 55.42% HBL and NABIL have a risk of 84.98% and 60.86% respectively.
- The correlation of stock, return and market shows that all of the banks stock are highly positive correlated with the market. The correlation values of common stock of all bank with the markets is nearly equal +1. Stock of NBBL

is highest positive correlation which has values of +0.918 and HBL is lowest positive correlated which has a value of +0.82.

- All of banks beta of common stock is greater than 1. Beta greater than 1 implies that stocks are more volatile than market or said to be aggressive stock. NBBL has the highest beta i.e. 2.1785 and SCBL has the lowest beta i.e. 1.2142. All of the stocks are aggressive.
- NBBL has highest portfolio return i.e. 7.98% and highest portfolio risk i.e. 21.70%. NBBL has invested its more funds on risky assets and fewer funds on risk free assets. So there exist highest risks as well as return. The principle “higher the risk higher the return” is applied for it. Likewise, HBL has the lowest portfolio return i.e. 5.33% and portfolio risk 0.35%. It has invested more of its fund in on risk free assets and least fund in risky market. The principle “no risk no gain” is applied for it.
- The performance measure shows the ranking stock by different method. The Sharpe’s performance shows that performance of stock of SCBL is 1st and HBL is 4th. The Treynor’s performance measure shows that performance of stock of NBBL is 1st and HBL is 4th. Likewise Jensen’s performance measure shows the performance of stock of SCBL is 1st and NBBL is 4th among the banks.
- Among four banks optimal portfolio return and risk shows that return NBBL is highest i.e. 32.7% and return of HBL is lowest i.e. 24.9% and HBL has a highest portfolio risk of i.e. 61% and SCBL has a lowest portfolio risk of 34.8%.

Poudyal (2006) prepared the thesis on the title “*Formation of optimum investment portfolio in Grade A Companies, listed in the Nepal Stock Exchange*”. The main objective of this study is to analyze the risk return characteristics of the securities with a view to form an optimum investment portfolio among the securities of the companies listed in NEPSE under Grade ‘A’, on the basis of monthly data from mid July 2003 to mid March 2005. The other specific objectives are;

- To measure monthly return and risk of the securities of the sample companies.
- To provide suggestions based on the analysis of data.
- To select securities to be included in the portfolio.

- To form optimum investment portfolio.

Major findings:

- The study shows that the stocks of Nepal Bangladesh Bank Ltd is being ignored for the investment because the stocks are with negative return within the period of the study and at the same time, on the basis of return characteristics, the stock of Nabil Bank Ltd. is the best one for investment.
- The stocks of one industry (i.e. banks) are positively correlated, which will not reduce the level of risk as expected. So, it is felt necessary to perform the study across industries such banks, financial institutions, insurance and on its basis it is found that the stocks selected for portfolio purpose are negatively correlated. Therefore, it would be beneficial to construct investment portfolio among the stocks of different industries rather than limiting within one industry.
- On the basis of the analysis of the portfolio return, portfolio standard deviation and coefficient of variation, the formation of the portfolio with the stocks of Nabil with 50%, NBL with 20% and EBL 25% investment proved to be the optimum in one industry whereas 50% Nabil, 25% NMBFL and 25% HGCIL proved to be the even better investment portfolio because of the spread across industries and the stocks being negatively correlated. Depending upon the Sharpe Single Index Model, it is observed that 16.25% investment in HGCIL, 25% in NMBFL, 30% in NIBL, 20% in EBL and 8.7% in Nabil would be the optimum investment portfolio investment portfolio.

Poudel (2008), Prepared the thesis entitled "*An Investment Portfolio Analysis of Joint Venture Banks in Nepal*". The study is based only to the portfolio analysis between banking sector and other sector. The main objective of this study is to identify the situation of portfolio management of commercial bank of Nepal and portfolio analysis between banking sector and other sector. The specific objectives of the study are as follows:

- To examine risk and return of commercial banks.
- To analyze market sensitivity.

- To know about systematic, unsystematic risk and analyze them in portfolio construction process.
- To analyze portfolio return and risk.

Major Findings:

- SCBL Stock has the highest expected return i.e. 20.486% and HBL has the lowest expected return i.e. 3.48% NIBL and SBIBL stock have the expected return is 11.63%. The risk (S.D) of SBIBL is the highest i.e. 62.22% and SCBL has the lowest risk i.e. 33.10%. HBL and NIBL have a risk of 37.24% and 37%, respectively. The market risk (Market S.D) is 36.40%. So it shows that SCBL has higher the return lower level risk.
- All the returns of commercial banks are positively correlated with returns of market because all values are nearly equal to +1. SBIBL stocks return are the highest positively correlated and SCBL stocks returns are least positively correlated with return of market. All banks have a beta less than 1 except SBIBL. SBIBL has highest beta i.e. 1.63 and SCBL has the lowest beta i.e. 0.77. So stock returns of SBIBL are more volatile and stock returns of SCBL is less volatile among four commercial banks.
- Total risk of SBIBL stock is highest and total risk of SCBL stock is lowest among four banks. SBIBL stock has 91% of un-diversifiable risk only 9% of its risk on total risk is diversifiable risk. HBL has 84.5% of un-diversifiable risk and remaining 16.5% diversifiable risk on total risk. NIBL and SCBL have an 85.5% and 72% of un-diversifiable risk and 14.5% and 28% risk and diversifiable risk respectively.
- The required rate of return of SBIBL is the highest i.e. 16.34% and SCBL stock is the lowest i.e. 9.9%. Other bank HBL and NIBL have a required rate of return of 11.18% and 11.18% respectively. SCBL stocks required rate of return is less than expected return, so the stock's price is under priced. But other banks stock required rate of return is greater than expected return so the stock price is one Priced.
- NIBL has the highest portfolio return i.e. 8.2643 and it has the highest portfolio risk i.e. 20.03%. HBL has the lowest portfolio return i.e. 4.2447% and it has the lowest portfolio risk i.e. 0.4831%. SCBL and SBIBL have a

portfolio return of 6.1683% and portfolio risk of 9.8134% and 0.6145% respectively.

- The performance measure shows that the stock of NIBL is the highest i.e. 4.118, stock of HBL is lowest i.e. 0.0984. Stock of SCBL is second higher i.e. 0.2055 and stock of SBIBL is in third position among banks.

Shrestha (2010) prepared the thesis on the title “*Portfolio Management Practice and Portfolio Risk and Return Analysis of the Joint Venture Commercial Banks of Nepal*”. The main objective of the research is to analyze and compute portfolio risk and return. Beside of the main objective, there is other objective to analyze the holding period return of the joint venture sector. Risk analysis have significance effect on the portfolio analysis, therefore risk diversification is the objective of the study. The other specific objectives are;

- To analyze and compute holding period return of joint venture commercial banks.
- To analyze the portfolio risk and return between or among joint venture commercial banks
- To distinguish the diversifiable and non diversifiable risk of joint venture commercial banks.

Major findings:

- The expected rate of return of EBL is the highest among Nabil Bank, HBL and SCBNL. So, it can be concluded that EBL has good performance.
- CV is a measure of dispersion, which is useful in comparing the risk of assets with the expected return. CV of HBL is the lowest among the sample banks. Therefore, it is good to invest in HBL as compare to other sample banks.
- EBL has the highest diversifiable risk, which is totally removed or minimized by using portfolio methods. But Nabil Bank has the highest non diversifiable risk, which is minimized up to certain level but cannot be removed. The investors should bear this risk.
- Beta coefficient measure the systematic risk that exists in the individual assets. The value of beta less than +1 is defensive security and greater than +1 is aggressive security. Nabil Bank has the highest beta coefficient (i.e. 1.5)

among other sample banks' assets. Therefore, Nabil Bank's asset is more aggressive and highly volatile in nature. Similarly, the beta coefficient of HBL is 0.75, less than +1, so the stock of HBL is defensive and exist low systematic risk.

- In the context of portfolio risk and return of Nepalese joint venture banks' stocks, they took higher portfolio risk to increase little bit portfolio return, which is the sign of unstable economy.
- The investors cannot take appropriate measures and tools to select portfolio securities for investment. The portfolio investment is heavily influenced by signaling effect in market.

Bhatta (2011) prepared the thesis on the title "*Portfolio Management of Listed Finance Companies in Nepal*". The main objective of the study was to identify the present situation of portfolio management of finance company in Nepal with the help of risk–return and other relevant variables which conclude that the most of the finance companies have enough unsystematic risk that means there is not effective portfolio management of listed finance companies. In the context of portfolio risk and return of Nepalese finance companies, investor has to bear a higher portfolio risk to increase little bit of portfolio return.

The major problem to manage the portfolio is volatility of different securities in Nepalese capital market. For the selection of the portfolio in Nepal, technical analysis does not work effectively but fundamental analysis work effectively. In Nepalese stock market, passive strategy is more suitable than active strategy to achieve better result. Corporate investor think portfolio evaluation is necessary but due to lack of specific knowledge, they depend on conventional method.

Rijal (2012) prepared the thesis on the title "*Portfolio Analysis of Investment Pattern of Commercial Banks in Nepal*". The main objective of the research is to analyze the existing situation of the investment pattern of the commercial banks as well as the present situation of the portfolio performance. Similarly, there are other specific objectives also which the researcher has undertaken for the study.

- To highlight the concept of investment and loans and advances portfolio.

- To highlight the relationship of investment with total deposit, loan and advances, net income etc.
- To evaluate the financial performance of commercial banks in term of investment strategies.
- To analyze the risk and return ratio of commercial banks.
- To analyze how commercial banks manage their risk and return on investment using portfolio concept.

Major findings:

- In investment portfolio, the industry average investment on government securities is 73.75%, among the commercial banks, EBL has invested the highest amount of funds on government securities i.e. 96.28% and NIBL has invested lowest 49.55%, other banks SCBL, NABIL and HBL have invested highest amount of funds on government securities among commercial banks i.e. 73.83%, 78.82% and 80.27% respectively and EBL has invested lowest amount of funds on share and debenture i.e.3.72%. NABIL and HBL have invested lower than industry average and the industry average in this case is 24.25%, on which SCBL and NIBL is invested higher than industry average i.e. 26.17% and 50.45% respectively. In case of NRB bonds no banks are investing. There is zero amount of investment.
- There is positive correlation coefficient between return on investment made by commercial banks in government securities and loan and advance i.e. 0.733 and there is negative correlation coefficient between return on investment made by commercial banks in government securities and share and debenture and loan and advance and share and debenture i.e. -0.143 and -0.476 respectively. This shows the low degree of negative relationship between assets. Such assets are very useful to make portfolio combination, So that the risk of the portfolio will be significantly reduced.
- There is positive covariance between the returns on investment made by banks in securities and loan and advances which shows better utilizations of deposits.
- The total investment to total deposits ratio of selected commercial banks shows that SCBL is the most successful in utilizing its resources on investment than others commercial banks. The mean ratio and Coefficient of

Variation also reveals that NABIL and HBL are moderate in utilizing its resources on investment. While NIBL and EBL are not so successful in better utilizing their total deposits on investment of various assets.

- The loan and advance to total deposit ratio of selected commercial banks shows that EBL is the most successful in utilizing its resources on loan and advance than other commercial banks. The mean ratio and Coefficient of Variation also reveals that NIBL and NABIL are moderate in utilizing its resources on loan and advance while SCBL and HBL are not so successful in better utilizing their total deposits on loan and advance.
- The total investment, total deposit and investment on share and debenture, loan and advance and government securities of commercial banks are increasing per year. In trend analysis, the investment of commercial banks on share and debenture is increasing more rapidly than government securities and government securities is increasing more rapidly than loan and advance during the period of the study.

2.3 Research Gap

In Nepal, there have been no up-to-date studies carrying out regarding portfolio management of investment in the securities issued by listed commercial banks. Independent studies regarding the analysis of stocks have not yet been found. It is found that only master's degree students have been carrying out thesis works in such topics. Nevertheless, these studies are concentrated on portfolio analysis of commercial banks. No study has been carried out regarding securities portfolio consisting of the stocks of listed commercial banks. Most of the studies are concentrated on the risk and return analysis of stocks of listed companies. Keeping in view the above facts and situation, different sets of portfolios between the stocks of listed commercial banks have been created using different weights. Optimum portfolio of three assets has also been chosen based on the maximum return and minimum risk from the created sets of portfolios. Hence, this study has attempted to introduce new model for creating the best portfolio and assigning weights between the stocks of commercial banks available in Nepalese stock market.

CHAPTER - THREE

RESEARCH METHODOLOGY

Research methodology is the process of arriving to the solution of the problem through planned and systematic dealing with the collection analysis and interpretation of fact and figure. Research is a systematic method of finding out solution to a problem where as research methodology refers to the various sequential steps to adopt by a researcher in studying problems with certain objectives in view. To find out such solution of problems various statistical and financial tools and techniques are applied according to the nature of phenomena.

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done systematically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them (Kothari; 1990).

3.1 Research Design

Research design is a conceptual framework within which a researcher conducted. Research design is plan for the collection and analysis of data. It presents the series of guide posts enable the researcher to progress in the right direction in order to achieve the goal. The design may be a specific presentation of the various steps in the research process. These steps include the selection of a research problem, presentation of the problem, formulation of hypothesis, conceptual clarity and methodology, survey of literature and documentation, bibliography, data collection, testing of hypothesis, interpretation, presentation and report writing. Generally, a common research design possesses the five basic elements viz. (i) selection of problem (ii) methodology are used (iii) data gathering (iv) data analysis and (v) report writing. (Joshi; 2007:52)

This analysis is based on certain research design keeping on objectives of the study in mind. This research design is guideline studying profound way for research ability. This study is based on recent historical data of last five years. The study range is from 2007/08 to 2011/12. The study is mainly focused on expected risk and return and

portfolio risk and return management of the listed commercial banks. To achieve objective of the study, descriptive analytical research design has been adopted.

3.2 Population and Sample Selection

Population refers to the entire group of people, events or things of interest that a researcher wishes to investigate. As this study is about portfolio management of commercial banks, all 32 Commercial banks of Nepal are taken into account as population. Out of the total population i.e. 32 commercial banks, 2 commercial banks are taken for this study. These two banks are the samples selected by using judgmental sample methods for this research. The selected sample banks with the selected fiscal year are:

Bank	Fiscal Year	Period	% of cover
NABIL	2007/08 –2011/12	5	50
NIBL	2007/08 –2011/12	5	50
	Total	10	100

3.3 Nature and Sources of Data

The researcher can use Secondary data. Secondary data are second hand data collected from different other sources such as magazines, newspapers, journals, second persons, etc. Some data are again collected from the respective commercial banks annual reports especially from profit and loss accounts, balance sheet and other publications made by the banks, which are the secondary data. Likewise, some other related information is gathered from related banks and related agencies like Nepal Rastra Bank, Nepal Stock Exchange Limited.

3.4 Data Processing Techniques

After the necessary data has been collected, relevant facts and figure have to be tabulated under the different headings. Such tables and formats are to be interpreted and explained as required. Different tools and techniques are used to interpret and

explain the data. Scientific calculator and simple microcomputer has been used to compute data.

3.5 Tools of Analysis

Various statistical and financial tools are used in this study. Wide varieties of methodology have been applied according to the reliability and consistency of data. Before using the analytical tools to compare the result, the data containing in the financial statements have been grouped and rear ranged so as to make comparison easy. For the purpose of analysis the data of five years were taken as sample from 07/08 to 11/12. The data are analyzed financially and statistically. The calculated results are also tabulated under different heading for ease of reading, and then they are compared with each other to interpret results.

3.5.1 Financial Tools

To evaluate the financial position and performance of any firm ratio is used as a key tool of financial analysis. “Financial analysis is the process of identifying the financial strength and weakness of the firm by properly establishing relationship between the items of the balance sheet and profit and loss account”. Financial analysis is the use of financial statements to analyze a company's financial position and performance and to assess future financial performance. The financial tools used in this study are briefly presented below:

Market Price of Stock (MPS):

There are mainly three types of MPS available in NEPSE annual report. They are high MPS, low MPS and closing MPS. Closing MPS is not an average price of high and low MPS but rather it is calculated by considering the whole years MPS. For the closing MPS trading report is followed.

Dividend (D):

Dividend can be given in the form of cash or shares. If the company declare dividend in cash then there is no difficulty in calculation. But if the company declares stock dividend or bonus share then shareholders get shares as dividend instead of cash. So

there is a little difficult to calculate the exact amount in cash. In case of stock dividend the formula for total dividend amount is considered as follows:

Total dividend = DPS + next year's closing price × stock dividend%

Single Period Rate of Return(R):

This is the annual realized return received on an investment and any change in market price, usually expressed in a percent at the beginning price of the investment. It is the summation of the dividend yield and the capital gain yield.

Symbolically,

$$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$$

Where,

R= Actual realized return on common stock at time t.

D_t= Cash dividend received at time t.

P_t= Price of a stock at time t.

P_{t-1}= Price of stock at time (t-1).

Expected rate of return on common stock:

Expected return is simply arithmetic mean of the past years return. This is an average return on common stock.

Symbolically,

$$\bar{R} = \frac{\sum R_j}{N}$$

Where,

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

N = No. of years.

Beta coefficient (β_j):

Beta is an index of systematic risk. It measures how much systematic risk a stock j has relative to market portfolio.

Symbolically,

$$\beta = \frac{\text{Cov}(R_j, R_m)}{\text{Var}(R_m)}$$

Where,

β_j = Beta coefficient of stock j.

$\text{Cov}(R_j, R_m)$ = covariance between stock j and market return.

Beta of market return equals to 1. If beta is greater than 1, then the assets is more volatile than market and is called aggressive beta. If the beta is less than 1, the asset is called defensive beta and its price fluctuation is less volatile than market.

Capital Assets Pricing Model (CAPM):

Capital assets pricing model describes the relationship between risk and required return. A security's expected return is the risk free rate plus a premium based on the systematic risk of the security.

Symbolically,

$$(\bar{R}_j) = R_f + [(R_m) - R_f] \beta_j$$

Where,

R_f = the rate of return on a risk less assets.

R_m = the expected return on the market portfolio.

$$\beta_j = \text{cov}(R_j, R_m) / \text{Var } R_m$$

Systematic Risk:

Systematic risk is known as the un-diversifiable risk. This risk is those portions of total variability in return caused by market factor that simultaneously affect the price of all securities.

Symbolically,

$$\text{Systematic risk} = \rho_{jm} \times \sigma_j$$

Where,

ρ_{jm} = Correlation between security and market.

σ_j = Variance of market.

Unsystematic Risk:

Unsystematic risk is also called diversifiable. This type of risk is unique to an organization and can be largely eliminated by holding a diversified portfolio of investment.

Symbolically,

Unsystematic risk = Total risk – Systematic risk

i.e. Unsystematic risk = $\sigma_j - \rho_{jm} \times \sigma_j$

Portfolio Return (R_P)

It is the weighted average returns of the stocks in the portfolio of two or more securities.

Symbolically,

$$R_p = W_1 \bar{R}_1 + W_2 \bar{R}_2 + \dots + W_n \bar{R}_n$$

Where,

\bar{R} = return of the portfolio

W_1 = weight of stock 1

\bar{R}_1 = Expected return of stock 1

W_n = weight of stock n

R_n = expected return of stock n.

Portfolio Standard Deviation (σ_p)

It is the combined standard deviation of the individual stocks return in the portfolio of two or more securities.

Symbolically, (For two Assets)

$$\sigma_p^2 = (W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1W_2Cov_{12})$$

Where,

σ_p^2 = variance of the portfolio returns of stock.

W_1^2 = weight of return of stock 1.

σ_1^2 = variance of return of stock 1.

W_2^2 = weight of return of stock 2.

σ_2^2 = variance of return of stock.

Cov_{12} = covariance between returns of stock 1 and 2.

3.5.2 Statistical Tools

Statistical tools are the mathematical techniques used to analyze and interpret performance. It is used to describe the relationship between variables and interpret the result. Statistics is also used to test the hypothesis that is set to know the information of population.

Mean (\bar{X})

The arithmetic mean or average is the sum of total values to the number of observations in the sample. It represents the entire data which lies almost between the two extremes i.e. the largest and the smallest item. For this reason an average is frequently referred to as a measure of central tendency. In this study it is used in data related to dividend of sample banks over five years. It is calculated as:

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

Where,

$\sum X$ = Sum of total values

N = Number of observation

Standard Deviation (σ): Standard Deviation is a statistical measure and is widely used to measure risk from holding a single asset. The standard deviation represents a large dispersion of return and is a high risk and vice versa.

Symbolically,

$$\sigma_j = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}}$$

Coefficient of Variation (C.V.):

Coefficient of variation is the ratio of the standard deviation of a distribution to the mean of that distribution. It is a measure of relative risk.

Symbolically,

$$\text{Coefficient of variance (C.V.)} = \frac{\sigma}{R}$$

Covariance (COV):

Covariance is the joint variance of two securities. It measures how two random variables, such as the return on security A and B move together. A positive value of covariance indicates that the securities returns tend to move in the same direction. A negative value of covariance indicates the return of securities move in the opposite direction and the zero value of covariance indicates no relationship between the securities return. It is the product of two different deviation divided by the number of observations.

Symbolically,

$$COV_{jm} = \frac{(R_j - \bar{R}_j) \times (R_m - \bar{R}_m)}{n}$$

Where,

COV_{jm}=covariance between security j and m.

Correlation Coefficient

Correlation coefficient is a measure of the relative association between two variables; it describes how much linear co-movement exists between two variables. Correlation between stock j and the market is computed as:

$$\rho_{jm} = \frac{COV_{jm}}{\sigma_j \times \sigma_m}$$

Symbolically,

Where,

COV_{jm}=covariance between security j and m.

σ_j =Standard Deviation of Security

σ_m =Standard Deviation of Market

Decision Parameter

- If Correlation j & m is positive, the return on security j and market tend to be large at the same time and small at the same time.
- If Correlation j & m is negative, relative large return of security j and associated with relative small return of market.

If Correlation j & m is zero, the return on security j uncorrelated to the return on market. Movement in the return of security j appear unrelated to movement in the return of market.

CHAPTER – FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter deals with the presentation and analysis of portfolio management of two commercial banks named NABIL and NIBL. Basically, this chapter is based on presentation and analysis of data and interpretation on major findings of the study. Risk-return characteristics of common stocks of the above mentioned commercial banks have been analyzed and interpreted on the basis of secondary data. Return and risk characteristics of the two assets and three assets portfolio have been formed from and have also been analyzed on behalf of the individual investors. Side by side, situation of the price of the common stocks of each bank has been calculated to indicate whether they are overpriced or under priced. In addition, the unsystematic and systematic risk of each commercial bank has also been calculated, and individual stock's sensitivity with the market has also been calculated. Tables, diagrams and charts have been used to reveal the information precisely as demanded by the analysis.

4.1 Risk and Return of Common Stocks

The return on common stock is the percentage increase/decrease in share price and any cash receipts such as dividends (cash and valuation of stock dividend) over a specific period of time. Holding period of return of sample banks are presented in table 4.1:

Table 4.1
Holding Period Return

Year	NABIL	NIBL
2007/08	44.45	68.87
2008/09	17.81	-44.57
2009/10	-40.50	-47.41
2010/11	-46.22	-5.29
2011/12	33.07	25

Source: Annex

The table 4.1 presents the holding period return of sample banks at different fiscal years, which shows that the return is higher in the beginning fiscal years of the sample banks than that at the ending fiscal years, i.e. the return is going to be in negative up to 2010/11 and starts to be a positive on 2011/12. This is due to the more changes in capital gain. Capital gain in the beginning years is positive, so return is also in positive, whereas the capital gain is negative up to fiscal years 2010/11, so return is also to be negative. Average rate of returns, standard deviations and coefficient of variation are presented table 4.2.

Table 4.2
Average Rates of Return, SD and CV of Sample Banks

Commercial Banks	\bar{R}_j	σ_j	CV (%)
NABIL	1.722%	37.79%	2194.54%
NIBL	-0.68%	43.88%	6452.94%

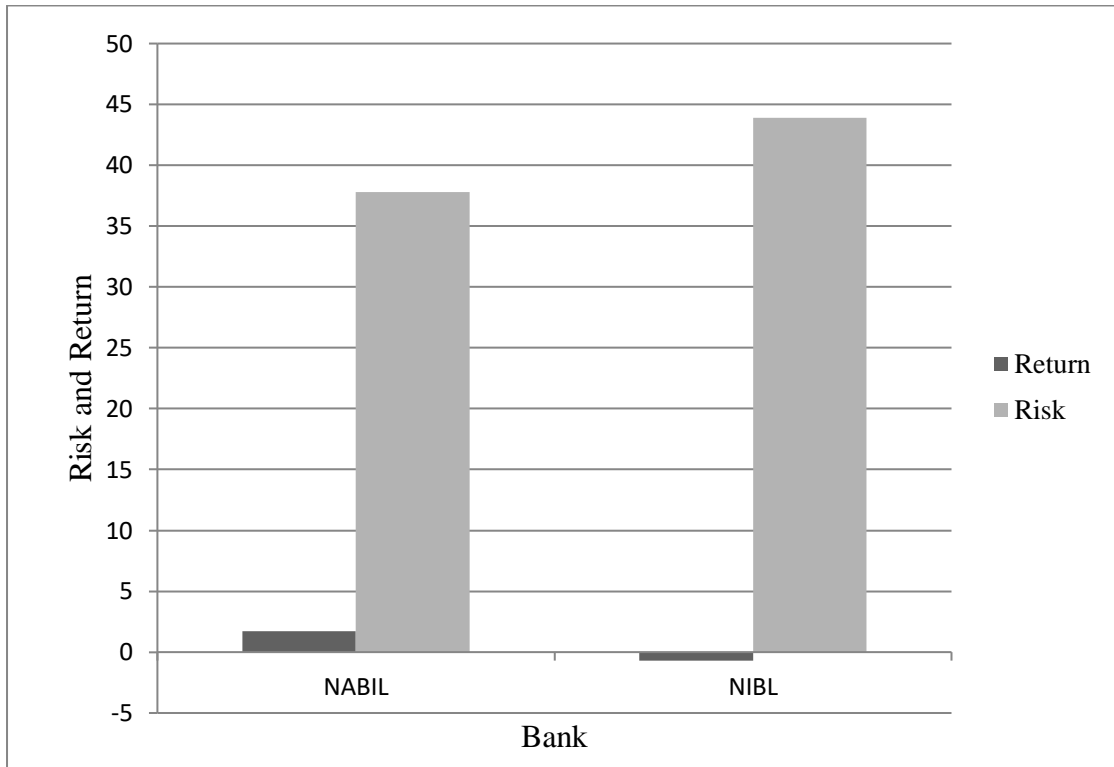
Sources: Annex

The Table 4.2 depicts that the average or mean return of the NABIL was 1.722% over the five years period starting from 2007/08 to 2011/12 with standard deviation of 37.79%. The coefficient of variation obtained by dividing the standard deviation of returns by the mean returns was obtained as 2194.54% for the bank. Similarly, the mean return for the NIBL was obtained as -0.68% with the standard deviation of 43.88%. The coefficient of variation for the bank was calculated to be 6452.94%.

On the basis of table depicted above, NABIL has the highest expected return with the lower standard deviation than that of the NIBL. Higher the coefficient of variation of NIBL shows higher fluctuation on return than that of NABIL. Higher the standard deviation than that of the return on all the sample banks shows that the banks should bear greater risk that of the return. This can also be shown on figure 4.1 as:

Figure 4.1

Average Rates of Return and Risk of Commercial Banks



4.2 Market Sensitivity of Stocks

Covariance measures how the returns on common stock of individual companies and market co-vary. It measures the absolute association between two variables. Likewise, the correlation coefficient measures the relative association between two variables. The correlation between two variables always lies within the limit of -1 to +1.

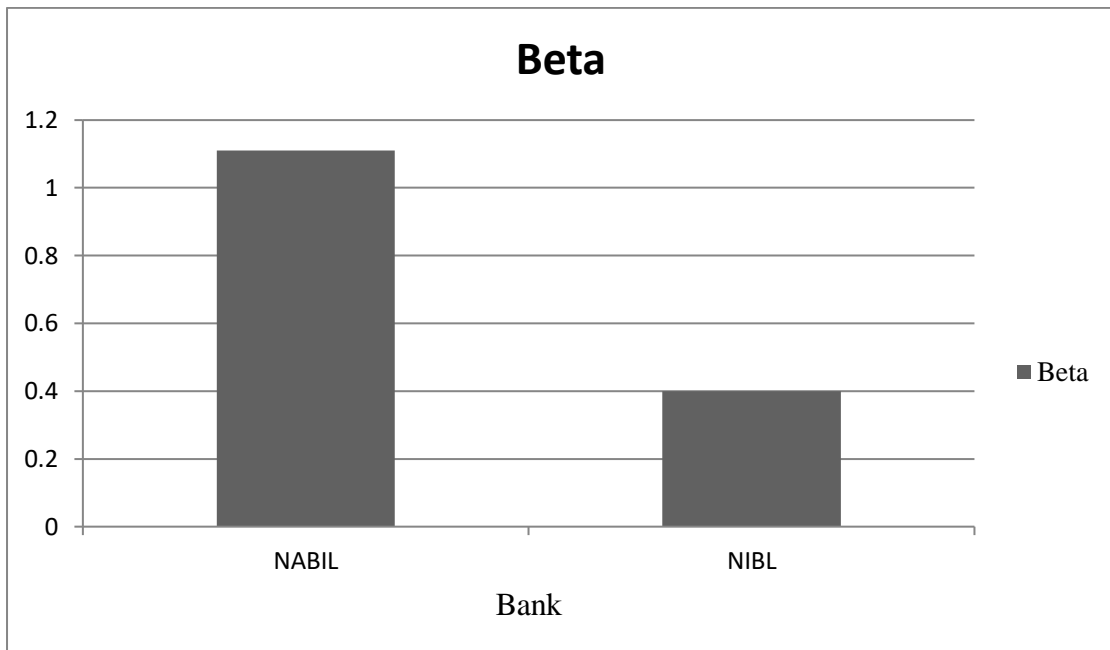
The return on the market has been calculated by using the closing NEPSE index. The variability of security's return with the return of the overall market, return is called systematic risk and cannot be avoided. It is un-avoided risk and is measured by beta coefficient. Beta depicts the sensitivity of the security's excess returns to that of the market portfolio. The calculated covariance, correlation and beta coefficients of the stocks of commercial banks are presented in Table 4.3.

Table 4.3
Covariance and Beta Coefficients

Banks	Cov (R_j, R_m)	β_j	Remarks
NABIL	860	1.11	Aggressive Stock
NIBL	311.21	0.40	Defensive Stock

Sources: Appendix

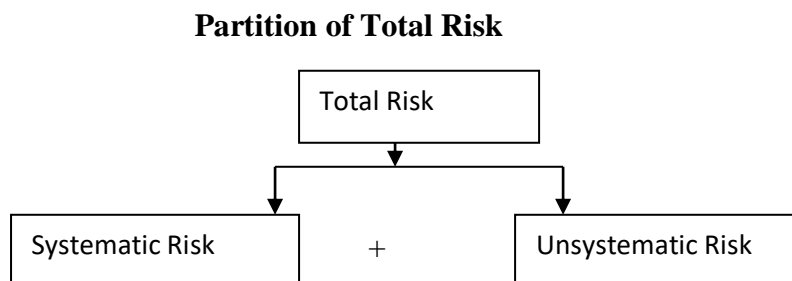
Figure 4.2
Beta Coefficients



The Table 4.3 and figure 4.2 depicted above reveals the covariance of returns on stocks of respective banks with the return on market, and the respective beta coefficients. On due course, the beta coefficient of NABIL was found to be 1.11, which indicates that the stock of NABIL is highly volatile as compared to the change in market circumstances and hence is an aggressive stock. Similarly, the stock of NIBL is considered as an defensive stock as given by the beta coefficient lower than one, i.e. 0.40. Hence from the table, we concluded the all the NABIL has higher risk due to the greatest beta, and NIBL has lowest risk due to its lower beta.

4.3 Systematic and Unsystematic Risk

Total risk is measured by the variance of returns and can be partitioned into systematic and unsystematic risk. Systematic risk is also known as unavoidable or undiversifiable risk. It is caused by market factors. Changes in the economic, political and sociological environment that affect securities markets are sources of systematic risk.



The systematic risk is computed as:

Systematic Risk

The percentage of systematic risk, also called proportion is measured by coefficient of determination. Proportion of systematic risk is calculated by:

$$\text{Proportion of Systematic Risk} = \frac{\text{Systematic risk}}{\text{Total risk}}$$

Similarly, unsystematic risk is known as avoidable or diversifiable risk or market non-specific risk or company specific risk. It is caused due to internal factors such as negligence of management, lockouts, strikes called by unions, etc. It is calculated as:

$$\text{Unsystematic Risk} = \text{Total Risk} - \text{Systematic Risk}$$

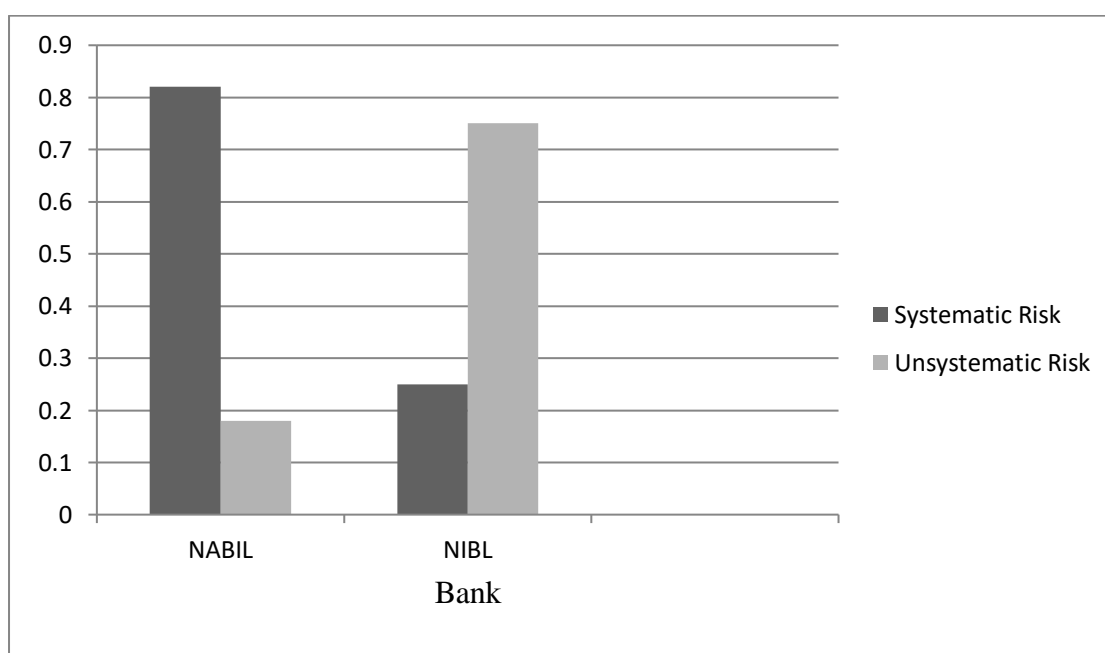
Total, systematic and unsystematic risk and their proportions of the stocks of the sample banks are presented in Table 4.4.

Table 4.4
Total, Systematic and Unsystematic Risk of Sample Banks
With their Proportion

Companies	Total Risk (%)	Systematic Risk (%)	Prop. of systematic Risk (%)	Unsystematic Risk (%)	Prop. of Unsystematic Risk (%)
NABIL	37.79	30.99	0.82	6.8	0.18
NIBL	43.88	10.97	0.25	32.91	0.75

Source: Appendix

Figure 4.3
Proportion of Systematic and Unsystematic Risk



The statistical results depicted in Table 4.4 and figure 4.3 segregates the total risks of the respective three banks into systematic and unsystematic proportion. The stocks of NABIL and NIBL have the systematic risks of 30.99% and 10.97% respectively. As compared to two banks, the shares of NABIL has the highest systematic risk where as the share of NIBL has the lowest systematic risk. On the basis of systematic risk, the stock of the NIBL is more attractive than others.

Out of total risk of individual stocks' return, the proportion of systematic risks of NABIL and NIBL are 82% and 25% respectively. It seems that 82% variability of returns of the common stocks of NABIL is systematic or is caused by market factors

and hence cannot be diversified by forming efficient portfolio. Likewise, 25% risk of NIBL is caused due to factors or forces in the market.. These cannot be reduced or diversified away.

Considering the unsystematic risks, the unsystematic risks of NABIL and NIBL are 6.8% and 32.91% respectively. Among them, the stock of NIBL has the greatest unsystematic risk and NABIL has the least unsystematic risk. Out of total risks of NABIL and NIBL, the respective proportions of unsystematic risk or company specific risk over total risk are 18% and 75%, which can be diversified away with an optimal portfolio construction.

The table 4.4 depicts that among the sample banks NABIL has higher the systematic risk than that of the unsystematic risk out of the total risk. Similarly, NIBL has higher the Unsystematic risk than that of the systematic risk out of the total risk. Hence, it concluded that the NABIL has highly suffered from the market forces or from the external factors and only few from the internal factors. NIBL has highly suffered from internal factors and only few from external factors.

4.4 Portfolio Analysis

4.4.1 CAPM Equation/SML

Using CAPM the investor can estimate the required rate of return for the stock. The intrinsic value of stock is inversely related to required rate of return. If other things remaining the same, the higher required rate of return will lower the intrinsic value of stock. CAPM theory helps for pricing implication of common stocks.

The relationship between an asset returns and its systematic risk can be expressed by the CAPM, which is also called security market line. SML is the line showing the relationship between the systematic risk index (beta) and required rate of return. The equation for the CAPM or SML is;

$$\text{Required Rate of Return } (R_j) = R_f + (R_m - R_f) \beta_j$$

Where,

R_f = Risk free rate of return

R_m = Expected return on market portfolio

B = Beta or Systematic risk index of assets j

Calculation of required rate of return and comparing with expected rate of return are shown on table.

Table 4.5
Pricing Situation of the Stocks of the Commercial Banks

Banks	\bar{R}_F	\bar{R}_m	Beta Coefficient	Required Rate of Return	Average Rate of Return	Price Situations
NABIL	3.50%	-6.85%	1.11	-7.99%	1.722%	Under priced
NIBL	3.50%	-6.85%	0.40	-0.64%	-0.68%	Over priced

Sources: Appendix

The table 4.5 shows that the average risk free rate of five years as given by the interest rate on short-term government treasury bills is 3.50% (*annex*). Similarly, the required rate of return on the market is just -6.85% which is calculated by the ending and beginning price of NEPSE index (*annex*). Thus the calculated required rates of returns on stocks as given by the table are -7.99% and -0.64% for the NABIL and NIBL respectively. The required rate of return on stock comprises of risk free rate of return (guaranteed rate of return) plus extra return (premium) for bearing risk. However, for NABIL, the average or mean rate of return obtained from its investment is found very high as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely under priced. And hence it should be bought and not sold short. However, for NIBL, the average or mean rate of return obtained from its investment is found quietly low as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely overpriced. And hence it should be sold short. Thus, an investor can invest in all or either of these stocks as the prices of the banks' stocks is growing in the future.

4.4.2 Portfolio Risk and Return

Portfolio analysis of risk and return are based on the investment on single assets. The analysis of risk and return made up was only as a point of view of individual investors that if he should invest in which banks securities. Which banks securities is more risky to comparing with each other. Construction of portfolio or making an investment in more than one asset which are negative correlated can reduce unsystematic risk without losing any return.

This attempt is to make which of the commercial bank among the simple bank has constructing a portfolio to reduce risk and increase its return. The analysis is based on two assets portfolio risk free assets (i.e. government securities) and risky asset (i.e. share and debenture). Risk free assets are denoted by (f) and risky assets are denoted by (m). Portfolio of risky assets is also known as market portfolio.

Table 4.6
Portfolio Risk and Return of Sample Banks

Banks	Risk Free Rate (R_f) (%)	(R_m) (%)	W_f	W_m	R_p (%)	σ_p (%)
NABIL	3.50	-6.85	0.52	0.48	-1.468	-3.288
NIBL	3.50	-6.85	0.49	0.51	-1.778	-3.49

Sources: Annex

The above table 4.6 shows that portfolio of return and risk of commercial banks. Risk free rate of return for all commercial banks is 3.50%. The proportion of risk free assets and risky assets on the table shows that NABIL and NIBL invest moderately on the risk free assets i.e. government securities and invest few only on the risky assets, i.e. NABIL invest 52% in risk free assets and 48% in risky assets. Whereas, NIBL invest 49% in risk free assets and 51% in risky assets.

Both the commercial banks have the negative portfolio return. NABIL has the highest portfolio return i.e. -1.468% with the lowest portfolio standard deviation than that of NIBL. NIBL has the lowest portfolio return i.e. -1.778% with the highest portfolio standard deviation than NABIL. So from above calculation it can be concluded that

higher the investment in risk free assets (Government Securities) lower will be the risk and lower the return, but if higher the investment in risky assets (Share and Debenture) higher will be the risk and higher will be the return. But sometimes higher investment in risky assets took the company in negative portfolio.

4.5 Portfolio Performance Evaluation

4.6 Sharp's Portfolio Performance Measure

Portfolio performance evaluation on the basis of return only will be insufficient. Therefore, it is necessary to consider both risk and return. One performance measure that has been developed to evaluate a portfolio's performance considering both risk and return simultaneously is the Sharpe's index of portfolio performance. This measure is also known as a reward-to-variability ratio and is used to rank the performance of investment funds. Symbolically it is;

$$S_p = \frac{\text{Risk Premium}}{\text{Total Risk}} = \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where,

SP = Sharp index of portfolio performance of portfolio

\bar{r}_p = Average return on portfolio

r_f = Risk free rate of return

σ_p = Standard deviation of portfolio

$(\bar{r}_p - r_f)$ = Risk Premium for portfolio

Table 4.7

Portfolio Performance Measure using sharp's Measure

Banks	Risk Free Rate (R_f)	Average Return on Portfolio (R_p)	Standard Deviation of Portfolio (σ_p)	S_p	Ranking
NABIL	3.50%	-1.468	-3.288	1.511	2
NIBL	3.50%	-1.778	-3.49	1.512	1

The above table 4.7 shows that Sharp measures of stock of two banks have nearly equal Sp. NABIL has 1.511 Sp and NIBL has 1.512 Sp. On the basis of Sharpe index, the portfolio of NIBL is slightly the best performer than NABIL.

4.7 Major Findings of the Study

- Holding period return of sample banks at different fiscal years are higher in the beginning fiscal years of the sample banks than that at the ending fiscal years, i.e. the return is going to be in negative up to 2010/11 and starts to be a positive on 2011/12. This is due to the more changes in capital gain. Capital gain in the beginning years is positive, so return is also in positive, whereas the capital gain is negative up to fiscal years 2010/11, so return is also to be negative
- The mean or average rate of return of NABIL was 1.722% over the five years period starting from 2007/08 to 2011/12 with standard deviation of 37.79%. Similarly, the mean return for the NIBL was obtained as -0.68% with the standard deviation of 43.88%. NABIL has the highest expected return with the lower standard deviation than that of the NIBL. Higher the coefficient of variation of NIBL shows higher fluctuation on return than that of NABIL. Higher the standard deviation than that of the return on all the sample banks shows that the banks should bear greater risk than that of the return.
- The average rate of return on market given by NEPSE index was just -6.85%. Similarly, the standard deviation of overall market returns was 27.84%. The calculated beta coefficients of the banks NABIL and NIBL were 1.11 and 0.40 respectively. The stocks of NABIL is aggressive as compared to the market having beta more than one. Similarly, the stock of NIBL is considered as a defensive stock as given by the beta coefficient lower than one, i.e. 0.40. Hence from the table, we concluded that all the NABIL has higher risk due to the greatest beta, and NIBL has lowest risk due to its lower beta.
- The stocks of NABIL and NIBL have the systematic risks of 30.99% and 10.97% respectively. As compared to two banks, the shares of NABIL has the highest systematic risk whereas the share of NIBL has the lowest systematic risk. On the basis of systematic risk, the stock of the NIBL is more attractive than others. NABIL has higher the systematic risk than that of the

unsystematic risk out of the total risk. Similarly, NIBL has higher the Unsystematic risk than that of the systematic risk out of the total risk. Hence, it concluded that the NABIL has highly suffered from the market forces or from the external factors and only few from the internal factors. NIBL has highly suffered from internal factors and only few from external factors.

- However, for NABIL, the average or mean rate of return obtained from its investment is found very high as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely under priced. And hence it should be bought and not sold short. However, for NIBL, the average or mean rate of return obtained from its investment is found quietly low as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely overpriced. And hence it should be sold short.
- Both the commercial banks have the negative portfolio return. NABIL has the highest portfolio return i.e. -1.468% with the lowest portfolio standard deviation than that of NIBL. NIBL has the lowest portfolio return i.e. -1.778% with the highest portfolio standard deviation than NABIL. So from above calculation it can be concluded that higher the investment in risk free assets (Government Securities) lower will be the risk and lower the return, but if higher the investment in risky assets (Share and Debenture) higher will be the risk and higher will be the return.
- The Sharpe index portfolio performance measure of NABIL and NIBL seemed 1.511 and 1.512 respectively. Sharp measures of stock of two banks have nearly equal Sp. On the basis of Sharpe index, the portfolio of NIBL is slightly the best performer than NABIL.
- Risk free rate of return for all commercial banks is 3.50%. The proportion of risk free assets and risky assets on the table shows that NABIL and NIBL invest moderately on the risk free assets i.e. government securities and invest few only on the risky assets, i.e. NABIL invest 52% in risk free assets and 48% in risky assets. Whereas, NIBL invest 49% in risk free assets and 51% in risky assets.

CHAPTER - FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the previous chapters and conclusions drawn from the analysis the data. Based on the summary and conclusions, recommendations are suggested with a hope of improving the existing situations of the portfolio management of the sample commercial banks of Nepal undertaken for the study so that the banks can improve their investment and return on portfolio.

5.1 Summary

Both two, 31 commercial banks in operation and some more are in the offing. Although, the majority of the populations of Nepal are living in the rural areas, the majority of commercial banks are established in urban areas. This condition has really deprived most of the Nepalese people from the modern banking facilities. Similarly, due to the different situation, the banks are not able to invest their funds in remote areas and the major investments are city based. In the same way, due to the growing competition and limited investment opportunities, the return from the commercial banks is less than the satisfactory. Thus, the problem seems to be with both the risk and return.

In the present context, the performance of all the economic sectors is not that encouraging. However, the case of the financial institutions is little bit different. The reason may be the performance of the bank and its credibility in the mind of the people. But, are they really efficient in their performance? Which of the banks understudy are better off in terms of their performance? These are the questions whose answers are considered in the study.

Since, every investment possesses return as well as risk; better return with less risk is the indication of better performance. For the purpose of getting high return with less risk the portfolio investment i.e. investing in more assets is the only way out. The better portfolio performance leads to the overall better performance of the financial

institution. Thus, it seems that the time to time evaluation of what the organization is performing regarding its portfolio is the crucial aspect for the management as well as the other stakeholders.

In the course of the study, the review of various books of investments; relevant articles and journals; annual reports, magazines and directives published by various non-governmental and governmental organizations along with the selected three commercial banks and the unpublished Master's Degree thesis submitted to Tribhuvan University are done. The analysis and findings on those reviews have really contributed for the better understanding of the thesis. Annual reports of the selected commercial banks are the major source of the secondary data for the thesis. Various models and techniques along with the formula are used for the processing and analysis of the data collected.

Holding period return of sample banks at different fiscal years are higher in the beginning fiscal years of the sample banks than that at the ending fiscal years, i.e the return is going to be in negative up to 2010/11 and starts to be a positive on 2011/12. This is due to the more changes in capital gain. Capital gain in the beginning years is positive, so return is also in positive, whereas the capital gain is negative up to fiscal year s2010/11, so return is also to be negative. NABIL has the highest expected return with the lower standard deviation than that of the NIBL. Higher the coefficient of variation of NIBL shows higher fluctuation on return than that of NABIL. Higher the standard deviation than that of the return on all the sample banks shows that the banks should bear greater risk that of the return.

The stocks of NABIL is aggressive as compared to the market having beta more than one. Similarly, the stock of NIBL is considered as an defensive stock as given by the beta coefficient lower than one, i.e. 0.40. Hence from the table, we concluded the all the NABIL has higher risk due to the greatest beta, and NIBL has lowest risk due to its lower beta. As compared to two banks, the shares of NABIL has the highest systematic risk where as the share of NIBL has the lowest systematic risk. On the basis of systematic risk, the stock of the NIBL is more attractive than others. NABIL has higher the systematic risk than that of the unsystematic risk out of the total risk. Similarly, NIBL has higher the Unsystematic risk than that of the systematic risk out

of the total risk. Hence, it concluded that the NABIL has highly suffered from the market forces or from the external factors and only few from the internal factors. NIBL has highly suffered from internal factors and only few from external factors.

However, for NABIL, the average or mean rate of return obtained from its investment is found very high as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely under priced. And hence it should be bought and not sold short. However, for NIBL, the average or mean rate of return obtained from its investment is found quietly low as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely overpriced. And hence it should be sold short.

Both the commercial banks have the negative portfolio return. NABIL has the highest portfolio return i.e. -1.468% with the lowest portfolio standard deviation than that of NIBL. NIBL has the lowest portfolio return i.e. -1.778% with the highest portfolio standard deviation than NABIL. Risk free rate of return for all commercial banks is 3.50%. The proportion of risk free assets and risky assets on the table shows that NABIL and NIBL invest moderately on the risk free assets i.e. government securities and invest few only on the risky assets, i.e. NABIL invest 52% in risk free assets and 48% in risky assets. Whereas, NIBL invest 49% in risk free assets and 51% in risky assets.

5.2 Conclusions

In the entire process of this study, various secondary as well as primary data concerning the portfolio performance of the two commercial banks are gathered and analyzed. Based on the findings of the study, the following major conclusions are drawn for the study.

- Both the commercial banks are investing moderately amount of funds in the government Treasury bills i.e. risk free security and on the risky assets. Among these two commercial banks NABIL has the investment 52% in the government T-bills and 48% in the risky assets, whereas NIBL has invested 49% in the risk free assets.

- The portfolio performance measure index of NABIL and NIBL seemed nearly equal. On the basis of Sharpe index, the portfolio of NABIL is the best performer.
- Holding period return of sample banks at different fiscal years are higher in the beginning fiscal years of the sample banks than that at the ending fiscal years, i.e the return is going to be in negative up to 2010/11 and again starts to increase. This is due to the more changes in capital gain.
- Average rate of returns for NABIL is found very high as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely under priced. And hence it should be bought and not sold short. However, for NIBL, the average or mean rate of return obtained from its investment is found quietly low as compared to the rate of return required using Capital assets pricing model (CAPM) approach. This reveals that the stock of NABIL bank is severely overpriced. And hence it should be sold short.
- The stocks of NABIL is aggressive as compared to the market having beta more than one. Similarly, the stock of NIBL is considered as an defensive stock as given by the beta coefficient lower than one, i.e. 0.40. Hence from the table, we concluded the all the NABIL has higher risk due to the greatest beta, and NIBL has lowest risk due to its lower beta.
- Higher the investment in risk free assets (Government Securities) lower will be the risk and lower the return, but if higher the investment in risky assets (Share and Debenture) higher will be the risk and higher will be the return.
- NABIL has the highest proportion of systematic risk in its total risk component. NIBL has higher proportion of unsystematic risk than that of NABIL.

5.3 Recommendations

From conclusions drawn above the concerned commercial banks are offered the following suggestions for improving the performance of their portfolio management.

➤ **Efficient and effective investment strategies:**

The commercial banks invest their funds according to the instructions and guidelines of NRB. They do not have their own clear vision towards investment portfolio. Thus,

commercial banks should develop efficient and effective investment strategies with the help of portfolio experts.

➤ **Evaluation of risk free securities:**

The ratio of the investment in risk free securities should be evaluated in a better way according to the need of the commercial banks, so that the optimum return from the portfolio can be obtained.

➤ **Remove clause of compulsory investment in financial institutions and government organization:**

Since, the return from the company shares is quite low even though the stock market return is much higher. Thus, the commercial banks should invest those funds in the shares of blue-chip firms which give more return. In this regard NRB should remove the clause about the compulsory investment in the certain financial institutions and government organizations by the commercial banks.

➤ **Time to time evaluation of portfolio with the use of portfolio experts:**

However, the trend of evaluating and revising the portfolio has been lacking in Nepalese commercial banks. This trend of investing without proper evaluation should be stopped. The performance of commercial banks can be more satisfying and optimized in the future if the time to time evaluation of the portfolio is done with the use of portfolio experts along with the long term plans on the portfolio investment.

➤ **Regular revision or the portfolio condition of bank:**

The portfolio condition of a bank should be regularly revised from time to time. Basically portfolio management refers to the allocation of funds into the different small components of its assets having different degrees of risk, different rates of return in such a way that the goal of maximum yield minimum risk can be properly achieved. The bank should always try to make continuous efforts to explore competitive and highly yielding investment opportunities to optimize its investment portfolio.

➤ **Providing knowledge of portfolio:**

Portfolio analysis only reduces diversifiable or unsystematic risk. The investors must change their desire level of return for bearing certain level of risk. The investors change their attitude in investing in only one asset. For the change, the investors must have knowledge of portfolio which is the most crucial thing. All the investors have not sufficient knowledge regarding portfolio, therefore the financial institutions and the banks should provide the knowledge of the portfolios to the investors.

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ANNEX-I

Calculation of Risk and Return of Sample Banks

NABIL Bank Ltd.

Year	Price (P)	Cash Dividend (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	Return (R _j) (%)	R _j - \bar{R}_j	(R _j - \bar{R}_j) ²
2006/07	5050						
2007/08	5275	60	40	2019.6	44.45	42.73	1825.68
2008/09	4899	35	50	1227	17.81	16.09	258.82
2009/10	2384	30	40	530.8	-40.50	-42.122	1774.26
2010/11	1252	30	-	30	-46.22	-47.94	2298.44
2011/12	1355	40	20	311	33.07	31.35	982.70
Total					8.61		7140

$$\text{Average rate of return } (\bar{R}_j) = \frac{\sum R_j}{n} = \frac{8.61}{5} = 1.722$$

$$\text{Standard Deviation } (\sigma_j) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} = \sqrt{\frac{7140}{5}} = 37.79$$

Nepal Investment Bank Ltd.

Year	Price (P)	Cash Dividend (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	Return (R _j)	R _j - \bar{R}_j	(R _j - \bar{R}_j) ²
2006/07	1729						
2007/08	2450	7.5	33.3	469.70	68.87	69.55	4837.20
2008/09	1388	20	-	20	-44.57	43.89	1926.33
2009/10	705	25	-	25	-47.41	46.73	2183.69
2010/11	515	25	25	152.75	-5.29	4.61	21.25
2011/12	511	5	25	132.75	25	25.68	659.46
					-3.4		9627.93

$$\text{Average rate of return } (\bar{R}) = \frac{\sum R_j}{N} = \frac{-3.4}{5} = -0.68$$

$$\text{Standard Deviation } (\sigma_j) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} = \sqrt{\frac{9627.93}{5}} = 43.88$$

Total dividend is calculated as:

Total dividend= Cash DPS +Stock dividend % × Next Year's MPS

ANNEX - II

Risk and Return of Market (NEPSE Index)

Year	NEPSE Index (NI)	R_m	$R_m - \bar{R}_m$	$(R_m - \bar{R}_m)^2$
2006/07	683.95			
2007/08	963.36	40.85%	47.7%	2275.29
2008/09	749.1	-22.24	-15.39	236.85
2009/10	477.73	-36.23	-29.38	863.18
2010/11	362.85	-24.05	-17.2	295.84
2011/12	389.74	7.41	14.26	203.35
Total		-34.26	Total	3874.51
Mean		-6.85%	VAR	774.90%
			SD	27.84%
			CV	406.42%

$$R_m = \frac{NI_{t+1} - NI_t}{NI_t} \quad \text{where, } NI_{t+1} = \text{NEPSE Index at year } t+1, \text{ and } NI_t = \text{NEPSE}$$

Index at year t

$$\bar{R}_m = \frac{\sum R_m}{N} = -34.26/5 = -6.85\%$$

$$\text{Var}(R_m) = \frac{(R_m - \bar{R}_m)^2}{n} = 3874.51/5 = 774.90 \%$$

$$\sigma_m = \sqrt{\text{Var}(R_m)} = \sqrt{774.90} = 27.84\%$$

ANNEX - III

Covariance between the return of stocks and return of Market

NABIL and Market

Year	R_j	$R_j - \bar{R}_j$	R_m	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j) \times (R_m - \bar{R}_m)$
2007/08	44.45	42.73	40.85%	47.7%	2038.22
2008/09	17.81	16.09	-22.24	-15.39	-247.63
2009/10	-40.50	-42.122	-36.23	-29.38	1237.54
2010/11	-46.22	-47.94	-24.05	-17.2	824.57
2011/12	33.07	31.35	7.41	14.26	447.05
Total	8.61		-34.26	Total	4299.75
$\bar{R}_j = 1.722\%$		$\bar{R}_m = -6.85\%$		COV (R_j, R_m) = 860	

Covariance is calculated as:

$$\text{COV}(R_j, R_m) = \frac{(R_j - \bar{R}_j) \times (R_m - \bar{R}_m)}{n}$$

NIBL and Market

Year	R_j	$R_j - \bar{R}_j$	R_m	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j) \times (R_m - \bar{R}_m)$
2007/08	68.87	69.55	40.85%	47.7%	3317.54
2008/09	-44.57	43.89	-22.24	-15.39	-675.47
2009/10	-47.41	46.73	-36.23	-29.38	-1372.93
2010/11	-5.29	4.61	-24.05	-17.2	-79.29
2011/12	25	25.68	7.41	14.26	366.20
Total	-3.4		-34.26	Total	1556.05
$\bar{R}_j = -0.68\%$		$\bar{R}_m = -6.85\%$		COV (R_j, R_m) = 311.21	

ANNEX - IV

Calculation of Correlation and Beta Coefficients of different Companies

With Market Return

Banks	COV (R_j, R_m)	σ_j	σ_m	Corr. (R_j, R_m)	$(\sigma_m)^2$	Beta
NABIL	860	37.79%	27.84%	0.82	774.90	1.11
NIBL	311.21	43.88%	27.84%	0.25	774.90	0.40

ANNEX - V

Total, Systematic and Unsystematic Risk of Companies

Companies	Total Risk (%)	Systematic Risk (%)	Prop. of systematic Risk (%)	Unsystematic Risk (%)	Prop. of Unsystematic Risk (%)
NABIL	37.79	30.99	0.82	6.8	0.18
NIBL	43.88	10.97	0.25	32.91	0.75

ANNEX - VI

Calculation of Risk-free Rate

Fiscal Year	91 days T-bills Rate (%)	1 Year T-bills Rate (%)
2007/08	3.59	3.64
2008/09	2.84	2.87
2009/10	2.42	2.44
2010/11	4.22	4.29
2011/12	4.14	4.20
		Total = 17.44%
		Average = 3.50%

(Source: www.nrb.org.np)

ANNEX- VII
CALCULATION OF PROPORTION OF INVESTMENT OF
SAMPLE BANKS

NABIL Bank Limited

Fiscal Year	Investment on Risk free Assets (in millions)	Investment on Risky Assets (in millions)	Total Investment (in millions)	Proportion of Risk free Assets	Proportion of Risky Assets
2007/08	4647	5320	9967	0.466	0.534
2008/09	3705	7169	10874	0.34	0.66
2009/10	7940	5774	13714	0.55	0.45
2010/11	8745	4341	13086	0.67	0.33
2011/12	8000	6056	14056	0.57	0.43
Average Proportion				0.52	0.48

Nepal Investment Bank Limited

Fiscal Year	Investment on Risk free Assets (in millions)	Investment on Risky Assets (in millions)	Total Investment (in millions)	Proportion of Risk free Assets	Proportion of Risky Assets
2007/08	3155	3724	6879	0.46	0.54
2008/09	2531	4872	7403	0.34	0.66
2009/10	4202	4437	8639	0.49	0.51
2010/11	4295	3130	7425	0.58	0.42
2011/12	6169	4272	10441	0.59	0.41
Average Proportion				0.49	0.51

ANNEX- VIII

CALCULATION OF REQUIRED RATE OF RETURN

Companies	\bar{R}_F	\bar{R}_m	Beta Coefficient	Required Rate of Return $R_j = R_f + \beta (R_m - R_f)$
NABIL	3.50%	-6.85%	1.11	-7.99
NIBL	3.50%	-6.85%	0.40	-0.64

ANNEX - IX

Price Situation of Stocks

Stocks	Required Rate of Return	Average Rate of Return	Price Situations
NABIL	-7.99%	1.722%	Under priced
NIBL	-0.64%	-0.68%	Over priced

ANNEX - II

Brief Introduction of Sample Banks

There are 32 commercial banks in Nepal but it is not possible to cover all the banks in the study. So only two commercial banks are chosen which will represent all the commercial banks of Nepal. So the study will analyze financial statement of the chosen banks. The selected banks for the study are as follows:

Nabil Bank

Nabil Bank Limited, the first foreign joint venture bank of Nepal, started operations in July 1984. Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, Nabil provides a full range of commercial banking services through its 51 points of representation across the kingdom and over 170 reputed correspondent banks across the globe. Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. Operations of the

bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System, Bangalore India, Internet banking system and Tele banking system. Recently it has 47 branches around the country.

Nepal Investment Bank

Nepal Investment Bank Ltd. (NIBL), previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital of NIBL) was Credit Agricole Indosuez, a subsidiary of one the largest banking group in the world. With the decision of Credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, had acquired on April 2002 the 50% shareholding of Credit Agricole Indosuez in Nepal Indosuez Bank Ltd. The name of the bank has been changed to Nepal Investment Bank Ltd. upon approval of bank's Annual General Meeting, Nepal Rastra Bank and Company Registrar's office with the following shareholding structure. A group of companies holding 50% of the capital Rashtriya Banijya Bank holding 15% of the Capital. Rashtriya Beema Sansthan holding the same percentage. The remaining 20% being held by the General Public (which means that NIBL is a Company listed on the Nepal Stock Exchange). We believe that NIBL, which is managed by a team of experienced bankers and professionals having proven track record, can offer you what you're looking for. We are sure that your choice of a bank will be guided among other things by its reliability and professionalism.