

CHAPTER- I

INTRODUCTION

1.1 GENERAL BACKGROUND

Integrated and speedy development of nation highly depends upon numerous activities. Among the numerous of activities economic activities are considered as the backbone of economic development. Therefore the economy of the nation is strictly based upon the proper and efficient utilization of available resources with well-planned management and frequent revision which help appreciated the wealth position of individual and the nation. It is the financial market, which helps generate capital from the savings of general public and utilize those funds properly.

Financial Market is main key which helps economic development by mobilizing long term as well as short term capital needed for the productive sector. It is the place where financial assets are traded. The Financial Market can be classified in various ways. But the most common classification is to classify it as (1) Money Market and Capital Market, and (2) Primary Market and Secondary Market.

In Money Market, financial assets, with a term to maturity of typically one or less than one year is traded. The main function of Money Market is to provide short term loans to the business, to the government and loans to households. The government and business organizations requiring short-term funds sell securities (like treasury bills, commercial papers, certificates of deposits etc) and investors who have surplus money buy securities in this market(Shrestha, Poudel & Bhandari, 2003: 3).

In Capital Market, financial assets with a term to maturity of typically more than one year are traded. The long-term financial instruments such as stocks, bonds, government securities etc are traded in the Capital Market. (Shrestha, Poudel & Bhandari, 2003: 3).

The security market may be classified into Primary and Secondary Market on the basis of economic function. When firms need capital they may choose to sell new securities. They sell securities in Primary Market. Investments bankers which are called the primary market typically market this new issue of stocks, bonds, or the securities to the public. The issue of securities in primary market leads to direct transfer of money from the savers to the issuer of the securities. The growth of capital market has open avenue for trading in the secondary market followed by primary market and it is drawing dimension of investment

banking services undertaken by NIDC Capital Market, Citizen Investment Trust, Nepal Share Market etc (Shrestha, Poudel & Bhandari, 2003: 4).

The existing securities are bought and sold in the secondary market. In other words, already issued securities are traded in organized securities exchange (like Nepal Stock Exchange). Its main function is to provide liquidity to the purchasers of securities (Shrestha, Poudel & Bhandari, 2003: 4).

An investment is a commitment of money that is expected to generate additional money. Every investment entails some degree of risk, it requires a present certain sacrifice for a future uncertain benefit" (Francis, 1992:1).

Investment is the sacrifice of current dollars for future dollars and time and risk involved in investment. Sacrifice takes place in the present and is certain. The reward comes later, is at all and the magnitude is generally uncertain. In some case the element of time predominates. In other cases risk is the dominate attribute." (Sharpe, Alexander and Bailey, 2002:1).

Investment is the main element of the stock market. It is present sacrifice for a future uncertain return. For the future return there is always some degree of risk associated with it. Investment is not merely a gambling rather it should be a systematic and scientific way of employing current rupees for expected future return. The investment can be a real investment i.e. making investment in tangible assets such as land, machinery, building, etc and financial assets such as common stocks, preferred stocks, bonds/debentures, convertibles, warrants, options etc. Here, the focus on the term investment is investing fund in securities with a target of enhancing the wealth position of the investors through the return from the investment in different security alternatives. For this investor should aware of various measures, perception and choices. All the financial trading of securities is performed in a security market. In the context of Nepal, these activities are conducted in Nepal Stock Exchange Limited (NEPSE) only the organized security market in Nepal. Security market brings together buyers and sellers of securities.

Before the establishment and operation of the stock exchange in Nepal, the only option left for the investors was bank deposits. But the establishment of security market in Nepal has provided an avenue for the investors to invest the available funds in the securities. The Nepalese investors are not well acquainted with the financial status of the public companies on whose securities they want to invest their funds. They are just found to be running after market trend. Therefore, the decisions made by the investors sometimes, lead them to suffer loss instead of ample return due to lack of necessary data and information.

Investors always take concern on minimization of risk and increment of return as much as possible. Investors prefer to select high performing stock as it gives high return but consequently high yielding stock's risk level is generally high. This phenomenon of the capital market makes investor also concerned about the risk involved in asset selection. Hence investors perform selecting those assets which have high return among the certain risk level of an asset. Alternatively diversification of funds in different securities also provides the investor secure investment with high return. It reduces the risk of capital loss and improves the expected return of the investors. "Not putting all eggs in one basket" is the essence of diversification which means spreading the risks. Hence, diversification of the investment in more than one stock is far more better than investing on single stock. The diversification in investment represents the portfolio management. Portfolio investment is investment in various securities in order to increase return by reducing risk. It is the selection of optimal alternatives available and attainable that provides highest possible return from lowest possible risk.

During the 1950s and 1960s, Harry Markowitz, James Tobin, Jack Treynor, Bill Sharpe, and others showed that rational investors should ignore the investment characteristics of individual assets and focus instead on diversified portfolios. They proved that investing in portfolios is more desirable than individual assets because portfolios can benefit from the risk-reducing power of diversification that individual assets cannot obtain. Now, investors are more attracted toward portfolio investment. They are formulating portfolio where they diversify investment toward many sectors and on different types of financial instrument. This process of investment involves lots of analytical works. Firstly investors have to work on finding the expected return and risk statistics for all individual assets, which are used as basic input data for portfolio analysis. Then, analysis is carried out to develop a portfolio that generates the maximum return at level of risk the investors seem appropriate. All these processes involve complicated mathematical and analytical works which is hard for normal investors to accomplish. Also diversified investment by individual investor could not be effective due to his limited amounting of investing money. Therefore this portfolio investment process involves highly qualified manpower or specialist to perform this activity. There are institutions which provide services for the small investors who like to invest in the portfolio. These institutions create the portfolio for the investment and collect money from the investors to invest on the portfolio. The largest and most popular types of publicly available portfolio management services are provided by the institutional investors such as the trust department of large, big city commercial bank, investment advisory services, mutual fund management companies, security brokerage firms, the investment department of large life insurance companies and investment companies (primarily the

open end investment companies called mutual fund) (Francis, 2002:644).

The publicly available portfolio management services receive the funds from the major sources of investable wealth such as, pension funds, Wealthy individual, College endowment, Charitable Foundation and so on. These investors own and ultimately control the funds, but they frequently entrust their investment decision to some portfolio management service. In the context of Nepal, till now there are only two collective schemes which collect capital from the small and medium investor to make investment making efficient portfolio. There are Citizen Unit Scheme and NCM mutual fund. Citizen Unit Scheme, an open ended scheme with a face value of Rs.100 per unit, has 2050 unit holder till end of 2008/09. By the end of fiscal year it has invested Rs 690 million in different sectors including share/debenture, government bond, bank deposit loans, and advances and so on. NCM mutual fund 2059 is a new scheme operated and managed by NIDC capital market ltd. The fund has 10 million units with Rs 10 face value which is close end fund. In the end of fiscal year 2008/09 total investment of the fund reached to Rs.151.53 million and the net asset value reached to Rs. 536.85 million. This fund has major portion of investment concentrated on shares i. e. Rs. 90.80 million out of Rs. 151.53 million. Beside there other portfolio management institution has not been operated in Nepal. In end of fiscal year 2008/09 there is 23 broker organizations giving services in stock exchange (SEBON, annual report: 2008/09). But specialized portfolio management consultancy service is lacking in Nepalese Capital Market. It has been widely felt that Nepalese capital market should promote different portfolios for better investment atmosphere.

1.2 CAPITAL MARKET IN NEPAL

The history of Capital Market in Nepal is no so long. We have to turn back to 1936 A.D. Biratnagar Jute Mill- the first corporate entity in Nepal. It issued 8000 ordinary shares of Rs. 100 each. They became very popular because of high dividend paid (110 percent).

In spite of this the growth and issue of securities was not well document till late seventies. Data on issue of securities are available since late seventies when Securities Exchange Centre (SEC) assumed the role of issue manager.

Institutional setup of capital market began along with the securities Exchange Centre in 1976 A.D. It was established under Company Act with joint capital contribution of Nepal Rastra Bank and Nepal Industrial Development Corporation. The main objective of the establishment f the centre was to

mobilize saving and encourage the people to participate in the ownership of industries and business enterprises. Its activities included; purchase, underwrite and sale directly or through the licensed brokers or sub-brokers of the centre, the shares, stocks and debentures of public limited companies and also development bond as well as Treasury bills issued by the government.

Securities Exchange Centre (SEC) was converted into Nepal Stock Exchange Ltd. (NEPSE) in 1993 under the provision of Securities Exchange Act, 1983. The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transactions in its trading floor through members, market intermediaries such as broker, market-makers etc. NEPSE opened its trading floor on 13th January 1994. Nepal Government, Nepal Rastra Bank, Nepal Industrial Development Corporation and members are the shareholders of the NEPSE.

NEPSE as secondary market had adopted an auction system of trading securities are conducted on the open auction principle on the trading floor. This system is also known as open-out cry system.

Securities Board of Nepal (SEBON) was established by the Government on June 7, 1993 with objective to provide essential policy, direction for the systematic and regular exchange market by protecting & promoting the interest of investors. It is the regular body of securities market in Nepal.

1.3 FOCUS OF THE STUDY

Since the individual investor is always in favour of making a pretty return against his investment, but it cannot always be possible. Some of the investors invest their life time earning without having thorough analysis of various indicators but only by running after the melodious slogans which may lead them to suffer loss rather than earning profit. Therefore this study focuses on finding out profitable investment alternatives with the help of empirical study to the stocks those listed in Nepal Stock Exchange. As mentioned earlier, every investment entails some degree of risk; the growth of an individual's resource is possible only when he invest in some profitable sector expecting the future return. Therefore the risk and return are the most crucial criteria for investment decision. Undoubtedly, every rational investor attempts maximize return and minimize risk. For this purpose, the investor must understand the concept and

measurement of risk and return of their investment. Therefore this study will basically focus on the concept and measurement of risk and return of those listed in NEPSE.

1.4 STATEMENT OF THE PROBLEM

It is observed that most of the Nepalese investors invest their funds in tangible assets like land, building, machineries jewellerys, etc. or deposit their funds in banks. The investor might not be familiar with the knowledge that investment in financial assets can be the best investment alternatives to appreciate their wealth. Due to lack of knowledge about risk and return, the investors, who invest their funds, may have to suffer more risk and less return. Therefore the problem of this study is to find out the efficient portfolio in Nepalese Capital Market. Nepalese got opportunity to invest in the enterprise sector and participate in secondary market with the establishment of Nepal Stock Exchange market. Nepalese stock market has experienced a noticeable growth during fiscal year 2006/07 & 2007/08 but it decreased in 2008/09. The NEPSE index was 963.36 during FY 2007/08 and it was 683.95 at the end of FY 2006/007 but it was only 749.10 at the end of FY 2008/09.

The restoration of peace, an improvement in listed companies' financial performance and, most importantly, the central bank's direction, dated 26 March 2007, to double paid-up capital for banks and financial institutions contributed to a remarkable increment in share prices and subsequently the stock market indices. However, the market has been confronted many difficulties. Even, investors have difficulties in choosing the best securities and create a well diversified portfolio. There is high degree of uncertainty on the future investment environment of Nepalese Capital Market. Besides that Nepalese Stock Market is characterised by low trading volume, absence of professional broker, early stage of growth, limited movement of share price and limited information available to investors. Information about the performance of listed companies and risk and return on investment of individual stocks is very essential for the investors. But Nepalese investors are deprived from the sufficient information. There is also lacking in general investors on analyzing and asserting information from the available stock markets data and company's annual report. In Nepal availability investment facilities is very limited. Only two mutual funds are being operated in capital

market: one NIDC mutual fund and another Citizen Investment fund. There is lacking of portfolio management service in Nepal which provide suggestion and information in formulating effective portfolio. Maximizing return by reducing the level of risk can only be form effective portfolio investment. Hence there is need for technique for formulating efficient and optimal portfolio on Nepalese Capital Market. The following issues should be highlighted for the present Capital Market of Nepal.

- How different sector of Capital Market are performing and which sectors are best for the investment point of view?
- Which will be the efficient portfolio in which the possible risk can be reduced and the expected return can be increased?

1.5 OBJECTIVES OF THE STUDY

The general objective of this study is to analyze the investment environment of common stock in securities market in Nepal.

The specific objectives are:

- To analyze and evaluate different sector of investment on Nepalese Capital Market.
- To analyze the risk and return of the portfolio consisting of the stocks of different listed companies.
- To find out best investment portfolio consisting of the stock of listed companies.
- To recommended & suggest on the basis of major findings.

1.6 SIGNIFICANCE OF THE STUDY

Basically this study is performed to apply the theoretical concept and knowledge of portfolio analysis to the practical aspect as a partial fulfilment of the requirement of Master of Business (MBS) under the faculty of Management, Tribhuban University. As a result of economic liberalization in Nepal, the investment opportunities have been wider and the investment practices are in

increasing day by day. However, the investment opportunities are increasing and the security market being wider, there found to be finger count researches and studies are done in connection to the securities market. As the fulfilment of the objective of the study, the investor should be well familiar with the leading factors for making decision regarding investment. Therefore, this type of study will help them provide the basic knowledge regarding the choice of investment alternatives and help them being rational in making investment decision.

This study basically tries to inform the investors existing and potential regarding the assessment of risk, return of the securities of the companies listed in NEPSE and formation of the optimum investment portfolio among the securities on the basis of available data and information. This study is focused to assess the systemic investment process and analysis of various relevant factors related with investment specifically, in securities. Eventually, this study will try its best to maximize return by reducing the level of risk with the help of optimum investment portfolio which will provide a guideline for rational investors existing or potential willing to make investment in securities.

1.7 LIMITATION OF THE STUDY

Since each study is conducted under some constraints, this is also not an exception. Some of the specific limitation which might make the study of limited scope is summarised as:

- The study periods covers only six years from FY 2003/04 to FY 2008/09
- Out of many Commercial, Development Banks, Finance Companies and Insurance Companies, the study is going to be conducted on only selected institution.
- This study is mainly based on secondary data. Due to lack of required data and relevant information the portfolio analysis can be limited within a narrow scope.
- The sampling error may occur in the study.
- Time/budget constraints and the lack of experience may be the other limitation of this study.

Despite those above mentioned limitations, this study has tried its best to

provide valid result as far as possible and in depth study of portfolio analysis for the formation of best investment portfolio.

1.8 ORGANIZATION OF THE STUDY

The organization of this study is as follows:

It contains the introductory part of the study where the general background of the study, the major issues to investigate, focus area of study, statement of problem, importance of the study, purpose and objective of the study, limitation of the study, is presented.

Chapter: II

It consists of the review of available literature. Books, journals, articles, and the previous research reports on the related field will be reviewed. Reviewed of literature has been divided into two sections viz. (i) Conceptual/ Theoretical Review and (ii) Review of Related Studies.

Chapter: III

Idescribes the research methodology employed to achieve the objectives of the study. Under this research design, population and sample, nature and sources of data, data collection technique, data analysis tools, are included.

Chapter: IV

It includes the data presentation and analysis. It consists of descriptive analysis of the gathered data and information using statistical as well as financial tools/models. Additionally, this will also include the major findings of the study.

Chapter: V

It includes the summary and conclusion of research study and remedial measures that can be applied for further creation up gradation, advancement of portfolio investment opportunities for the existing and potential investors.

CHAPTER – II

REVIEW OF LITERATURE

2.1 BACKGROUND

The chapter Review of Literature includes the review of concept and finding of previous research on the same field. Books, journals and unpublished thesis are reviewed for this purpose. In this regard, basic academic course book on finance, recently published books specially related to this topic, some of the major research based on journals and the related studies are reviewed.

It helps to identify the deficiencies of past study. The topic portfolio analysis is very important matter for investor to choose optimum investment opportunity. So, this part of the study is divided into two sections: Conceptual Framework and Review of related studies.

In the section conceptual framework, the theoretical aspects of investment, return, risk, portfolio, diversification etc have been described. In Review of related studies, the studies carried out by the students of Master Degree for the fulfilment of their study and related studies like articles, journal, books, magazine etc are reviewed.

2.2 CONCEPTUAL FRAMEWORK

The investment process describes how an investor should go about making decisions with regard to what marketable securities to invest in, how extensive the investment should be, and when the investment should be made. The formal investment process includes (Sharpe, 2002:10-14)

2.2.1 Investment Process

An investor should follow a set of procedure to arrive at correct investment decision. This set of procedure is known as investment process. According to Sharpe Alexander and Bowley investment decision process includes following five steps.

Set Investment Policy

First of all investor should specify why he want to invest. In other words investor's wealth and the amount of his or her investment wealth should be determined first. An investor set his investment objective based on both risk and return.

Perform Security Analysis

This step involves examining several individual securities or group of securities within the broad categories of financial assets providing identified. For this purpose investor can use stock analysis method like technical analysis and fundamental analysis.

Construct a Portfolio

It involves selecting specific securities in which to invest and how much to invest in each security. Portfolio construction is a difficult task: hence it requires knowledge of the different types of securities. Investor can use active portfolio strategy or passive portfolio strategy.

Portfolio Revision

It is step of investment process in which provision three steps are revised. This is over time the investor may change his or her investment objectives, which in turn may cause the currently held portfolio to be less than optimal.

Portfolio Performance Evaluation

The fifth and last step of the investment process, Portfolio Performance Evaluation involves determining periodically how the portfolio performed in terms of not only the return earned but also the risk experienced by the investor. Thus appropriate measures of return and risk as well as relevant standards are needed.

2.2.2. Common Stock

Common stock represents ownership position in a corporation. It has a residual claim, in the sense that creditors and preference share holder can receive payment only after the payment of all other claims. In bankruptcy common stockholders are, in principal, entitled to assets remaining after all prior claimants have been satisfied. The risk is highest with common stock investment. When investors buy common stock they receive certificate of ownership as a proof of their being part of the company. The certificate states the number of shares purchased and their par value (V.K. Bhalla, 2000:196)

The share of the common stock can be authorized either with or with out par value. The par value of the stock is merely a stated figure in the corporate charter and is of little economic significance. A company should not issue at a price less than par value because stock holders who bought stock for less than par value would be liable to creditors for the difference between the below par price they paid and par value (Van Horne, 1997:98).

Common stocks have one important investment characteristics and are important speculative characteristics. Their investment value and average market price tend to increase regularly but persistently over the decades as their net worth builds through the reinvestment of undistributed earning. However most of the time common stocks are subject to irrational and excessive price fluctuation in both directions, as most people to speculate or gamble i.e. to give way to hope fear and greed (Van Horne, 1997:98).

2.2.3 Risk and Return

Risk and return are preliminary information needed in the field of investment decision. Every rational investor attempts to maximize return and minimize risk. To do so, the investors must understand the concepts and measurement of return and risk. Correct risk and return estimates and analysis of financial assets play a significant role for successful investment decision.

Return

In general terms, returns means benefit. In other words, return is the income received on investment. Investment return is defined as the after tax increase in the value of the initial investment (Chency and Hosses, 1993:30). The increase in value of assets can come from two sources: a direct cash payment to the investor or and increase in the market value of the investment relative to the original purchase price. The rate of returns is the relative value of benefit on investment. The rate of returns concept is important because it measures the speed which the investor's wealth increases or decreases (Francis, 1992:1).

Shareholders expect two forms of return from the purchase of common stock: Capital gain and Dividends. Capital gain may be defined as the profit resulting from the sale of common stock. The shareholders expect an increase in the market value of common stock over time. The shareholders also expect, at some point, a form of regular cash earning from the investment which is termed as dividend. Hence, every investor's expectation from their investment can be fulfilled by means of: either through capital increment of dividend payment, and or both the devices. Generally investors always seek the maximization of dividend of dividend growth as well as market price growth. "Financial management is therefore concern with the activities of corporation that affect the well being of stock holders. That well being can be partially measured by the dividend received, but a more accurate measure is the market value of the stock.

An investor can obtain two kind of income from an investment in a share of stock of a bond (Francis, 1992:2).

- 1) Income from price appreciation (or losses from price depreciation).
- 2) Cash flow income from cash dividend or coupon interest payments.

The sum of these two sources of income (or loss) equals the change in the invested wealth during any given holding period. The rate of return formula can be restated in a form appropriate for almost any investment.

$$\begin{aligned} HPR &= \frac{\text{Ending price} - \text{Beginning price} + \text{Interest or dividend received}}{\text{purchase price}} \\ &= \frac{EP - BP + Ct}{BP} \end{aligned}$$

Where,

- HPR = Holding Period rate of return
- EP = Ending Price
- BP = Beginning Price
- Ct = Dividend or interest received

Annualized rate of return over several periods can be calculated in two ways. The first one is simply to take the arithmetic average of the annual holding period returns over a given period and the second one, which also takes account the compounding effects of cash receipts over different time intervals, is the geometric mean rate of return.

- The simple arithmetic mean:

$$\overline{HPR} = \sum_{t=1}^n \frac{HPR_t}{n}$$

➤ The Geometric mean:

$$HPR_g = \prod_{t=1}^n (1 + HPR_t)^{\frac{1}{n}} - 1$$

Where HPR_t is the individual period return, n is the number of period and \prod represents the product (or the result of multiplying).

Expected Rate of Return

Investment decisions are based on expectation of future consequences, If the investor can describe the possible that will influence each of the possible rate of return and assign probabilities to these out comes, the expected rate of return should equals; the weighted average of the various possibilities. The expected rate of return for any assets is the weighted average rate of return, using the probability of each rate of return as the weight (Francis, 1992:11). The expected rate of return is calculated by summing the products of the rate of return and their respective probabilities.

$$E(r) = \sum_{t=1}^T P_t r_t$$
$$= P_1 r_1 + P_2 r_2 + \dots + P_T r_T$$

Where,

P_t = Probability distribution of rate of return

r_t = rates of return

Risk

Risk is defined as the possibility of suffering some form of loss or damage. It is the chance of unfavourable event. An event is one or more of the possible outcomes of doing something. Every investment involves uncertainty that make future investment return risky (Francis, 1992: 3). Risk can be defined as the variability of the return from the investment over a period. The one period rate of return is the basic random variable used in measuring an investment risk. That investment will be riskier where variability of the returns exists. For example, a government bond that guarantees its holder Rs 100 interest after one month has no risk, since there is no variability associated with the return.

But an equivalent investment in a firm's common stock that may earn over the same period anywhere from Rs. 0 to Rs 500 is very risky due to the high variability of return. The more certain the return from an asset, the less variability and therefore the less risk, changes in market interest rates, inflation, alternating bull and bear market forces, management, international and national political scenario, government policies, industrial profitability and other sources of uncertainty factors contribute to investment risk. There are lots of sources of investment risk hence it could be difficult to make an exhaustive list. If all the uncertainties could be listed, they would add up to total risk or total variability of return. The dictionary defines risk as "the change of injury, damage, or loss". The dictionary definition of risk, for example, is not sufficiently precise to allow risky objects to be unambiguously ranked in terms of this riskiness. Thus it is desirable to develop a quantitative surrogate for dictionary definition of risk.

The rate of return is the single most important outcome from an investment, an as a result, most quantitative risk surrogates focus on it. Financial analysis and statisticians prefer to use a quantitative risk surrogate called the variance of returns, denoted $\text{var}(r)$. The variance of an asset's rates of return equals the sum of the products of the squared deviations of each possible rate of return of the expected rate of return multiplied by the probability that the rate of returns occurs (Francis, 1992: 13).

$$\begin{aligned} \text{VAR}(r) &= \sum_{t=1}^T P_t [r_t - E(r)]^2 \\ &= P_1 [r_1 - E(r)]^2 + P_2 [r_2 - E(r)]^2 + \dots + P_t [r_t - E(r)]^2 \end{aligned}$$

The square root of the variance of the rates of return is called the standard deviation of the rate of return.

$$\text{Standard Deviation } (\sigma) = \sqrt{\text{Var}(r)}$$

The standard deviation and the variance are equally acceptable and conceptually equivalent quantitative measures of an asset's total risk.

Sources of Investment Risk

Every investment involves uncertainties that make future investment returns risky. The sources of uncertainty that contribute to investment risk are (Francis, 1992: 3-10);

Interest Rate Risk

It is defined as the potential variability of returns caused by changes in the market interest rates. If market interest rates rise or fall, then the investments' present value will fall or rise. Present value moves inversely with changes in the market rate of interest. The interest rate risk affects the price of bonds, stocks, real estate, gold, puts, calls, future contracts, and other investment as well.

Purchasing Power Risk

It is the variability of return an investor suffers because of inflation. Economists measure the rate of inflation by using a price index. The percentage change in the consumer price index is a widely followed measure of the rate of inflation.

Bull-Bar market Risk

It arises from the variability in market returns resulting from alternating bull and bear market forces.

When a security index rises fairly consistently from a low point, called a trough, for a period of time, this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next trough is called a bear market. Bull markets that usually rise more than enough to compensate for the bear market losses follow bear markets. But the alternating bull and bear market forces create a potential source of investment risk.

Management Risk

Errors made by business managers can harm those who invested in their firms. Forecasting management errors is difficult work that may not be worth the effort and, as a result, imports a needlessly sceptical outlook. Agency theory provides investor with an opportunity to replace scepticism with informed insight as they endeavour to analyze subjective management risk.

Default Risk

Default risk is that portion of an investments' total risk that results from changes in the financial integrity of the investment. The variability of returns that investors experience as a result of changes in the creditworthiness of a firm in which they invested is their default risk.

Liquidity Risk

Liquidity risk is that portion of an assets' total variability of return which results from price discounts given or sales commissions paid in order to sell that asset without delay.

Callability Risk

Some bonds and preferred stocks are issued with a call provision. Issuers like the call provision because it allows them to buy back outstanding preferred stocks and/or bonds with the funds from a new issue if market interest rates drop below the level being paid on the outstanding securities. But, whatever the issuing company gains by calling in an issue is gained at the expense of the investors who have their securities called.

That portion of security's total variability of returns that derives from the possibility that the issue may be called is the callability risk. Callability risk commands a risk premium that comes in the form of a slightly higher average rate of return. This additional return should increase as the risk that the issue would be called increases.

Convertibility Risk

Conversion is a contractual stipulation that is included in the terms of original security issue. This provision alters the variability of returns from the affected security.

Convertibility risk is that portion of the total variability of return from a convertible bond or preferred stock that reflects the possibility that the investment may be converted into the issuer's common stock at a time or under terms harmful to the investor's best interests.

Political risk

Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the effects of various measures to improve their relative position increasing the variability of return from the affected asset regardless of whether the changes that cause political risk are sought by political or by economic interests, the resulting variability of return is called political risk if it is accomplished through legislative, judicial or administrative branches of the government. Political risk can be international as well as domestic.

Industry risk

Industry risk is that portion of an investment's total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and/or quotas on the products produced by an industry, product or industry related taxes, industry wide labor union problems, environmental restrictions, raw material

availability, and similar factors interact and affect all the firms in an industry simultaneously. As a result of these commonalities, the prices of the securities issued by competing firms tend to rise and fall together.

These uncertainties are the major sources of investment risk which are of additive nature and add up to total risk. There might be numerous other sources of risk as well.

2.2.4 Portfolio

Investment positions are undertaken with the goal of earning some expected rate of return. Investors seek to minimize inefficient deviations from this expected rate of return. Diversification is essential to the creation of an efficient portfolio because it can reduce the variability of returns around the expected return. (Francis, 1992: 228)

The term 'portfolio' simply means collection of investments. For an investor through the stock exchange will be a collection of shareholdings in different companies. For a property investor, portfolio will be a collection of buildings. To a financial manager within an industrial company, portfolio will be a collection of 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. (Brockington, 1990 : 187)

Portfolio management is the art of handling a pool of funds so that it not only preserves its original value but also over time appreciates in value and yields an adequate return consistent with the level of risk assumed (Feorge 1999:75).

The portfolio manager seeking efficient investments works with two kinds of statistics- expected return statistics and risk statistics for individual assets are the exogenously determined input data analyzed by the portfolio analyst. The objective of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor deems appropriate (Van Horne, 1997:90)

Portfolio is simply a combination of two or more securities or assets (Francis, 1992: 229)

Portfolio refers to investing in two or more securities for minimization of overall risk and maximization of overall return of an investment. Portfolio can be understood as "Spreading the risk". This means that we can reduce investment risk simply by spreading our investment in different securities.

Even the portfolio of randomly selected securities can reduce risk. Investors rarely place their entire wealth into a single asset or investment rather they construct a portfolio or group of investments. Therefore it is needed to extend analysis of risk and return to include portfolio.

Portfolio Expected Return

The expected return on portfolio always represents a linear relationship and it is simply the average returns for the securities weighted by the proportion of the portfolio devoted to each security. Thus, the portfolio expected rate of return is the weighted average of the returns on each included. The weights are equal securities (the weight must sum to 100% or 1). Expected rate of return of a portfolio can be expressed as:

$$E(r_p) = \sum_{i=1}^n X_i E(r_i)$$

Equation defines a portfolio's expected rate of return, denoted $E(r_p)$ for n asset portfolio. The character x_i represents the fraction of the total value of the portfolio invested in the i^{th} asset. The x_i 's are called weights or participation levels. These weights are the decision variables upon which the portfolio manager is paid to decide.

The symbol $E(r_i)$ denotes the expected rate of return from the i^{th} asset, it is an exogenously determined value defined earlier.

Risk of a Portfolio

The portfolio risk is measured by either the variance or its square root, the standard deviation of return. The portfolio risk depends not only on the riskiness of the individual security included into portfolio but also on the relationship among those securities. The risk from a portfolio made up of n assets is computed as

$$\text{Portfolio Risk} = \text{Var}(r_p) = \sum_{i=1}^n \sum_{j=1}^n X_i X_j P_{ij} \sigma_i \sigma_j$$

Where,

X_i = proportion of investment in security i

X_j = proportion of investment in security j

P_{ij} = correlation coefficient between i and j securities

σ_i = standard deviation of security i

σ_j = standard deviation of security j

Systematic risk and unsystematic risk:

Systematic risk and unsystematic risk are the terms frequently used in the portfolio context. Combining securities, those are not perfectly positively correlated helps to reduce the risk of a portfolio to some extent.

Systematic risk is the variability of a security's return with that of the overall stock market. It is also called unavoidable risk. It is measured by beta. The beta of a stock is the slope of the characteristic line between returns for the stock and those for the market. Beta depicts the sensitivity of the security's excess returns to that of the market portfolio. If the slope is 1, it means that excess returns for the stock vary proportionately with excess returns for the market portfolio. In other words, the stock has the same unavoidable or systematic risk as the market as a whole. A slope steeper than 1 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 systematic risk than the market as a whole. This type of stock is often called an "aggressive" stock. A slope less than 1 means that the stock has less unavoidable or systematic risk than does the market as a whole. This type of stock is often called a "defensive" stock (Weston & Copeland, 1992: 87).

Changes in the economic, political and sociological environment that affect security markets are sources of systematic risk. Systematic variability of return is found in nearly all securities to varying degrees because most securities tend to move together in a systematic manner (Francis, 1992:265)

Events such as labour strikes, management errors, inventions, advertising campaigns, shifts in consumer taste, and lawsuits cause unsystematic variability in the value of a market asset. Since unsystematic changes affect one firm, or at most a few firms, they must be forecast separately for each firm and for each individual incident. Unsystematic security price movements are statistically independent from each other, and so they may be averaged to zero when different assets are combined to form a diversified portfolio. Therefore, unsystematic risk is also called diversifiable risk (Francis, 1992:20)

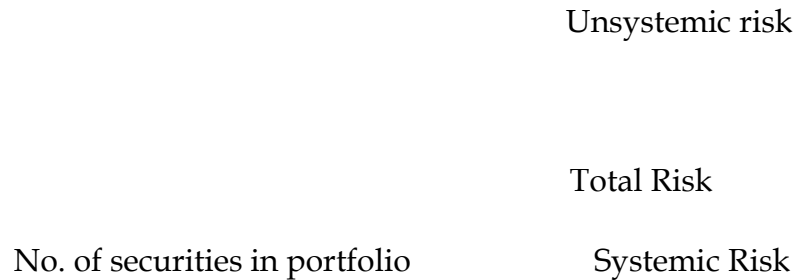
For most stocks, unsystematic risk accounts for between 60 to 70 percent of stock total risk or standard deviation (Van Horn and Wachowicz 9th Ed: 91). This kind of risk can be reduced by diversification and even eliminated if diversification is efficient. Hence not all the risk involved in holding a stock is relevant since part of this risk can be diversified away. The relationship among systematic, unsystematic and total risk are shown below.

Total risk (σ_i) = systematic risk + unsystematic risk

Where, systematic risk = $\sigma_i \cdot \rho_{im}$ and unsystematic risk = $\sigma_i (1 - \rho_{im})$. Here ρ_{im} is the correlation coefficient between the return of given stock (i) and the return on market portfolio.

Figure: 2.1
Systematic and Unsystematic Risk

SD of portfolio



Diversification

Diversification in investment represents the portfolio management. The key to diversification in the correlation across the securities portfolio theory was originally proposed by Harry M. Markowitz. It helps to reduce risk because different investments will rise and fall independent of each other. The combinations of these assets more often than not will cancel out each others' fluctuation, there of reducing risk. It is a risk management technique that mixes a wide variety of investments within a portfolio. It is designed to minimize the impact of any one security on overall portfolio performance. "Diversification is possibly the greatest way to reduce the risk. This is why mutual funds are so popular" (<http://www.investopedia.com>).

Investors can reduce their potential for loss through diversification. The key to diversification is the age-old adage, "don't put all of your eggs in one basket". The main point of diversification is to reduce risk rather than improve expected return. This is the power of diversification: the whole is greater than the sum of its parts" (<http://www.dfaus.com>)

Diversification is essential to creation of an efficient investment because it can reduce the variability of returns around the expected return. Here are some different diversification techniques for reducing a portfolio's risk (Francis, 1992: 228-235)

Simple Diversification

Simple diversification can be defined as "not putting all the eggs in one basket" or "spreading the risks". The simple diversification would be able to reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be added to a portfolio. It reduces a portfolio's total diversifiable risk to zero and only the undiversifiable risk remains. So this approach assumes that an investor can expect a reasonable return for a given level of risk.

Diversification across Industry

Some investment counsellors advocate selecting securities from different industries to achieve better diversification. It is certainly better to follow this advice than to select all the securities in a portfolio from one industry. But, empirical research has shown that diversifying across industries is not much better than simply selecting securities randomly.

Superfluous Diversification

It refers to the investor spreading himself in so investments on his portfolio. The investor finds it impossible to manage the assets on his portfolio because the management of a large number of assets requires knowledge of the liquidity of each investment, return; a liability and this will become impossible without specialized knowledge. He also finds it both difficult and expensive to look after a large number of investments. If the plans to switch over investments by often selling and buying assets expecting a high rate of return, he involves himself in high transaction costs and more money will be spent in managing superfluous diversification. It will be very difficult for him to measure the return on each of his investments. All those problems may result in inadequate return.

Simple Diversification across Quality Rating Categories

W.H. Wagner and S.Lau (1997) analyzed the effects of simple diversification across stocks that have the same standard and poor's quality ratings. The finding of the study suggested that portfolio managers can reduce portfolio risk levels lower than those attainable with simple diversification by not diversifying across lower quality assets. The higher-quality portfolio contains assets stocks were able to achieve lower level of risk than the simply diversified portfolios of lower-quality stocks.

Markowitz Diversification

Markowitz diversification may be defined as combining assets which are less than perfectly correlated in order to reduce portfolio risk without sacrificing portfolio returns. Markowitz diversification is more analytical than simple diversification and considers asset's correlations (or covariance). The lower the correlation between assets, the more that Markowitz diversification will be able to reduce the portfolio's risk, (Francis, 2002:234)

Objective of the Portfolio Analysis

Stability of income: The main objective of portfolio management is to provide stability or consumption of income.

Safety of the principle: Security not only involves keeping the principle amount and the stability of the income, but also to make continuous growth in the capital which may be achieved through reinvesting of funds in growth securities or through purchase of growth securities.

Liquidity on the investment: The objective of portfolio management is to provide surety to the investor about the liquidity of the investment so that in the worst period, he does not go worry about its realization.

Favourable tax status: The investment must be made keeping in view of the tax status regarding the periodic return and capital gain. So, investment to be made in such security, the tax burden will be minimum.

Portfolio analysis

Portfolios are the combination of the different types of securities. As individual securities have risk and return characteristics of their own risk and return characteristics of portfolio may or may not take on the aggregate characteristics of their individual parts. Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities.(Fisher & Jordan, 559). The main functions of portfolio analysis are to analyze the range of possible portfolios that can be constituted from a given set of securities and the evaluation of efficiency of each such combination.

Markowitz Portfolio Selection Model

Of course, the portfolio investment is the best tool of risk diversification but there exists a problem of portfolio selection. Portfolio is the collection of securities. Investors always face a problem of selecting optimal portfolio from a set of possible portfolios. Harry M. Markowitz, in 1952 published a paper that is generally viewed as the origin of the portfolio theory approach to investing.

Markowitz's approach begins by assuming that an investor has a given sum of money to invest at the present time. This money will be invested for a particular length of time known as the investor's holding period. At the end of holding period, the investor will sell the securities purchased at the beginning of that period.

Markowitz's model is a theoretical framework for the analysis of risk-return choices. Decisions are based on the concept of efficient portfolios. A portfolio is said to be efficient when it provides maximum expected return for the same level risk or provides minimum risk for the same level of return.

Assumptions of Portfolio Theory (V.K. Bhalla, 2001: 261)

The portfolio selection model of Harry M. Markowitz is based on several assumptions regarding investor's behaviour.

1. Investors consider each investment alternatives as being represented by a probability distribution of expected returns over same holding period.
2. Investors maximize one period- expected utility and posse's utility curve, which demonstrates diminishing marginal utility of wealth.
3. Individuals estimate the risk on the basis of the variability of expected returns.
4. Investors base decisions solely on expected return and variance of returns only.
5. For a given risk level, investors prefer high return to lower returns. Similarly, for a given level of expected return, investors prefer less risk to more risk.

The efficient set theorem:

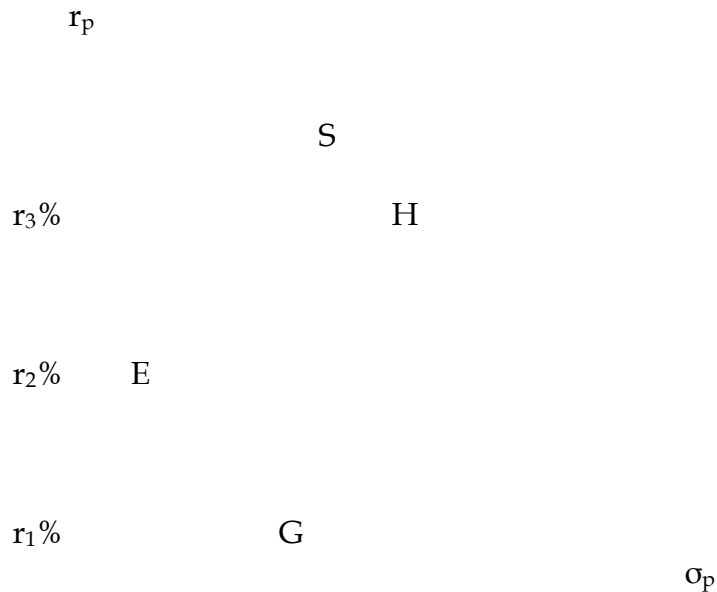
Investor can prepare an infinite number of portfolios for investment. It is not necessary to evaluate all the portfolios which he/she creates. The investor can select an optimal portfolio from a feasible set of portfolios. The feasible set simply represents all portfolios that could be formed from a group of N securities. All the possible portfolios, which could be formed from the N securities, lie either on or within the boundary of feasible set. In general, this set will have an umbrella type shape similar to the one shown in the figure 2.2.

An investor will choose his or her optimal portfolio from the set of portfolio that

- i) Offer maximum expected return for varying level of risk and
- ii) Offer minimum risk for varying level of expected return.

The set of portfolio meeting these two conditions is known as the efficient set. The efficient set can be known as efficient frontier also.

Figure: 2.2
Feasible and Efficient Set

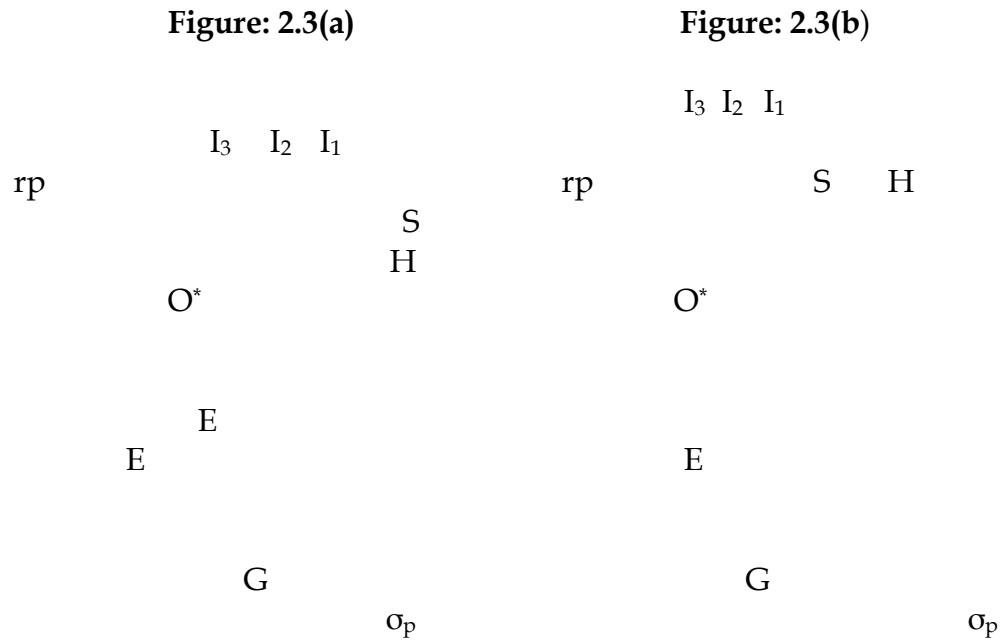


(William F. Sharpe 2002: 172)

As stated earlier, we can construct large number of portfolios by combining security and by varying proportion of investment among asset. Among the portfolios formed, some are efficient and many others are inefficient (dominated). The efficient portfolio lie along efficient frontier, posses unique risk and return characteristics and are the candidates' further for selection. The investor will choose portfolios form these efficient portfolios.

“Given the efficient frontier and the risk return indifference curves, the optimal portfolio is found set point of tangency between the efficient frontier and a utility indifference curve. This point represents the highest level of utility the investors can reach” (Chandara, 1998:13)

To select an optimal portfolio an investor should plot his or her indifference curves on the efficient set and then proceed to choose the portfolio on the indifference curve that is farthest northwest. This portfolio will correspond to the point at which an indifference curve is just tangent to the efficient set. This can be seen in the figure 2.3 (a) and 2.3(b).



Here Portfolio O^* is the optimal which lie on indifference curve I_2 . Although the investor would prefer a portfolio on I_3 , no such portfolio exists; wanting to be on this indifference curve is just wishful thinking. In regard to I_1 , there are several portfolios that the investor could choose (eg O). However, the figure shows that portfolio O^* dominates such portfolios because it is on an indifference curve that is farther northwest. The portfolio selection for a highly risk - averse investor has been shown in figure 2.1.4.6.3(b).

Upon reflection, the efficient set theorem is quite rational. The efficient theorem stating that the investor needs to be concern only with portfolios that lie on the northwest boundary of the feasible set, is a logical consequence.

2.2.5 Capital Asset Pricing Model (CAPM)

The CAPM specifies the relationship between risk and required rates of return on assets when they are held in well-diversified portfolios. In a competitive market, the expected risk premium varies in direct proportional to beta.

The Capital asset pricing model states that the expected risk premium on each investment is proportional to its beta. This means that each investment is proportional to its beta. This means that each investment should lie on the sloping security market line connecting Treasury bills and Market Portfolio" (Stewart C. Myres & Richard A. Breaaly, 2003: 200)

The CAPM used to calculate the required rate of return for stock i is

$$E(r_i) = R_f + [E(r_m) - r_f]\beta_i$$

Where,

$E(r_i)$ = the expected return on the i th risky asset.

R_f = the rate of return on a risk free asset.

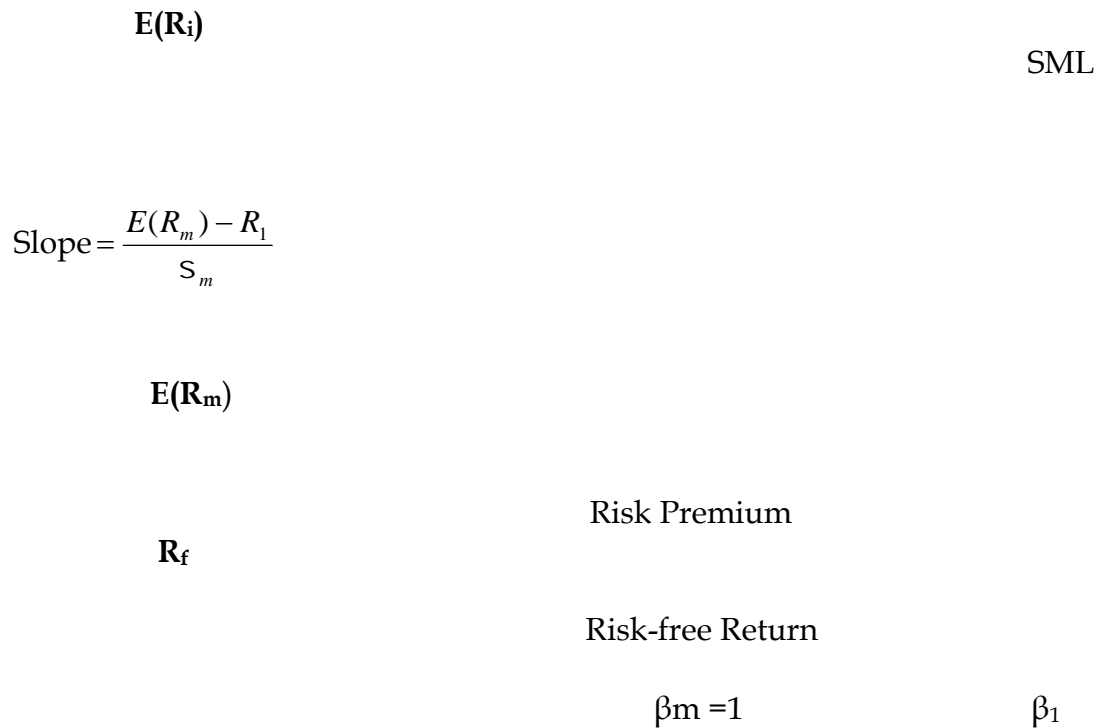
$E(r_m)$ = the expected return on the market portfolio.

$$S_i = \frac{Cov(r_i, r_m)}{Var(r_m)} = \text{a measure of the un-diversifiable risk of the } i^{\text{th}} \text{ security.}$$

The greater the beta of a security, the greater the risk and the greater the expected return required. Likewise, the lower the beta, the lower the risk, the more valuable it becomes and the lower the expected return required.

"In market equilibrium the relation between individual securities' expected rate of return and its systematic risk, as measured by beta will be linear. The relation is known as Security Market Line" (Van Horne op.cit. p.70). Then the CAPM is graphed in the figure, it is called the security market line (SML). SML may be used to explain the required rate of return on all securities whether or not they are efficient. The SML provides a unique relationship between un-diversifiable risk (measure by beta) and expected rate of return. The CAPM or SML is an equilibrium theory of how to price and measure risk.

Figure 2.4
Security Market Line CAPM



(Van Horne, 2000:71)

Assumptions of the CAPM (Shrestha, 2003: 162)

The CAPM is based on given assumptions.

- Investors evaluate portfolios by looking at the expected returns and standard deviations of the portfolio over a one period horizon.
- Investors are never satisfied, so when given a choice between two portfolios with identical standard deviations, they will choose the one with the higher expected return.
- Investors are risk averse, so when given a choice between two portfolios with identical expected returns, they will choose the one with the lower standard deviation.
- Individual assets are infinitely divisible, meaning that an investor can buy a fraction of a share if he or she so desires.

- There is a risk free rate at which an investor may either lend money or borrow money.
- Taxes and transaction costs are irrelevant.

To these assumptions the following ones are added:

- All investors have the same one period horizon.
- The risk-free rate is the same for all investors.
- Information is freely and instantly available to all investor.
- Investors have homogenous expectations, meaning that they have the same perceptions in regard to the expected returns, standard deviations, and covariance of securities.

2.2.6 Portfolio Performance Evaluation

There are various methods applied to measure the portfolio performance. They are follows:

Sharpe's Performance Measure

One performance measure that has been developed to evaluate a portfolio performance e , considering both return and risk simultaneous, is the Sharpe's index of portfolio performance. Sharpe's measure divides average portfolio excess return over the sample period by the standard deviation of return over the period. It measures the reward to (total) volatility trade off. It can be stated as: (Thapa, 2004:103)

$$S_p = \frac{\text{Risk premium}}{\text{Total Risk}} = \frac{r_i - R_f}{\sigma_p}$$

Where,

S_p = Sharp's index of portfolio performance for portfolio i

r_i = Average returns from portfolio i

σ = Standard deviation of returns for portfolio i

R_f = Risk free rate of return

Treynor's portfolio performance measure:

Another index of portfolio performance that is similar to the Sharp index is the Treynor performance index. The Treynor index however, is concerned with systematic (or beta) risk while the Sharp index is concerned with total risk as measured by a portfolio's standard deviation of returns. The Treynor index is defined as follows: (Thapa, 2004:104)

$$T_p = \frac{\text{Risk premium}}{\text{Systematic risk index}} = \frac{r_i - R}{\beta_p}$$

Where,

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

r_i = The average return from portfolio i

R = Risk less rate of interest.

β_p = The beta for the portfolio.

Jensen performance measure:

Michael Jensen has also developed a method for evaluating a portfolio's asset's performance. Jensen's measure is the average return on the portfolio over and above that predicted by the CAPM, given the portfolio's beta and the average market return. Jensen's measure is the portfolio alpha value. The Jensen's measure is computed with regression equation (Thapa Kiran, 2004: 105)

$$r_{i,t} - R_t = A_i + B_i(r_{m,t} - R_t) + U_{i,t}$$

Where,

$r_{i,t} - R_t = r_{p,t}$ = The risk premium for asset i in time period t.

R_t = The risk free rate in time period t.

$r_{m,t}$ = The return on market for time period t.

β_i = The beta coefficient for asset i.

A_i = Jensen's performance measure

R_t = The return on asset i for time period t.

$U_{i,t}$ = Error terms for asset i in time period t.

2.3 REVIEW OF RELATED STUDIES IN NEPAL

Mr. Narayan Prasad Paudel conducted a study with the objective of whether the shares of commercial banks were correctly priced by analyzing the realized rates of returns and the required rates of return using the CAPM.

The study was based on the data of shares of seven sample commercial banks from **Mid July 1996 to Mid July 2001**. For the purpose of analyzing risk characteristics of the shares of those commercial banks, Mr. Poudel had used standard deviation, the coefficient of variation, the correlation coefficient between the returns of individual bank's share and the return on market portfolio and the beta coefficient. Average return on the 91-day Treasury bill was taken as a risk-free rate of return.

On the basis of this study, it was found that the shares of BOK offered the highest realized rate of return. The prices of the shares of SCBNL, NSBIB, NBBL, EBL and BOK were under priced.

Based on the standard deviation of the returns on shares, the shares of EBL could be considered as high-risk security. The standard deviation of the returns on shares of HBL was the lowest one. On the basis of CV, the share of BOK had the lowest risk per unit of return, the highest being with the shares of NABIL. It was also observed that the systemic risk was negative with the shares of Nabil. Therefore, the total risk on the returns on shares of NABIL was due to company specific characteristics rather than market pervasive. Returns on all the shares except NABIL had positive correlation with the returns on market.

Most of the shares appeared to be defensive as beta coefficients were less than 1. Only the return on shares of BOK had beta coefficient of greater than 1, indicating that the share was more risky than the market.

Mr. Paudel concluded, "The shares of commercial banks in Nepal are heavily traded in the stock market and, therefore, these shares play a key role in the determination of stock exchange indicators. All the shares produced higher rates of return than the return on market portfolio. However, the risk-return characteristics did not seem to be the same for all the shares reviewed". He further concluded, "Most of the shares fall under the category of defensive stocks, except the shares of Bank of Kathmandu Limited. From the analysis, it appears that none of the shares are correctly priced."

Mr. Shiva Raj Shrestha, Deputy Chief Officer of Nepal Rastra Bank, Banking operation department, has given a short glimpse on the **“Portfolio Management in Commercial Bank, Theory and Practice” (2002/03 Annual Report)** Mr. Shrestha has highlighted the following issues in the articles.

The portfolio management becomes very important both for individual as well as institutional investors. Investors would like to select a best mix of investment assets subject to the following aspects:

- Higher return which is comparable with alternative opportunities available according to the risk class of investors.
- Good Liquidity with adequate safety of investment.
Certain capital gains.
- Maximum tax concession.
- Flexible investment.
- Economic, efficient and effective investment mix.
- In view of above aspects, following strategies are adopted.
- Do not hold any single security i.e. try to have a portfolio of different securities.
- Don not put all the eggs in one basket i.e. have a diversified investment.
- Chose such a portfolio of securities, which ensures maximum return with minimum risk or lower of return but with added objectives of maximization.

However, Mr. Shrestha has also presented the following approaches to be added for designing a good portfolio and its investment.

- To find out the invisible assets (generally securities) having scope for the returns depending upon individual characteristics like age, health, disposition, liquidity, tax liability.
- To find out the risk of securities depending upon the attitude of investor toward risk.
- To develop alternative investment strategies for selecting a better portfolio, this will ensure a trade off between risk and return. So as to attach primary objective of wealth maximization at lowest risk.
- To identify securities for investment to refuse volatility of return and risk.

In the context, Mr. Shrestha has presented two types of investment analysis techniques i.e. fundamental analysis and technical analysis to consider any securities such as equity debentures or bond and other money and capital market instruments. He has suggested that the banks having international network can also offer access to global financial market. He has also pointed out the required skilled manpower research and analysis and proper Management Information System (MIS) in any type of commercial banks to get success in portfolio management and customer confidence.

2.4 REVIEW OF PREVIOUS RESEARCH

Mr. Anil Ghimire, (2007) undertaken a study entitled **Optimum Portfolio of Listed Commercial Banks, Finance Companies and Insurance Companies.**

The major objectives of the study were:

- To find out the major problem of investor regarding selection of the optimum portfolio among the securities trading in NEPSE.
- To find out the risk & return variables of securities.
- Find out the best portfolio investment.
- To suggest people to be a rational investor.

The study is based on primary as well as secondary data. He had used descriptive as well as analytical methodology to analyze the secondary data. The study was based on one-year data. The common stock of the listed company in Grade A was been analyzed with formation of suitable portfolios. He had taken 7 Commercial Banks, 7 Insurance Companies and 7 Finance Companies as sample.

After analyzing the secondary data of selected companies, Mr Ghimire had summarized that:

- Investors in Nepal have not yet practiced to invest in portfolio of securities.
- An analysis of two and three securities portfolio shows that risk can be totally minimized if the correlation is perfectly negative. In this situation, the risk can be totally diversified but when there is perfectly correlation between the returns of the two securities, the risk is un-diversifiable.
- The analysis shows some correlation has negative and some has positive one. Negative correlation between securities returns is preferred for diversification of risk.

From Analysis of primary data he concluded that:

- Most of the investors know about portfolio but they do not know how to invest making optimum portfolio.
- Most of the Nepalese investors hold their stock for dividend which is not proper investment.

He has suggested Nepalese investor to make portfolio while making investment for this purpose they should construct portfolios of negatively correlated assets. Among three sectors he has recommended to invest bank sector for best performance as its CV is least. He stated that investor should adopt active investment strategy.

Mr Raju Prasa Aryal, (2007) undertook thesis entitled **Portfolio Analysis of Listed Companies with reference to the common stock**. His main objective was to analyze risk and return of individual stock & portfolio and to analyze whether the common stocks are over priced, under price or on equilibrium.

To obtain the objective he has used six years historical data from F/Y 1999/2000 to F/Y 2004/05. 3 Commercial Banks (Standard Chartered Bank Nepal Ltd, Everest Bank Ltd, and Himalayan Bank Ltd) and 3 Finance Companies (Kathmandu Finance Ltd, National Finance Company Ltd and Nepal share Market Company Limited) have been taken as sample companies.

He has concluded that common stock of Standard Chartered Bank Ltd has highest return. Everest Bank Limited is most risky as its highest standard deviation. From the study of different investment sectors investment on hotel sectors is less risky and investment on trading sector is most risky. Investor can

select one or more portfolio of banking sector and finance sector, banking and hotel and finance and trading sector.

He has suggested investor to diversify their fund to reduce risk for making portfolio one should select the stocks that have higher return and negative correlation or moderate positive correlation between stocks of different companies and sectors. To increase investor's rationality as well as market efficiency NEPSE needs to modernize the trading system and effective information channel.

Mr. Chuda Raj Adhikari, (2008): Portfolio Analysis on Investment with special reference to Nepalese Commercial & Development Banks is based on three Commercial Banks (NABIL Bank Ltd, Nepal Investment Bank Ltd & Himalayan Bank Ltd) and three Development Banks (Development Credit Bank, Nepal Development Bank & Ace Development Bank).

The relevant objectives of the study are:

- To study the return and risk of securities of selected Commercial and Development Banks.
- To study the Prices of Shares of Selected Commercial and Development Banks whether they are correctly priced or not.
- To analyze the portfolio return and risk of selected Commercial and Development Banks.
- To provide relevant suggestions on the basis of findings of this study.

The study is based on five years data from F/Y 2003 to F/Y 2007. The study is more empirical or analytical base and less descriptive on the basis of historical data. He has used both secondary and primary data.

The main finding of the study is:

- While making two or three assets portfolio between Commercial Banks, investing large proportion in NIBL and small portion in NABIL and HBI significantly reduces the risk without significant reduction in return.
- While making two or three assets portfolio between Development Banks, investing large proportion in DCBL and small portion in NDBL and ACEDBL significantly reduces the risk without significant reduction in return.

Rabindra Sigdel, (2008) undertook thesis entitled **Portfolio Analysis of Common Stock Investment** (with special reference to joint venture banks in Nepal). The thesis has two categorized objectives in which the first one is primary objective which contains to minimize risk and maximize return and secondary objectives are regular return, stable income, appreciation capital, easy marketability, safety investment.

The research is based on historical data and it covers ten years of period from fiscal year 1996/97 to fiscal year 2005/06. It related with the study of risk, return, and portfolio analysis of JVBs.

The study has many major findings out of which some major findings are according to CV, SCBL is the best investment alternative. There is volatility in beta coefficient, the required rate of return and expected rate of return for the selected banks. Stock of NBBL is most aggressive and the stock of NSBIL is the most defensive stock than other. As per Sharpe index, the portfolio of SCBNL & HBL has the best performance because of highest risk premium.

He recommended to construction of portfolio for better investment. For this one should select the stocks that have higher return and negative correlation. To get best return at lower risk investor should do portfolio revision at certain interval time. According to the study, the portfolio between SCBL & HBL is recommended to construction due to lowest risk as well as good positive return.

Mr. Pradip Kumar Sah (2009) worked thesis entitled **Investment Portfolio of Joint Venture Banks in Nepal** (with special reference to HBL, NBBL, SCBL, EBL and NIBL Banks).

The main objectives of this study are:

- To evaluate and analyze the investment structure and investment related ratios.
- To analyze portfolio risk and return.
- To find out trend of investment in different assets.
- To analyze the different types of risk associated with the banks.
- To suggest for the improvement on the basis of study.

In this research descriptive and analytical approaches are used to evaluate the loan and investment portfolio of Joint Venture Banks on the basis of secondary data. It is based on eight years data from FY 2000/01 to FY 2007/08.

The main findings of study are follows:

- Lowest percent of CV of EBL indicates that it has consistent policy on investment on HMG securities.
- EBL shows that best position on investment on loan and advances among the five banks.
- Comparatively shares and debentures give the highest return second loan and advances and the lowest by the HMG securities.
- Total investment and total deposit of CBs are all increasing every year.

Mr Sah has concluded that the CBs are using Portfolio in their investment to maximize return with minimum risk. The diversification of securities in portfolios investment of Nepalese CBs is not so wide. CBs in Nepal made their investment in government securities loan and advances and shares and debentures.

Mr. Sah recommended that the CBs should first evaluate the risk and return of individual assets based on that find out best combination of assets diversifying as possible as on different assets. This really gives the CBs to reduce significant risk and maximum return on optimal level.

He had further stated that investment on secure stable, liquid and profitable areas. But these all thing cannot be found on single and the same investment. Hence the commercial banks urgently should follow the portfolio on investment on their investment. This is only the tool that helps to maximize return in minimum risk.

Ms. Shreeta Baidhya, (2009) undertook a thesis work entitled **A Study on Portfolio Management of Nepalese Commercial Banks**. The main objective of the study is to analyze Portfolio Management of Nepalese Commercial Banks. She has taken BOK, NABIL Bank, HBL and NIBL as sample Commercial Banks. Ms. Baidhya used historical common stock data in order to achieve the objectives. The study is based on five year data from FY 2003/04 to FY 2007/08.

After analyzing the stocks, Ms. Baidhya summarized, risk per unit of return of NABIL is the highest and HBL is the lowest. The portfolio of NIBL is the best performer & Bok is least Performer on the basis of Sharpe Index. NABIL has highest and NIBL has lowest return. The minimum risk portfolio weights from the available one was .10 in BOK, .50 in NIBL, .40 in HBL

She suggests that CBs should invest it more funds on share & debenture (i.e. risky assets) for increasing their returns. She finally stated Commercial Banks

to diversify their investment in different securities that behave differently i.e. with negative or low correlation for reducing poor portfolio performance i.e. for reducing investment risk with a well diversified portfolio.

2.5 RESEARCH GAP

Although, portfolio management is not totally a new concept, there have been no up to date studies carrying out regarding portfolio management of investment in the securities issued by listed companies in Nepal. Independent studies regarding the analysis of stocks have not been found. It is found that only master's degree students have been carrying thesis works in such topics. Among these mostly studies are concentrated only on portfolio analysis of commercial banks. No study has been carried out regarding securities portfolio consisting of the stocks of Commercial Banks, Development Banks, Finance Companies and Insurance Companies. This study has taken sample companies from four sectors (commercial banks, development banks, finance companies and insurance companies).

Most of the previous studies are concentrated on the risk and return analysis of stocks of listed companies. Hence this research will fulfil the prevailing research gap by calculating the portfolio risk, return from different sets of portfolios between the stocks of listed companies and sectors which have been created using different weights. Optimum portfolio has also been chosen based on CV from the created sets of portfolios. Further more, the portfolio performance has also been evaluated with using Sharpe Index of Portfolio Performance Measure. Hence, this study has attempted to introduce new model for creating the best portfolio and assigning weights between the stocks and sector of Commercial Banks, Development Banks, Finance Companies and Insurance Companies.

CHAPTER- III

RESEARCH METHODOLOGY

3.1 BACKGROUND

A Research is systematic and in-depth study or search of any particular topic by formulating hypothesis, collecting information, analyzing and interpreting them through the valid results. It is also called a creative inquiry (investigation) to search new insight to phenomena.

Research is essentially a systematic inquiry seeking facts through objective verifiable methods in order to discover the relationship among them and to deduce them broad principles or laws.

Research methodology is a technique used for conducting research. It provides various methods for the collection, presentation, interpretation and analysis of data. For this various financial and statistical tools are used to analyze the data and conclude to the finding.

3.2 RESEARCH DESIGN

This research attempts to analyze the investment environment of Nepalese Capital Market. It aims to find out the adequate information for the investors willing to invest more effectively and efficiently. Hence in the process of research descriptive and analytical research design was used. As nature of descriptive studies this research simply portrays the fact that describes existing phenomena, identify or justify current conditions and practices and make comparison and evaluation.

3.3 POPULATION AND SAMPLE

The population of the study is all the listed commercial banks, development banks, finance companies and insurance companies in NEPSE. Now total numbers of listed companies of four sectors are 203 till end of July 16, 2010. Among them 27 are Commercial Banks, 78 Development Banks, 79 Finance Companies and 19 Insurance Companies. Hence, these all have been considered as total population.

For the study 3 commercial banks, 2 development banks, 3 finance companies and 3 insurance companies are selected randomly as sample. 35 investors have been selected for gathering information through questionnaire. Among them only 30 investor gave answer.

Table 3.1
Sample Companies

sectors	Population size	Sample size	Sampled companies	Percentage
Commercial Banks	27	3	1. Himalayan Bank Ltd. 2. Everest Bank Ltd. 3. Nepal Investment Bank Ltd.	11.11
Development Banks	78	2	1. Ace Development Bank Ltd. 2. Nirdhan Utthan Bank Ltd.	2.56
Finance Companies	79	3	1. Goodwill Finance Co. Ltd 2. Gorkha Finance Ltd. 3. Mahalaxmi Finance Ltd.	3.80
Insurance Companies	19	3	1. Everest Insurance Co. Ltd. 2. Himalayan General Insurance Co. Ltd. 3. Premier Insurance Co. Ltd.	15.79
Total	203	11		5.42%

(Source: <http://www.nrb.com>)

3.4 SAMPLING PROCEDURE

There are various types of sampling procedures in the research. In case of this study judgmental Sampling technique has been used.

3.5 SOURCES OF DATA

The study is based on secondary as well as primary data. Secondary data have been collected through various books, published annual/trading reports of NEPSE, SEBON and concerned companies. Specially the data have been derived from the official website of NEPSE- <http://www.nepalstock.com> and Annual Report of Securities Exchange of Nepal.

For the collection of primary data questionnaire was distributed to 35 investors. Among them 30 were respondent.

3.6 DATA COLLECTION TECHNIQUE

All required data are collected through primary and secondary data collection techniques. Questionnaire has been used to collect primary data. Annual Report and other published financial report are used to gather required secondary data. Some unpublished data (in general) provided by companies has also been used as secondary data.

3.7 METHODS OF DATA PRESENTATION AND ANALYSIS

As stated earlier, the basic structure of this study is descriptive plus empirical and analytical as well. In order to make the study more precise, the data are presented in the tabular form. Charts and diagrams are used to clarify and verify the data presented. Various statistical tools and financial tools are used to analyze the collected data.

3.8 TOOLS TO ANALYZE

To analyze the data and information, various financial as well as statistical tools have been used i.e. holding period return, expected rate of return, standard deviation, co-efficient of variation, beta co-efficient, portfolio risk and return, correlation co-efficient, etc.

i) Dividend per share (DPS)

DPS is calculated using the following model:

$$\text{DPS} = \text{cash dividend} + \text{stock dividend}$$

Stock dividend is calculated as:

$$\text{SDR} \times \text{Next year MPS}$$

Where SDR = Stock dividend ratio

ii) Market Price of Share (MPS)

Among High, Low and Closing price of stocks, here closing prices are taken as MPS because our study is focuses on annual data.

iii) Return on Stock

a) Holding Period Rate of Return (HPR)

Generally, single period return or holding period is represented by R and expressed in terms of percentage basis. It is calculated as:

$$\begin{aligned} \text{HPR} &= \frac{\text{Ending price} - \text{Beginning price} + \text{Interest or dividend received}}{\text{purchase price}} \\ &= \frac{EP - BP + Ct}{BP} \end{aligned}$$

Where,

EP = Ending Price

BP = Beginning Price

Ct = Dividend or interest received

b) Expected/ Average Rate of Return

The average rate of return is calculated dividing summation of annual return by no of years.

$$\text{Average rate of return} = \bar{r}_i = \sum \frac{r_i}{n}$$

Where,

$$\begin{aligned} \sum r_i &= \text{Summation of annual rate of return} \\ n &= \text{no of observation} \end{aligned}$$

iv) Risk on Stock

a) Standard deviation

Standard deviation is an estimate of the likely divergence of an actual return from an expected return. It measures the risk of the return. The higher the standard deviation, the more risk will be in the assets.

$$\text{Standard deviation} = \sigma_i = \sqrt{\frac{\sum (r_i - \bar{r}_i)^2}{n - 1}}$$

$$\begin{aligned} \text{Where, } r_i &= \text{annual return of stock } i \\ \bar{r}_i &= \text{expected return of stock } i \\ n &= \text{no of observation} \end{aligned}$$

b) Variance

Variance is the square of standard deviation. In case of historical data, it is the sum of the squared deviation from mean divided by number of observations.

$$\text{Variance} = \sigma_i^2 = \frac{\sum (r_i - \bar{r}_i)^2}{n - 1}$$

Where,

$$\begin{aligned} r_i &= \text{annual return of stock} \\ \bar{r}_i &= \text{average rate of return of stock} \\ n &= \text{no of observation} \end{aligned}$$

c) Coefficient of Variation

Coefficient of variation is the standardization measure of risk per unit of return. It is calculated as the standard deviation divided by the expected return.

$$\text{Coefficient of Variation (CV)} = \frac{\sigma}{\bar{r}}$$

Where,

\bar{r} = average rate of return of stock

σ = standard deviation of stock

v) Return and Risk of Market

a) Return on Market

Annual rate of return on market (R_m) can be calculated as follows:

$$(R_m) = \frac{\text{Ending NEPSE Index} - \text{Beginning NEPSE Index}}{\text{Beginning NEPSE Index}}$$

Average of rate of return on market (\bar{R}_m) can be calculated as follows:

$$(\bar{R}_m) = \frac{\sum R_m}{n}$$

Where,

$\sum R_m$ = summation of annual returns of market

n = no of observation

b) Risk on Market

Standard Deviation

Standard Deviation on market (\dagger_m) can be calculated as follows:

$$(\dagger_m) = \sqrt{\frac{\sum (R_m - \overline{R_m})^2}{n - 1}}$$

Where,

R_m = Annual return of market

$\overline{R_m}$ = Average rate of return of market

N = No. of observation

Variance

Variance on market (\dagger^2) can be expressed as follows:

$$\dagger^2 = \frac{\sum (R_m - \overline{R_m})^2}{N - 1}$$

Where,

R_m = annual return of market

$\overline{R_m}$ = average rate of return on market

N = no. of observation

Coefficient of variation (CV)

Coefficient of variation of market (CV) can be calculated as follows:

$$C.V = \frac{\dagger_m}{\overline{R_m}}$$

Where,

$\overline{R_m}$ = Average rate of return on market

\dagger_m = Standard deviation of market

vi) Covariance

Covariance is a statistical measure of the relationship between two random variables. A positive value for covariance indicated that the securities' returns tend to move in the same direction. A negative covariance indicates a tendency for the returns to offset one another. A relatively small or zero value for the covariance indicated that there is little or no relationship between return for two securities.

$$\text{CoV}(R_j R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1}$$

Where,

$$\text{CoV}(R_j R_m) = \text{Covariance of stock } j \text{ and market}$$

vii) Correlation

Correlation is a statistical concept measuring the extent to which two variable tend to move together. Correlation coefficient lies between -1 and +1. A value of -1 represents perfect negative correlation, and a value of +1 represents perfect positive correlation. If correlation coefficient is zero, it means there is no relationship between two variables. If the assets are perfectly positively correlated, no risk can be reduced by making the portfolio of such assets. If the assets have perfectly negative correlation, the minimum risk of the portfolio of these assets is zero meaning it is possible to create a risk less portfolio by perfectly negatively correlated assets. If the correlation is less than 1, risk reduction is possible by making the portfolio. (Dahal: 2003)

$$P_{jm} = \frac{\text{CoV}(R_j R_m)}{\sigma_j \sigma_m}$$

Where,

$$P_{jm} = \text{Correlation between stock } j \text{ and market}$$

$$\text{CoV}(R_j R_m) = \text{Covariance between stock } j \text{ and market}$$

Viii) Beta Coefficient

The beta coefficient (S_j) is issued to measure non-diversifiable risk. It is an index of the degree of movement of an asset's return in response to a change in the market return.

For calculating beta coefficient using capital asset pricing model is given below:

$$S_j = \frac{CoV(R_j R_m)}{Var(R_m)}$$

Where,

S_j = Beta coefficient of stock j.

$CoV(R_j R_m)$ = Covariance of returns of asset j with market

$Var(R_m)$ = Variance of return for market portfolio or individual assets.

Individual stocks can be classified as aggressive or defensive or average on the basis of beta coefficient.

<u>Beta coefficient</u>	<u>Stock classification</u>	<u>Degree of risk</u>
Less than 1	Defensive stock	less risky than the market
Exactly 1	Average stock	equally risky as the market
Greater than 1	Aggressive stock	more risky than the market

ix) Portfolio Return and Risk

a. Portfolio Return

The portfolio average rate of return is the weighed average of the average returns of the individual assets in the portfolio. The weights are the proportion of the investor's wealth invested in each asset.

$$\text{Portfolio Return } (R_p) = X_1 r_1 + X_2 r_2 + X_3 r_3$$

Here X_1 , X_2 and X_3 represent the investment proportion in asset 1, 2 and 3 respectively. Likewise r_1 , r_2 , and r_3 represent the return of assets 1, 2 and 3 respectively.

b. Portfolio Risk

Portfolio risk is a function of the proportions invested in the components, the riskiness of the components and correlation of returns on the component securities. It is measured by standard deviation and calculated by using following formula.

For the portfolio consisting two assets A and B:

$$\sigma_p = \sqrt{w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + 2w_A w_B \text{COV}_{AB}}$$

Where,

σ_p	=	standard deviation of portfolio return
σ_A	=	standard deviation of stock A
σ_B	=	standard deviation of stock B
W_A	=	Weight for stock A
W_B	=	Weight for stock B
COV_{AB}	=	Covariance of returns between A and B

For the portfolio consisting three assets A, B & C

$$\sigma_p = \sqrt{w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + w_C^2 \sigma_C^2 + 2w_A w_B \text{Cov}_{AB} + 2w_B w_C \text{Cov}_{BC} + 2w_A w_C \text{COV}_{AC}}$$

Where,

σ_p	=	standard deviation of portfolio return
σ_A	=	standard deviation of stock A
σ_B	=	standard deviation of stock B
σ_C	=	standard deviation of stock C
W_A	=	Weight for stock A
W_B	=	Weight for stock B
W_C	=	Weight for stock C
COV_{AB}	=	Covariance of returns between A and B
COV_{BC}	=	Covariance of returns between B and C
COV_{AC}	=	Covariance of returns between A and C

x) Minimum Risk Portfolio

It is the portfolio with the lowest level of risk in the efficient frontier. It is also called risk minimizing weight or optimal weight. In two stock portfolios, the optimal weight to invest in stock A and stock B are calculated as follows.

$$W_A = \frac{\sigma_B^2 - \text{Cov}(R_A R_B)}{\sigma_A^2 \sigma_B^2 - 2\text{Cov}(R_A R_B)}$$

xi) Portfolio Performance Measure

The Sharpe Performance Measure is one performance measure that has been developed to evaluate a portfolio's performance considering both returns and risk simultaneously. It is defined by equation below:

$$Sp = \frac{\text{Risk premium}}{\text{Total Risk}} = \frac{r_i - R_f}{\sigma_p}$$

Where,

S_p = Sharp's index of portfolio performance for portfolio i

r_i = Average returns from portfolio i

σ = Standard deviation of returns for portfolio i

R_f = Risk free rate of return

CHAPTER- IV

DATA PRESENTATION AND ANALYSIS

This chapter deals with the data presented in analyzed form with explanation. It consists of two different sections (i) Security Market and Sector Analysis (ii) Portfolio Analysis and portfolio performance measure. First part deals with the analysis of market situation and investment environment of Nepalese Security Market and analysis of different sectors of investment within the security market. Second part deals with analyzing the individual asset's, expected return and risk structure. Details data of MPS and dividend of each bank and NEPSE index of each sector and market is presented and their interpretation and analysis is done. The analysis of data consists of organizing, tabulating and assessing financial and statistical result. Different tables and diagrams are drawn to make the result more simple and understandable.

4.1 SECONDARY DATA ANALYSIS

Security Market and Sector Analysis

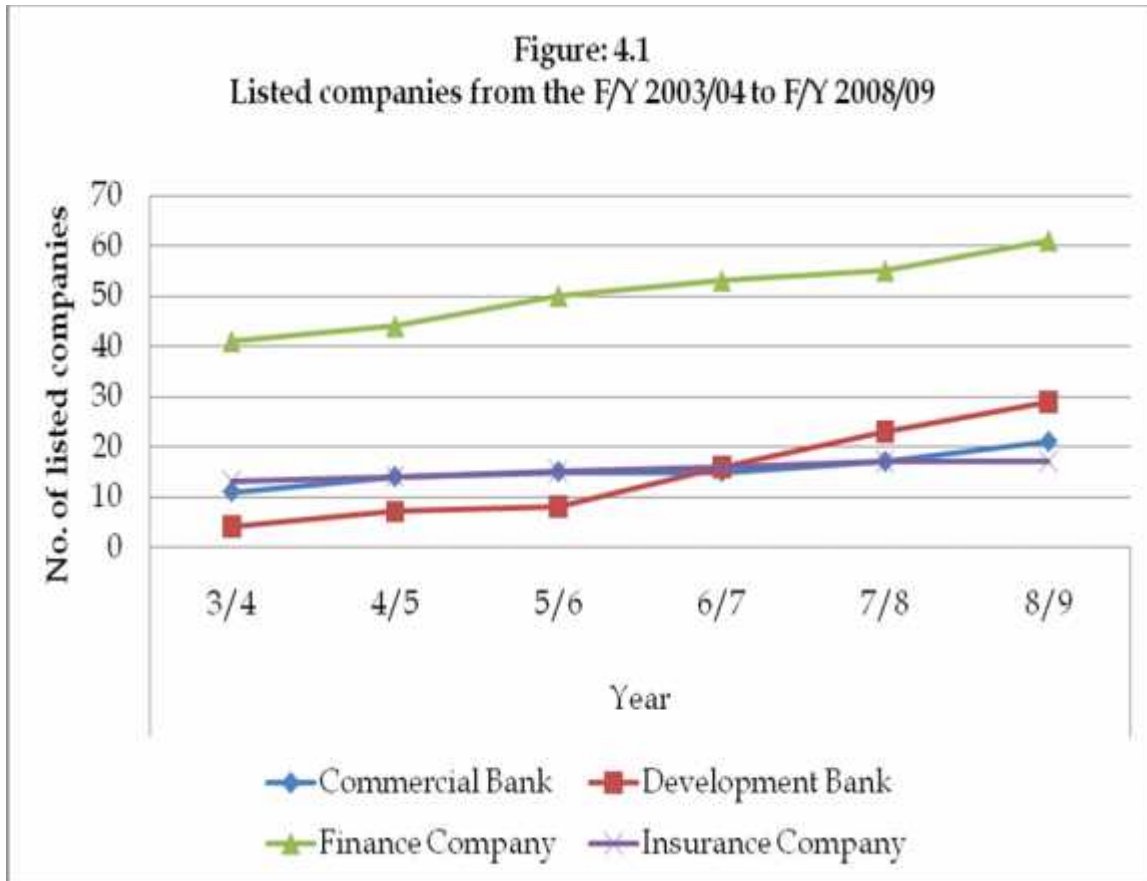
4.1.1 Listing of Securities

Table 4.1
Listed companies from the FY 2003/04 to end of FY 2008/09

Sector	Year					
	03/04	04/05	05/06	06/07	07/08	08/09
Commercial Bank	11	14	15	15	17	21
Development Bank	4	7	8	16	23	29
Finance Company	41	44	50	53	55	61
Insurance Company	13	14	15	16	17	17
Total	69	79	88	100	112	128

(Source: Annual Report SEBON)

Table 4.1 presents the number of listed companies from FY 2003/04 to 2008/09 and composition of no. of companies representing different industry wise sector. It was seen that total number of listed companies of four sectors went on increasing from FY 2003/04 to 2008/09.



Commercial banks, Development banks, Finance companies & Insurance sector, all these sectors are in increasing trend. Among these four sectors, Development Banks is the sector where more listing had been increased (i.e. 4 to 29). After Finance company, increment of listed Finance companies stand second (from 41 to 61), Commercial bank stand third (from 11 to 21) then only Insurance company (from 13 to 17).

4.1.2 Paid up value

Table 4.2

Paid up values from FY 2003/04 to FY 2008/09 (Rs. In Million)

Sector	Year					
	03/04	04/05	05/06	06/07	07/08	08/09
Comm. Banks	4856.16	6987.34	8522.73	9281.90	14667.3	24757.87
Dev. Banks	627.88	669.48	816.91	1630.90	2322.70	5101.17
Finance Company	1798.63	2009.89	2564.81	3100.20	4317.30	7100.90
Insurance Company	1084.15	1228.00	1256.7	1286.70	1669.70	1997.75
Total	8366.82	10894.71	13161.65	15299.70	22977.0	38957.69

(Source: Annual Report SEBON)

Paid up value of different sectors from FY 2003/04 to 2008/09 is presented in table 4.2. From the trend of total paid up value it was observed that growth of paid up value was more uniform during FY 2003/04 to 2004/05. After FY 2004/05 there was leap in growth of total paid up value until FY 2006/07. There after it was high growth in total paid up value.

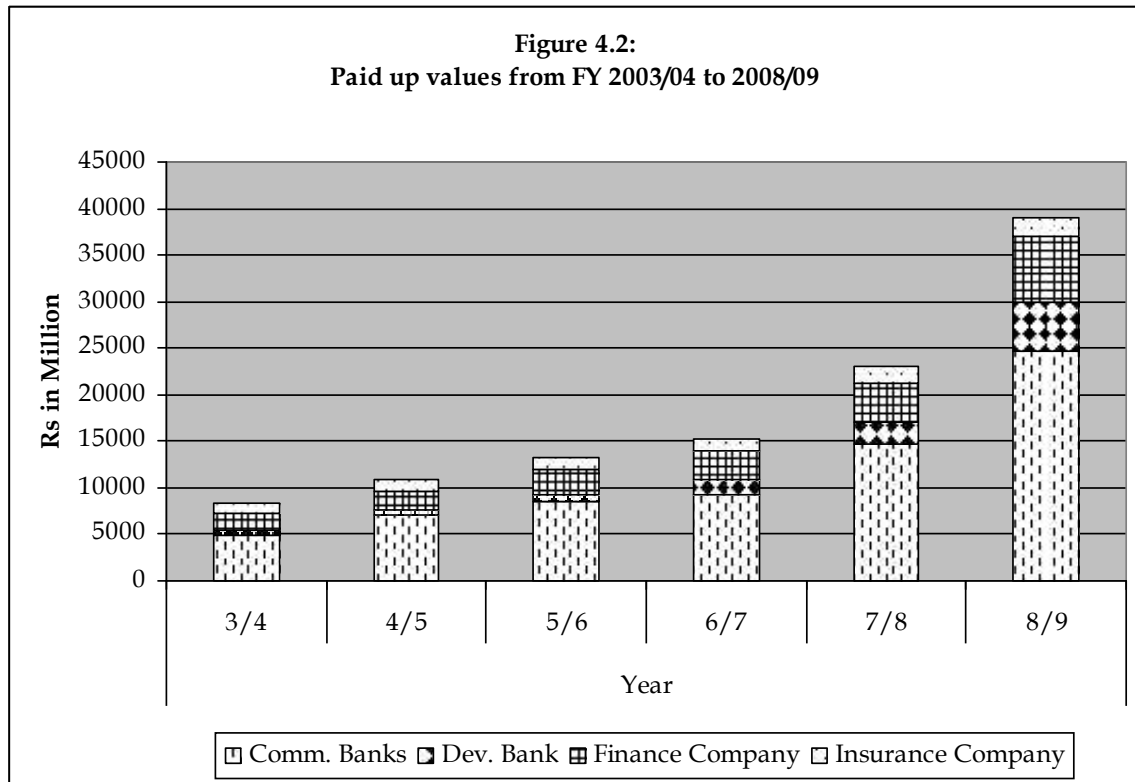


Fig. 4.2 presents sector wise proportion of four sectors total paid up value in each year. It is observed that commercial bank's contribute the highest proportion among all. In FY 2008/09, 63.55% of total paid up value is contributed by commercial bank. After commercial bank finance company came in the second position. Development bank came in third place. There was small increment of insurance companies and it came in last position.

4.1.3 Annual Turnover

Table 4.3
Annual Turnover from FY 2003/04 to FY 2008/09 (Rs. In Million)

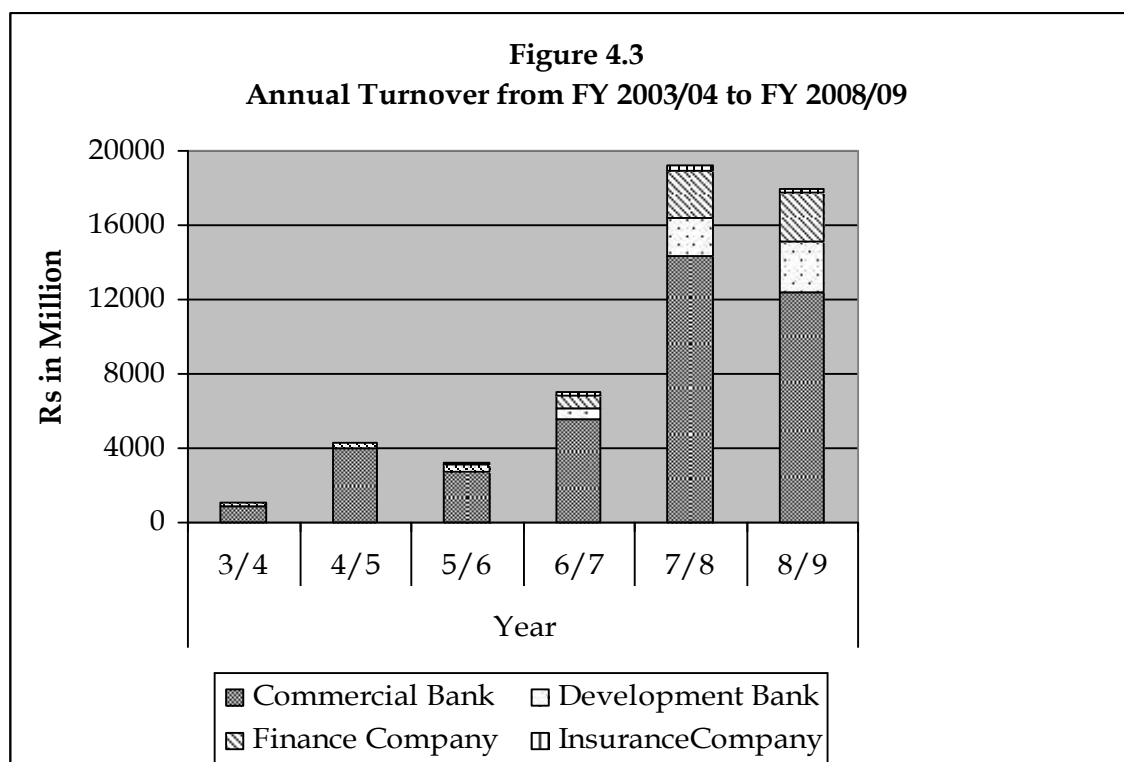
Sectors	Year					
	03/04	04/05	05/06	06/07	07/08	08/09
Commercial Bank	863.41	4021.83	2696.28	5563.50	14351.00	12406.45
Development Bank	32.33	22.01	82.76	577.50	2075.20	2740.36
Finance Company	165.09	216.37	305.85	713.60	2518.50	2615.40
Insurance Company	36.86	67.62	129.90	205.00	264.90	212.80
Total	1097.69	4327.83	3214.79	7059.60	19209.60	17975.01

(Source: Annual Report SEBON)

From table 4.3, it is observed that from F/Y 2003/04 to 2007/08 total annual turnover in increasing trend expect FY 2005/06. There was high increment in annual turnover during FY 2006/07 to 2007/08. It was tremendously increment in annual turnover of FY 2007/08 and reached to Rs. 19209.60 million. But in 2008/09 it decreased and reached to Rs. 17975.01 million.

Figure 4.3 shows the sector wise comparison of annual turnover. Among the total annual turnover of four sectors, the contribution of commercial bank was higher. In the tremendous rise in total annual turnover in FY 2007/08 annual turnover of commercial bank played a key role. Almost 75 % of total annual turnover was contributed by commercial banks alone. In FY 2005/06, annual turnover of commercial went down. This reason led decrease in total annual turnover although there was increment in other sectors annual turnover. Since from all years observation large part of total annual turnover are covered by commercial bank, it is easy to state that in every movement of total annual turnover there is significant contribution of commercial bank sector. After FY 2005/06 tremendous growth was observed in total annual turnover except FY 2008/09. But this time contribution was also of development bank, finance

company and other sector on the growth of total annual turnover. In FY 2008/09 high decrement of annual turnover of commercial banks led decrease in total annual turnover.



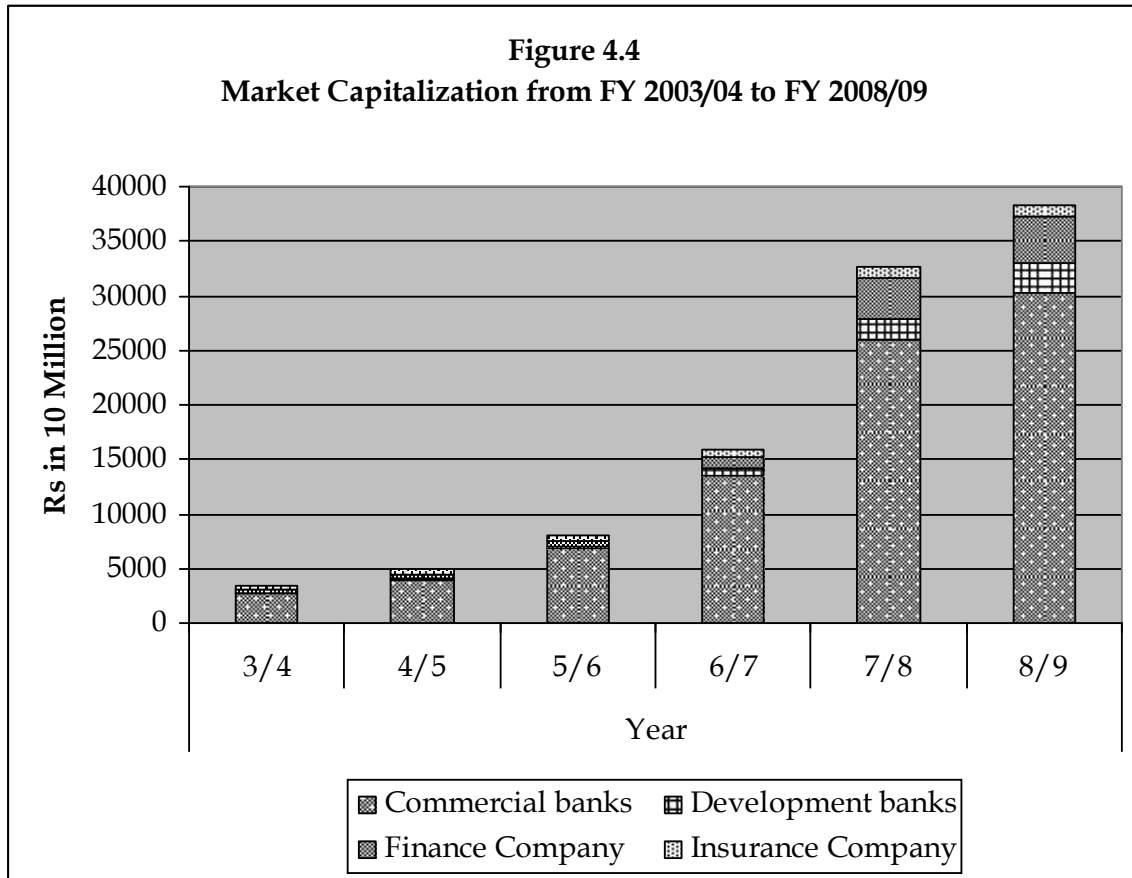
4.1.4 Market Capitalization

Table 4.4
Market Capitalization from FY 2003/04 to end of FY 2008/09 (Rs. In 10 Million)

Sectors	Year					
	03/04	04/05	05/06	06/07	07/08	08/09
Comm. Bank	2714.74	4011.99	6869.44	13558.84	25995.53	30221.93
Dev. Bank	79.68	105.01	157.74	601.06	1799.78	2713.79
Finance Company	291.17	366.61	500.00	988.93	3767.44	4300.71
Insurance Company	254.93	396.61	495.22	805.98	1124.14	1053.75
Total	3340.52	4880.22	8022.40	15954.81	32686.89	38290.18

(Source: Annual Report SEBON)

Table and figure 4.4 presents the sector wise comparison of Market Capitalization. From table 4.4 it is observed that there was increasing trend of total market capitalization from Rs. 3340.52 Corer in FY 2003/04 to Rs. 38290.18 Corer in FY 2008/09. From figure 4.4 it is observed that, among four sectors, commercial bank sector contribute large portion of total market capitalization. Hence changes in commercial bank market capitalization have significance influence on total market capitalization.



By the observation of past 6 years data from FY 2003/04 to 2008/09 it can be pointed out that proportion of commercial bank's market capitalization stood on an average of almost 80% of total market capitalization of four sectors. This provides the clue among four sectors, that market share of commercial bank is very high in NEPSE and this sector is important for the investor. After commercial bank, finance company has second largest shares in total market capitalization. During FY 2003/04 to FY 2006/07, insurance companies took third position but after that market capitalization of development bank was higher than that of insurance companies.

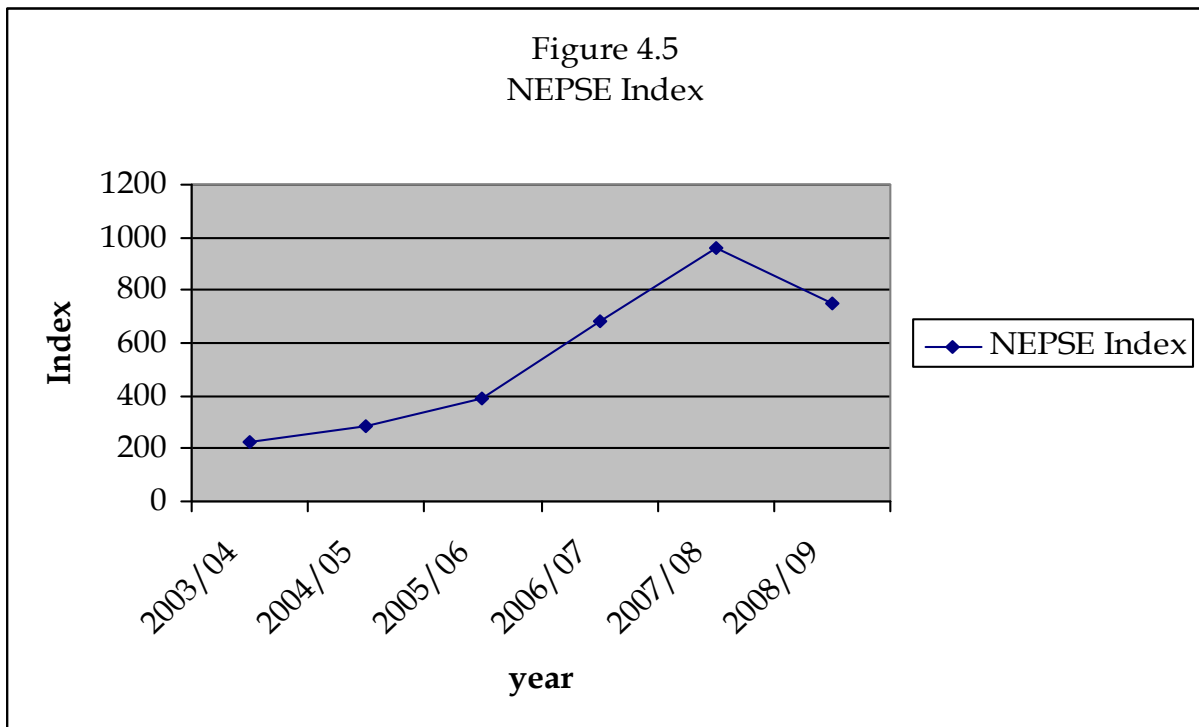
4.1.5 Price Index

Table 4.5
Price Index from FY 2003/04 to FY 2008/09.

Sectors	Year					
	03/04	04/05	05/06	06/07	07/08	08/09
Commercial Bank	231.97	340.64	437.49	789.21	985.65	780.87
Development Bank	190.03	237.86	294.40	539.66	1285.89	772.56
Finance Company	195.99	228.39	261.37	471.82	1152.74	697.61
Insurance Company	237.62	320.24	381.25	612.46	817.25	656.41
NEPSE Index	222.04	286.67	386.83	683.95	963.36	749.10

(Source: Annual Report SEBON)

Table 4.5 presents the NEPSE Index and the index of different sector differentiated according to types of industry. Figure 4.5 shows the NEPSE Index from FY 2003/04 to FY 2008/09. From the table and figure it could be noted that NEPSE is in rising trend from FY 2003/04 to FY 2007/08. There is high increment in NEPSE after FY 2005/06. NEPSE noted 222.04 in FY 2003/04 reached to 963.36 in FY 2007/08. But in FY 2008/09 it is decreased than 2007/08 and reached to 749.10, which is 214.26 points less than FY 2007/08.



4.2 PORTFOLIO ANALYSIS

The portfolio is a combination of different investment assets. The portfolio would be able to reduce unsystematic or diversifiable risk. To analyze the portfolio risk and returns, the commercial banks, development banks, finance companies and insurance companies are categorized into four groups. Firstly portfolio of Sample Company within sector is formed. Then portfolios between different sectors are performed.

For finding two assets portfolio risk and return, it is calculated the optimal weight for minimum risk. For finding three assets portfolio weight of stock are taken randomly.

The portfolio returns of the companies is the weighted average returns of the investment in different stock. The sum of weight must be 100%.

Analysis have shown that many Nepalese private investor placed their entire wealth in single asset or investment, If they construct a portfolio or group or investment in such kind of assets, which are negatively correlated. They can reduce unsystematic risk without losing their return. Therefore, we need to extend our analysis of risk and return to portfolio context.

4.2.1 Return and Risk and Other input data

Table 4.6
Average Rate of Returns, Variance, SD and CV of overall Market, Commercial Banking Index, Development Banking Index, Finance Companies Index, Insurance Companies Index

	Average Rate of Return	Variance	Standard Deviation	C.V.
NEPSE	31.89%	12.61%	35.51%	1.114
Commercial Banking Index	31.96%	13.53%	36.78%	1.151
Development Banking Index	46.12%	45.54%	67.49%	1.463
Finance Companies Index	43.27%	49.98%	70.70%	1.634
Insurance Companies Index	25.65%	8.67%	29.44%	1.148

(Source: Annex III and IV)

Table 4.7
Risk and Return Statistics of Securities including Beta Value

	Companies	Sector	E(R _i)	Var(R _i)	σ _i	CV	β _i
HBL	Himalayan Bank Ltd.	Comm. bank	41.86%	7.32%	27.06%	.646	.658
EBL	Everest Bank Ltd.	Comm. bank	67.57%	25.73%	50.72%	.751	1.367
NIB	Nepal Investment Bank Ltd,	Comm. Bank	47.13%	54.34%	73.72%	1.564	1.436
ACEDBL	Ace Development Bank Ltd.	Deve. Bank	52.06%	29.04%	53.89%	1.035	.943
NUBL	Nirdhan Utthan Bank Ltd.	Deve. Bank	41.39%	3.25%	18.03%	.436	-.234
GFCL	Goodwill Finance Co. Ltd.	Finance company	59.37%	81.26%	90.15%	1.518	.828
GFL	Gorkha Finance Ltd.	Finance company	40.93%	9.93%	31.51%	.770	-.160
MLFL	Mahalaxmi Finance Ltd.	Finance company	92.80%	145.50%	120.62%	1.300	1.734
EICL	Everest Insurance Company Ltd.	Insurance company	8.31%	2.75%	16.60%	1.996	.019
HGICL	Himalayan General Insurance Co. Ltd.	Insurance company	53.95%	134.22%	115.85%	2.147	2.496
PICL	Premier Insurance Co. Ltd.	Insurance company	64.25%	65.66%	81.03%	1.261	1.724

(Source: Annex II and V)

4.2.2. Portfolio Analysis when only Commercial Banks are included.

Table 4.8
Portfolio Risk and Returns between Commercial Banks

Portfolio	Weight of Stocks			Portfolio return(Rp)	Portfolio Risk(σ)	C.V.	Ranking
	HBL	EBL	NIB				
I	0	0	1	47.13%	73.71%	1.564	15 th
II	0	1	0	67.57%	50.72%	.751	4 th
III	1	0	0	41.86%	27.06%	.646	1 st
IV	1.90	-.09	0	18.72%	14.25%	.761	6 th
V	0	.72	.28	64.51%	49.95%	.774	8 th
VI	1.02	0	-.02	41.75%	27.65%	.662	2 nd
VII	.50	.50	0	54.71%	38.57%	.705	3 rd
VIII	.50	0	.50	44.50%	44.16%	.992	14 th
IX	0	.50	.50	57.35%	54.85%	.956	12 th
X	.25	.25	.50	50.92%	49.38%	.970	13 th
XI	.25	.50	.25	56.03%	44.33%	.791	9 th
XII	.50	.25	.25	49.60%	38.34%	.773	7 th
XIII	.34	.33	.33	52.08%	43.30%	.831	11 th
XIV	.40	.30	.30	51.15%	41.40%	.809	10 th
XV	.10	.80	.10	62.96%	47.52%	.755	5 th

(Source: Table No. 4.7)

Here in table 4.8 different portfolios has been created combining different commercial banks including single stock investment also. There are fifteen portfolios shown in above table. Three are three single assets investment, six are two assets portfolio and remaining six are three assets portfolios in different proportions. The risk and return of the portfolios are different and can't be select one best portfolio on these banks, so coefficient of variation are calculated which measures the portfolio risk per unit return. Thus a best portfolio can be selected.

Analysing the single assets portfolio, that is investing in single stocks, the Portfolio III is seen best with the comparison to portfolio I & II. On basis of CV it seems the best among all fifteen portfolios. In spite of least return of among three, it is best because it has least risk per unit on return that means CV of HBL is least among three. Comparing I & II, II dominates portfolio I because it has higher return and least risk than that of I. Comparing portfolio II and III, portfolio II has higher return than that of portfolio III but it can't be chose because of higher risk than III. Hence among all three portfolios, the portfolio III can be chosen.

On analysing two assets portfolio, Portfolio VI has least CV among all portfolios. Hence, the portfolio VI is better investment than other five portfolios IV, V, VII, VIII, X the portfolio. Therefore, Portfolio VI is best among all two assets portfolio and it is selected. After this portfolio VII came in second position which CV is .705.

For three assets portfolios, the portfolio XV has higher return (62.96%) among all six portfolios. The risk of portfolio XV is lower than portfolio X. So, the Portfolio XV dominates the portfolio X. While comparing portfolio XI, XII, XIII, XIV and XV, the CV of XV is least among all, so it is best among all. Hence portfolio XV is selected among all three assets portfolio.

For the overall study, the coefficient of variation of portfolio III (single assets investment) is least i.e. .646 among all fifteen portfolios. That's why it is least risky assets for single unit of return. Hence investors can invest 100% in Himalayan Bank Ltd. for better performance. Secondly they can invest 1.02% in Himalayan Bank Ltd, -.02% in Nepal Investment Bank Ltd. The negative proportion of investment tells us that the stocks equal to 2% in Nepal Investment Bank should sell the short and 102% should invest in Himalayan Bank Ltd. They can also invest 50% in Everest Bank Ltd and 50% in Himalayan Bank Ltd. as it is stand in third position.

It could be seen that while making two or three assets portfolio, investing large proportion in HBL and small portion in remaining two significantly reduces the risk without significant reduction in return.

4.2.3 Portfolio Analysis when only Development Banks are included

Table 4.9
Portfolio Return and Risk between development banks

Portfolio	Weight of stocks		Portfolio return(Rp)	Portfolio Risk(σ)	C.V.	Ranking
	ACEDBL	NUBL				
I	0	1	41.39%	18.03%	.436	5 th
II	1	0	52.06%	53.89%	1.035	12 th
III	.50	.50	46.73%	26.33%	.564	7 th
IV	.15	.85	43.00%	15.56%	.362	1 st
V	.25	.75	44.06%	16.70%	.379	3 rd
VI	.75	.25	49.39%	39.60%	.802	10 th
VII	.40	.60	45.66%	21.73%	.476	6 th
VIII	.60	.40	47.79%	31.43%	.658	8 th
IX	.30	.70	44.91%	18.03%	.404	4 th
X	.70	.30	48.86%	36.83%	.754	9 th
XI	.20	.80	43.52%	15.85%	.364	2 nd
XII	.80	.20	49.93%	42.41%	.850	11 th

(Source: Table No. 4.7)

Different portfolios by combining development banks in different proportion are shown in table 4.9. The single asset investment has also shown to find out that whether it is better to invest in portfolios or in single assets. There are twelve portfolios are formed. The first two are single asset investment and rest ten are two assets portfolio.

The investment only in ACEDBL provides 52.06% return and NUBL provides 41.39%. Risk on ACEDBL is 53.89% and on NUBL is 18.03%. In such situation we can't find that which one is dominant and need to calculate the coefficient of variation for comparison. Between ACEDBL and NUBL CV of NUBL is least that's why for single asset investment NUBL seen well.

Comparing portfolios of combining ACEDBL and NUBL, the portfolio return of XII is higher among all but it can not be said best because risk and return of different portfolio are different. So we calculate the CV. The portfolio IV which CV's is .362 is least among all ten portfolios. Hence, it is selected as best portfolio among two assets portfolios.

For the overall study investing 15% in ACEDBL and 85 % in NUBL will be best portfolio because it has least CV among twelve portfolios. Investing 20% in ACEDBL and 80% in NUBL will stand in second position and investing 25% in ACEDBL and 75% in NUBL stand in third position.

Furthermore, it is seen that investing large proportion in NUBL stock significantly reduces the risk without significant reduction in return.

4.2.4 Portfolio Analysis when only Finance Companies are included

Table 4.10
Portfolio Return and Risk between Finance Companies

Portfolio	Weight of Stocks			Portfolio return(Rp)	Portfolio Risk(σ)	C.V.	Ranking
	GFCL	GFL	MLFL				
I	0	0	1	92.80%	120.62%	1.300	12 th
II	0	1	0	40.93%	31.51%	.770	4 th
III	1	0	0	59.37%	90.15%	1.518	14 th
IV	.20	.80	0	44.62%	23.70%	.531	1 st
V	0	.97	.03	47.15%	26.90%	.570	3 rd
VI	2.37	0	-1.37	13.57%	70.00%	5.157	15 th
VII	.50	.50	0	50.15%	40.70%	.812	5 th
VIII	.50	0	.50	76.09%	104.45%	1.373	13 th
IX	0	.50	.50	66.87%	57.28%	.857	7 th
X	.25	.25	.50	71.48%	79.81%	1.117	10 th
XI	.25	.50	.25	58.51%	48.60%	.831	6 th
XII	.50	.25	.25	63.12%	71.84%	1.138	11 th
XIII	.34	.33	.33	64.32%	66.64%	1.036	8 th
XIV	.40	.30	.30	63.87%	68.54%	1.073	9 th
XV	.10	.80	.10	47.96%	26.06%	.543	2 nd

(Source: Table No. 4.7)

Table 4.10 shows the different portfolios formed by combining different finance companies in different proportion. The single asset investment has also shown in the table to find out that whether it is better to invest in portfolios or in single assets. There are fifteen portfolios shown in the table. The first three are single asset investment, next six are two assets portfolios and remaining six are three assets portfolios. CV is also calculated for choosing best one on the basis of risk per unit return.

In case of single assets investment, the return of I is highest among I, II and III. Comparing I and II it can be seen that I is higher in return but its risk is high. On the basis of CV, II is best as it is less than that of I. While comparing I and III, portfolio I is best because its risk per unit return is lower than that of III. Among all three single assets investment, portfolio II is selected as its lowest

CV. On analysing two assets portfolios, among Portfolio IV, V, VI, VII, VIII, IX the better performance is of IV which would provide 44.62% return on least CV of .531. Hence, portfolio IV is selected among six portfolios. Secondly we can select portfolio V which provides 47.15% return with .570 CV.

When we go through three assets portfolios, Portfolio X has higher return of 79.81 but it can't be best because its CV is not least among all. From calculation of CV of all six portfolios it can be seen that CV of portfolio XV is least. Hence it is selected as best portfolio among three assets portfolio.

While observing overall study, CV in two assets portfolio is least among all fifteen portfolios. In this case, the investors can invest in two finance companies. They are GFCL and GFL. The proportion of the investment is 20% in GFCL and 80% in GFL. Selecting these portfolio investors can earn return of 44.620% bearing 23.70% risk.

For making investment in three assets portfolio, investing large proportion in GFL and small proportion in remaining two significantly reduces the risk without significant reduction in return.

4.2.5 Portfolio Analysis when only Insurance Companies are included

Table 4.11
Portfolio Return & Risk between Insurance Companies

Portfolio	Weight of Stocks			Portfolio return(Rp)	Portfolio Risk(σ)	C.V.	Ranking
	EICL	HGICL	PICL				
I	0	0	1	64.25%	81.03%	1.261	4 th
II	0	1	0	53.95%	115.85%	2.147	14 th
III	1	0	0	8.31%	16.60%	1.997	13 th
IV	1.02	-.02	0	7.40%	16.75%	2.265	15 th
V	0	-.12	1.12	65.49%	80.54%	1.230	3 rd
VI	.91	0	.09	13.34%	14.78%	1.108	2 nd
VII	.50	.50	0	31.13%	59.70%	1.918	11 th
VIII	.50	0	.50	36.28%	38.97%	1.074	1 st
IX	0	.50	.50	59.10%	92.79%	1.570	9 th
X	.25	.25	.50	47.69%	65.14%	1.366	5 th
XI	.25	.50	.25	45.11%	74.91%	1.661	10 th
XII	.50	.25	.25	33.71%	46.86%	1.390	6 th
XIII	.34	.33	.33	41.83%	61.31%	1.466	8 th
XIV	.40	.30	.30	38.78%	55.85%	1.440	7 th
XV	.10	.80	.10	50.62%	99.26%	1.961	12 th

(Source: Table No. 4.7)

Table shows 4.11 portfolio combinations of different Insurance Company's in different proportions. There are altogether fifteen portfolios constructed. First three are single asset investment. Next six are two assets portfolio and remaining six are three assets portfolio.

Analysing single asset investment, return on I is highest. I dominated II because it has higher return and less risk than portfolio II. Comparing I and III, I has higher return of 64.25% and risk of 81.03% whereas return of III is only 8.31% and risk is 16.60%. If one want to invest his all wealth in single asset it would be best to invest in PICL.

For two assets portfolio, Portfolio V is highest in terms of return (65.49%) among all. While comparing risk it is difficult to say which one is best. So we move through CV, portfolio VIII has least CV of 1.074 with return of 36.28%. As risk per unit return of portfolio is least it seems best investment among two assets portfolio.

While go through three assets portfolio, Portfolio XV is highest in return as well as risk so it can't be selected. Among portfolio X, XI, XII, XIII & XIV the portfolio X has highest return. While analysing risk of all, it would be difficult to say which is best, so we should go through CV. As CV of the portfolio X is least among all, it is the best investment selection of three assets portfolio.

If we observed overall study it is seen that investing in two assets portfolio is best for investor. Investing 50% in EICL and 50% in PICL shows least CV. After selecting this best portfolio investor would earn the return of 36.28% with risk of 38.97%. Second best investment is investing 91% in EICL and 9% in PICL. The third best portfolio for investor is -12% in HGICL and 112% in PICL. The negative proportion of investment tells us that the stocks equal to 12% in HGICL should sell the short and 112% should invest in PICL.

For two assets and three assets portfolio, it seems that investing large proportion in EICL and rest in other two will reduce risk with out significant reduction in return.

4.2.6 Portfolio Analysis when Commercial banks and development banks are included

Table 4.12
Portfolio Return and Risk between commercial and development Banks

Portfolio	Weight of investment		Portfolio return(Rp)	Portfolio Risk(σ)	CV	Ranking
	Comm. Banks	Deve. Banks				
I	1	0	31.96%	36.78%	1.151	1 st
II	0	1	46.12%	67.49%	1.463	10 th
III	1.47	-.47	25.30%	31.52%	1.246	5 th
IV	.70	.30	36.21%	44.33%	1.224	4 th
V	.30	.70	41.87%	56.97%	1.361	7 th
VI	.80	.20	34.79%	41.57%	1.195	2 nd
VII	.20	.80	43.29%	60.41%	1.396	9 th
VIII	.75	.25	35.50%	42.92%	1.209	3 rd
IX	.25	.75	42.58%	58.68%	1.378	8 th
X	.50	.50	39.04%	50.39%	1.291	6 th

(Source: Table No. 4.6)

Above table shows the portfolio return and risk formed by combining commercial banks and development banks in different proportions. Commercial banking sector has 31.96% returns and development banking sector has 46.12% returns. Whereas risk of commercial banking sector is 36.78% and development banking sector is 67.49%. From this data it is difficult to say which one is better. So we calculate CV. CV of commercial banking sector is 1.151 and CV of development banking sector is 1.463. This data indicate that risk per unit return of commercial banking sector is smaller than development banking sector. So if an investor want to make entire investment in one industry, commercial banking sector is best.

While analysing two sector portfolios, portfolio III has minimum risk i.e. 31.52% but it is not right choice. While comparing portfolio III, IV, V, VI, VII, VIII, IX & X on the basis of CV, it is seen that CV of VI is least among all i.e. 1.195. Therefore portfolio VI is the best portfolio combining commercial and development banks. For this investor should invest 80% in commercial banks and 20% in development banks.

Comparing all ten portfolios it is seen that it would be better to invest only in commercial sector because its CV is least among all. So, it is suggested to invest in Commercial sector only for better performance.

For making portfolio between commercial and development bank, investing larger proportion in commercial banks and lower proportion in development banks significantly reduces the risk without significant reduction in return.

4.2.7 Portfolio Analysis between Commercial banks and Finance Companies

Table 4.13
Portfolio Return and Risk between Commercial banks and Finance Companies

Portfolio	Weight of investment		Portfolio return(Rp)	Portfolio Risk(σ)	CV	Ranking
	Comm. Banks	Finance Companies				
I	1	0	31.96%	36.78%	1.151	1 st
II	0	1	43.27%	70.70%	1.634	10 th
III	1.12	-.12	30.60%	36.24%	1.184	3 rd
IV	.70	.30	35.35%	42.72%	1.208	5 th
V	.30	.70	39.88%	57.30%	1.437	7 th
VI	.80	.20	34.22%	40.10%	1.172	2 nd
VII	.20	.80	41.01%	61.61%	1.502	9 th
VIII	.75	.25	34.79%	41.34%	1.188	4 th
IX	.25	.75	40.44%	59.43%	1.470	8 th
X	.50	.50	37.62%	49.35%	1.312	6 th

(Source: Table No. 4.6)

From table 4.13 it is seen that ten portfolios have been formed combining Commercial banking sector and Finance sector. It is better to invest in commercial banking sector than finance sector because its CV is least. If one wants to make his entire investment in only one sector, it is suggested to invest in commercial banking sector.

While comparing two assets portfolio between commercial banking sector and finance company sector, Portfolio VI has least risk among all and it provides return of 34.22%. CV of Portfolio is least among all, so it best. Hence investors are suggested to invest in portfolio III for better performance. For this one have to invest 80% in commercial banks and 20% in development banks.

Among the ten portfolios formed, portfolio VI has least CV, so it is best for investment. Investing 80% in commercial banking sector and 20% in finance company banking sector is best.

It is seen that investing larger proportion in commercial banking sector and lower proportion in finance companies sector significantly reduces the risk without significant reduction in return.

4.2.8 Portfolio Analysis between Commercial bank and Insurance companies

Table 4.14
Portfolio Return & Risk between Commercial bank and Insurance Companies

Portfolio	Weight of investment		Portfolio return(Rp)	Portfolio Risk(σ)	CV	Ranking
	Comm. Banks	Insurance Companies				
I	1	0	31.96%	36.78%	1.151	9 th
II	0	1	25.65%	29.44%	1.148	8 th
III	-1.44	2.44	16.56%	24.64%	1.488	10 th
IV	.70	.30	30.07%	34.36%	1.143	5 th
V	.30	.70	27.54%	31.40%	1.1402	2 nd
VI	.80	.20	30.70%	35.15%	1.145	7 th
VII	.20	.80	26.91%	30.72%	1.142	4 th
VIII	.75	.25	30.38%	34.75%	1.144	6 th
IX	.25	.75	27.23%	31.06%	1.1408	3 rd
X	.50	.50	28.81%	32.84%	1.140	1 st

(Source: Table No. 4.6)

Here are formed ten portfolios combining commercial banking sector and insurance sector. If one wants to invest all his wealth in only one sector, it would be better to invest in insurance companies sector because it has least CV than commercial banking sector. So it suggested investing in insurance companies.

Comparing commercial banking sector and insurance sector, portfolio X seems best among other. Portfolio X stands with 28.81% return and 32.84% risk. AS its CV is least among eight portfolios, it is best investment selection, which suggests investing fifty-fifty in both sectors. Secondly investing 30% in Commercial banks and 70% in insurance companies seems good.

Among all ten portfolios CV of portfolio X is least. Hence it is best to invest 50% in commercial banking sector and 50% in insurance companies.

While making portfolios between commercial banking sector and insurance companies sectors, it is best to invest larger proportion in insurance companies sector and lower proportion in commercial banking sector.

4.2.9 Portfolio Analysis between Development banks and Finance Companies

Table 4.15
Portfolio Return and Risk between Development and Finance Companies

Portfolio	Weight of investment		Portfolio return(Rp)	Portfolio Risk(σ)	CV	Ranking
	Deve. Banks	Finance Companies				
I	1	0	46.12%	67.49%	1.463	2 nd
II	0	1	43.27%	70.70%	1.634	10 th
III	6.20	-5.20	60.94%	59.19%	.971	1 st
IV	.70	.30	45.27%	68.41%	1.511	5 th
V	.30	.70	44.13%	69.69%	1.580	7 th
VI	.80	.20	45.55%	68.10%	1.495	3 rd
VII	.20	.80	43.84%	70.03%	1.597	9 th
VIII	.75	.25	45.41%	68.25%	1.503	4 th
IX	.25	.75	43.98%	69.86%	1.588	8 th
X	.50	.50	44.70%	69.04%	1.545	6 th

(Source: Table No. 4.6)

Table 4.15 shows different portfolios are formed combining development banking sector and finance companies sector in different proportions. While making investment in only one sector it is best to invest in development banks because its return is higher and risk is also lower than finance companies. So, it suggested investing in development banks.

Observing two assets portfolio, it is best to invest 620% in development banking sector and -5.20% in finance companies sector. Here negative proportion of investment tells us that the stocks equal to 520% in finance companies should sell the short and 620% should invest in development banks, because among eight portfolios formed it is seen that CV of portfolio III is least. Investor would have 60.94% return bearing 59.19% risk from this portfolio.

Among ten portfolios, III stands at first position on the basis of CV. Hence investing -520% in finance companies and 620% in development banks is best.

Investing larger proportion in development banking sector and lower proportion in finance companies to formed two assets portfolio will significantly reduces the risk without significant reduction in return.

4.2.10 Portfolio Analysis between Development Banks and Insurance Companies

Table 4.16
Portfolio Return and Risk between Development Banks Insurance Companies

Portfolio	Weight of investment		Portfolio return(Rp)	Portfolio Risk(σ)	CV	Ranking
	Deve. Banks	Insurance Companies				
I	1	0	46.12%	67.49%	1.463	10 th
II	0	1	25.65%	29.44%	1.148	1 st
III	-.24	1.24	20.74%	26.85%	1.295	6 th
IV	.70	.30	39.98%	54.10%	1.353	7 th
V	.30	.70	31.79%	38.10%	1.198	4 th
VI	.80	.20	42.03%	58.48%	1.392	9 th
VII	.20	.80	29.74%	34.74%	1.168	2 nd
VIII	.75	.25	41.00%	56.28%	1.373	8 th
IX	.25	.75	30.77%	36.37%	1.182	3 rd
X	.50	.50	35.89%	45.71%	1.274	5 th

(Source: Table No. 4.6)

The results presented in above table 4.16 shows the portfolio risk and return that is formed by combining development banking sector and insurance companies sector in different proportions. The investment in individual sector provides return on development banks is higher than insurance but its risk also higher than insurance sector. So when we through CV, it seems better to invest in insurance companies sector because it has least CV. Hence investors are suggested to invest in insurance companies sector.

On analysing two assets portfolio, it is seen that investing 20% in development banking sector and 80% in insurance companies sector is best. This portfolio would generate 29.74% return bearing 34.74% risk. Secondly investor can choose portfolio IX which suggests investing 25% in development banks and 75% in insurance companies.

Among ten portfolios investing 100% in insurance sector seems best as it has least CV of 1.148. After investing in insurance sector investors can earn the return of 25.65% bearing risk of 29.44%.

For making portfolio between two sectors, it would be best to invest larger weight in insurance sector and lower in development banking sector reduces the risk without significant reduction in return.

4.2.11 Portfolio Analysis between Finance Companies and Insurance Companies

Table 4.17
Portfolio Return & Risk between Finance Companies & Insurance Companies

Portfolio	Weight of investment		Portfolio return(Rp)	Portfolio Risk(σ)	CV	Ranking
	Finance Com.	Insurance Com.				
I	1	0	43.27%	70.70%	1.634	10 th
II	0	1	25.65%	29.44%	1.148	1 st
III	-.20	1.20	22.13%	27.45%	1.241	4 th
IV	.70	.30	37.98%	55.99%	1.474	7 th
V	.30	.70	30.94%	38.50%	1.244	5 th
VI	.80	.20	39.74%	60.80%	1.530	9 th
VII	.20	.80	29.17%	34.89%	1.196	2 nd
VIII	.75	.25	38.87%	58.38%	1.502	8 th
IX	.25	.75	30.06%	36.64%	1.219	3 rd
X	.50	.50	34.46%	46.79%	1.358	6 th

(Source: Table No. 4.6)

Table 4.17 shows ten portfolios formed combining different proportion of finance companies sector and insurance companies sector. Investing in insurance sector is best than that of finance sector because its risk per unit return is least. Hence investors are suggested to invest in insurance sector rather than finance sector.

For analysing two assets portfolio, it is observed that investing 20% in finance sector and 80% in insurance is best portfolio. It would generate 29.17% return in risk of 34.89%.

For overall study it is seen that investing 100% in insurance companies is best. After investing in it investor would earn return of 25.65% bearing risk of 29.44%.

For making two assets portfolio it would be better to invest larger proportion in insurance sector and lower proportion in finance sector. This would reduce risk without significant reduction in return.

4.3 MEASUREMENT OF PORTFOLIO PERFORMANCE

Risk and return both have to consider when considering a portfolio performance. William F. Sharpe, Jack Treynor and Dr. Michael C. Jensen developed different indices of measuring the portfolio performance. For the simplicity of the study, here the Sharpe portfolio performance is to be considered.

The sharpe portfolio performance measure is based on the capital market line (CML) and total risk, which makes it more suitable for evaluating portfolios rather than individual assets. Ranking of each portfolio using the Sharpe measure has been presented below.

4.3.1 Commercial Banks

Table 4.18
Sharpe Index of Portfolio Performance Measure for Commercial Banks

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	47.13%	73.71%	8.71%	0.521	15 th
II	67.57%	50.72%	8.71%	1.160	4 th
III	41.86%	27.06%	8.71%	1.225	1 st
IV	18.72%	14.25%	8.71%	0.702	14 th
V	64.51%	49.95%	8.71%	1.117	6 th
VI	41.75%	27.65%	8.71%	1.195	2 nd
VII	54.71%	38.57%	8.71%	1.193	3 rd
VIII	44.50%	44.16%	8.71%	0.810	13 th
IX	57.35%	54.85%	8.71%	0.887	11 th
X	50.92%	49.38%	8.71%	0.855	12 th
XI	56.03%	44.33%	8.71%	1.067	7 th
XII	49.60%	38.34%	8.71%	1.067	8 th
XIII	52.08%	43.30%	8.71%	1.002	10 th
XIV	51.15%	41.40%	8.71%	1.025	9 th
XV	62.96%	47.52%	8.71%	1.142	5 th

(Source: Table No. 4.7)

From above table it has been the Sharpe index of portfolio performance measure of portfolio III is seemed highest among all and it is best portfolio. It consists of 100% investment in HBL's stock. Next better portfolio is VI which consists of 102% investment in HBL, -.02% in NIB. The worst portfolio is I it consists 100% investment in NIB.

4.3.2. Development Banks

Table 4.19
Sharpe Index of Portfolio Performance Measure for Development Banks

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	41.39%	18.03%	8.71%	1.813	5 th
II	52.06%	53.89%	8.71%	0.804	12 th
III	46.73%	26.33%	8.71%	1.444	7 th
IV	43.00%	15.56%	8.71%	2.204	1 st
V	44.06%	16.70%	8.71%	2.117	3 rd
VI	49.39%	39.60%	8.71%	1.027	10 th
VII	45.66%	21.73%	8.71%	1.700	6 th
VIII	47.79%	31.43%	8.71%	1.243	8 th
IX	44.91%	18.03%	8.71%	2.008	4 th
X	48.86%	36.83%	8.71%	1.090	9 th
XI	43.52%	15.85%	8.71%	2.196	2 nd
XII	49.93%	42.41%	8.71%	0.972	11 th

(Source: Table No. 4.7)

The result presented in above table shows the Sharpe performance index of twelve portfolios; among them the maximum index is of portfolio IV for which tells to invest 15% in ACEDBL and 85% in NUBL. The portfolio XI is in second position and indicates to invest 20% in ACEDBL and 80% in NUBL. Among all Portfolio II having index of .804 is worst. It consists of investment 100% in ACEDBL.

4.3.3. Finance Companies

Table 4.20
Sharpe Index of Portfolio Performance Measure for Finance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	92.80%	120.62%	8.71%	0.697	12 th
II	40.93%	31.51%	8.71%	1.023	5 th
III	59.37%	90.15%	8.71%	0.562	14 th
IV	44.62%	23.70%	8.71%	1.515	1 st
V	47.15%	26.90%	8.71%	1.429	3 rd
VI	13.57%	70.00%	8.71%	0.069	15 th
VII	50.15%	40.70%	8.71%	1.018	6 th
VIII	76.09%	104.45%	8.71%	0.645	13 th
IX	66.87%	57.28%	8.71%	1.015	7 th
X	71.48%	79.81%	8.71%	0.786	10 th
XI	58.51%	48.60%	8.71%	1.025	4 th
XII	63.12%	71.84%	8.71%	0.757	11 th
XIII	64.32%	66.64%	8.71%	0.834	8 th
XIV	63.87%	68.54%	8.71%	0.805	9 th
XV	47.96%	26.06%	8.71%	1.506	2 nd

(Source: Table No. 4.7)

Sharpe index shows that among fifteen portfolios, maximum index is of portfolio IV and it is best investment. It consists of 20% investment in GFCL and 80% in GFL. Second highest index is of portfolio XV and it suggests investing 10% in GFCL, 80% in GFL and 10% in MLFL. Third highest index is of portfolio V and it consists of 97% investment in GFL and 3% in MLFL.

4.3.4. Insurance Companies

Table 21
Sharpe Index of Portfolio Performance Measure for Insurance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	64.25%	81.03%	8.71%	0.685	3 rd
II	53.95%	115.85%	8.71%	0.391	11 th
III	8.31%	16.60%	8.71%	-0.024	14 th
IV	7.40%	16.75%	8.71%	-0.078	15 th
V	65.49%	80.54%	8.71%	0.705	2 nd
VI	13.34%	14.78%	8.71%	0.313	13 th
VII	31.13%	59.70%	8.71%	0.376	12 th
VIII	36.28%	38.97%	8.71%	0.707	1 st
IX	59.10%	92.79%	8.71%	0.543	6 th
X	47.69%	65.14%	8.71%	0.598	5 th
XI	45.11%	74.91%	8.71%	0.486	10 th
XII	33.71%	46.86%	8.71%	0.534	9 th
XIII	41.83%	61.31%	8.71%	0.540	7 th
XIV	38.78%	55.85%	8.71%	0.538	8 th
XV	64.25%	81.03%	8.71%	0.685	4 th

(Source: Table No. 4.7)

Table 21 presented Sharpe index of Insurance Companies of fifteen different portfolios. Portfolio VIII stand first and portfolio V stands second their corresponding values are .707, .705 respectively. The portfolio IV has the least index among all. The first index of portfolio VIII suggested investing 50% in EICL and 50% of in PICL.

4.3.5. Commercial and Development Banks

Table 22
Sharpe Index of Portfolio Performance Measure for Commercial and Development Banks

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	31.96%	36.78%	8.71%	0.632	1 st
II	46.12%	67.49%	8.71%	0.554	9 th
III	25.30%	31.52%	8.71%	0.526	10 th
IV	36.21%	44.33%	8.71%	0.620	4 th
V	41.87%	56.97%	8.71%	0.582	6 th
VI	34.79%	41.57%	8.71%	0.627	2 nd
VII	43.29%	60.41%	8.71%	0.572	8 th
VIII	35.50%	42.92%	8.71%	0.624	3 rd
IX	42.58%	58.68%	8.71%	0.577	7 th
X	39.04%	50.39%	8.71%	0.602	5 th

(Source: Table No. 4.6)

From table 22 it can be seen that highest index is of portfolio I, second highest is of VI and third highest is of VIII. Their index value is .632, .627, and .624 respectively. It would be better to invest 100% in commercial banks. Portfolio VI is consisting of 80% investment in commercial banking sector and 20% in development banking sector. The portfolio VIII is telling us to invest 75% in commercial banking sector and 25% in development banks. The worst portfolio having least index i.e. .526 is portfolio III.

4.3.6. Commercial and Finance Companies

Table 23
Sharpe Index of Portfolio Performance Measure for Commercial Banks and Finance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	31.96%	36.78%	8.71%	0.632	2 nd
II	43.27%	70.70%	8.71%	0.489	10 th
III	30.60%	36.24%	8.71%	0.604	5 th
IV	35.35%	42.72%	8.71%	0.624	4 th
V	39.88%	57.30%	8.71%	0.544	7 th
VI	34.22%	40.10%	8.71%	0.636	1 st
VII	41.01%	61.61%	8.71%	0.524	9 th
VIII	34.79%	41.34%	8.71%	0.631	3 rd
IX	40.44%	59.43%	8.71%	0.534	8 th
X	37.62%	49.35%	8.71%	0.586	6 th

(Source: Table No. 4.6)

Above table shows top three index of portfolio performance are .636, .632 & .631 and they are of portfolio VI, I and VIII respectively. Portfolio VI having highest index involves the investing 80% in commercial banking sector and 20% in finance sector. Second highest portfolio is I and it suggests investing 100% in commercial banking sector. Third highest portfolio is VIII and it consists of 75% in commercial banks and 25% in finance companies. Sharpe performance measure gives suggestion not to invest 100% in finance companies because it is worst among all.

4.3.7. Commercial Banks and Insurance Companies

Table 4.24
Sharpe Index of Portfolio Performance Measure for Commercial Banks and Insurance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	31.96%	36.78%	8.71%	0.632	1 st
II	25.65%	29.44%	8.71%	0.575	9 th
III	16.56%	24.64%	8.71%	0.319	10 th
IV	30.07%	34.36%	8.71%	0.622	4 th
V	27.54%	31.40%	8.71%	0.600	6 th
VI	30.70%	35.15%	8.71%	0.626	2 nd
VII	26.91%	30.72%	8.71%	0.592	8 th
VIII	30.38%	34.75%	8.71%	0.624	3 rd
IX	27.23%	31.06%	8.71%	0.596	7 th
X	28.81%	32.84%	8.71%	0.612	5 th

(Source: Table No. 4.6)

The result presented in the table 4.24 shows the Sharpe performance index of commercial and insurance sector consisting ten portfolios. Among this portfolio maximum index is of portfolio I for which the corresponding value is .632. This portfolio involves investing 100% in commercial banking sector. After this Portfolio VI is good and it consist of 80% investment in commercial banking sector and 20% in Insurance sector. The worst portfolio is III which corresponding value is .319.

4.3.8. Development Banks and Finance Companies

Table 4.25
Sharpe Index of Portfolio Performance Measure for Development Banks and Finance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	46.12%	67.49%	8.71%	0.554	2 nd
II	43.27%	70.70%	8.71%	0.489	10 th
III	60.94%	59.19%	8.71%	0.882	1 st
IV	45.27%	68.41%	8.71%	0.534	5 th
V	44.13%	69.69%	8.71%	0.508	7 th
VI	45.55%	68.10%	8.71%	0.541	3 rd
VII	43.84%	70.03%	8.71%	0.502	9 th
VIII	45.41%	68.25%	8.71%	0.538	4 th
IX	43.98%	69.86%	8.71%	0.505	8 th
X	44.70%	69.04%	8.71%	0.521	6 th

(Source: Table No. 4.6)

From above table it is seen that index of portfolio III is highest and it is the best portfolio among all and it involves investing 620% in development banks short selling 520% stock of finance companies. Portfolio I and VI comes in second and third position. I consists of investing 100% in development banking sector. Portfolio VI involves investing 80% in development banks and 20% in finance companies. Among fifteen portfolios II is worst and it involves investing 100% in finance companies.

4.3.9. Development Banks and Insurance Companies

Table 4.26
Sharpe Index of Portfolio Performance Measure for Development Banks and Insurance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	46.12%	67.49%	8.71%	0.554	9 th
II	25.65%	29.44%	8.71%	0.575	6 th
III	20.74%	26.85%	8.71%	0.448	10 th
IV	39.98%	54.10%	8.71%	0.578	5 th
V	31.79%	38.10%	8.71%	0.606	2 nd
VI	42.03%	58.48%	8.71%	0.570	8 th
VII	29.74%	34.74%	8.71%	0.605	3 rd
VIII	41.00%	56.28%	8.71%	0.574	7 th
IX	30.77%	36.37%	8.71%	0.607	1 st
X	35.89%	45.71%	8.71%	0.595	4 th

(Source: Table No. 4.6)

The data presented in table 4.26 shows highest index of portfolio IX and it consists 25% investment in development banks and 75% in Insurance sector. So, according to Sharpe Index model it is the best investment among all. Secondly it shows portfolio V and it consists 30% investment in development banking sector and 70% in insurance sector. The portfolio III consist of -24% investment in development banking sector and 124% investment in insurance companies is worst among all.

4.3.10. Finance Companies and Insurance Companies

Table 4.27
Sharpe Index of Portfolio Performance Measure for Finance Companies and Insurance Companies

Portfolio	R_p	σ_p	R_f	$sp = \frac{(R_p - R_f)}{\sigma_p}$	Ranks
I	43.27%	70.70%	8.71%	0.489	10 th
II	25.65%	29.44%	8.71%	0.575	4 th
III	22.13%	27.45%	8.71%	0.489	9 th
IV	37.98%	55.99%	8.71%	0.523	6 th
V	30.94%	38.50%	8.71%	0.577	3 rd
VI	39.74%	60.80%	8.71%	0.510	8 th
VII	29.17%	34.89%	8.71%	0.586	1 st
VIII	38.87%	58.38%	8.71%	0.517	7 th
IX	30.06%	36.64%	8.71%	0.583	2 nd
X	34.46%	46.79%	8.71%	0.550	5 th

(Source: Table No. 4.6)

It is seen that portfolio VII consisting 20% investment in finance companies and 80% investment in insurance companies is best investment selection because of its high index. The portfolio IX stands after VII and it tells to invest 25% in finance sector and 75% in insurance sector. After IX the portfolio V stands and it involves 30% investing in finance sector and 70% in insurance sector. It would be great loss to invest in portfolio I because it has least index and it consists of investing 100% in finance companies sector.

4.4. ANALYSIS OF PRIMARY DATA

For collecting primary data survey method has been used and 30 investors are taken as sample. The opinion and views expressed by them are presented as follows.

Opinion about Nepalese Stock Market

The investors were asked about Nepalese stock market whether it is rising up or not. Their responses have been shown below.

Table 4.28
Opinion about Nepalese Stock Market

S. No.	Option	Respondents	Percentage (%)
1	Yes	13	43%
2	No	15	50%
3	Don't know	2	7%
	Total	30	100

(Source: Questionnaire, question No. 1)

From above table it is seen that 50% respondents replied that Nepalese stock market is not rising. 43% replies that it is rising and 7% said that they don't know about that. Larger number of investors up to date information about stock market because it is decreasing now days.

Preference Sector for Investment

They were asked about their interested sector for investment and their views about this are presented in following table.

Table 4.29
Preference sector for investment

S. No.	Option	Respondents	Percentage (%)
1	Commercial banks	20	66
2	Development banks	3	10
3	Finance companies	2	7
4	Insurance companies	1	3
5	Hotel	0	0
6	Manufacturing & Processing Comp.	2	7
7	Trading	0	0
8	Other	2	7
	Total	30	100

(Source: Questionnaire, question No. 2)

Out of 30 respondents, 66% replied that commercial banking sector is beneficial for investment. Rest 10% are in favour of development banks, 7% in finance companies, 3% in insurance companies, 7% in manufacturing companies, and 7% in other sectors. From this it is seen that Nepalese investors give more preference in commercial banks.

Factors to be analyzed before Investment

Investors were asked which factor they analyzed before making investment in stock. Their responses are presented as follows.

Table 4.30
Factors to be analyzed before investment

S. No.	Option	Respondents	Percentage (%)
1	Risk	2	7%
2	Return	4	13%
3	Risk and return	24	80%
4	Rumour	0	0
	Total	30	100

(Source: Questionnaire, question No. 3)

From above table it is seen that 80% respondents analyzed both risk & return before making investment. Rest 13% & 7% analyzed return only and risk only respectively.

Preference in Investment

To find out investors preference in investment they were asked in what type security you want to invest less profitable but safe or risky but more profitable. They replied as follows.

Table 4.31
Preference in Investment

S. No.	Option	Respondents	Percentage (%)
1	Less profitable but safe	14	47%
2	Risky but more profitable	16	53%
3	Total	30	100

(Source: Questionnaire, question No. 4)

From above table it observed that 47% respondents want to invest in that type of securities which are less profitable but safe. So, they are risk-averse investors. Rest 53% are risk taker investors because they take risk for more profit.

Portfolio Behaviour of Investors

In question that whether they know about portfolio or not they replied as follows.

Table 4.32
Portfolio behaviour of investors

S. No.	Option	Respondents	Percentage (%)
1	Yes	22	73%
2	No	8	27%
3	Total	30	100

(Source: Questionnaire, question No. 5)

Out of 30 respondents 73% replied that they are well known about portfolio investment and rest 27% are investing without knowledge of portfolio investment. This results show that larger number of investors diversifying their fund in two or more than two securities to reduce risk and increase their return.

Basis of Selecting Securities for Portfolio

Investors were asked in which basis you select securities for portfolio. The responses are as follows.

Table 4.33
Basis of selecting securities for portfolio

S. No.	Option	Respondents	Percentage (%)
1	Return and Risk(Fundamental Analysis)	13	59%
2	Heavy Trading (Technical Analysis)	3	14%
3	Share Price(Higher/Lower)	6	27%
	Total	22	100

(Source: Questionnaire, question No. 6)

Above data shows that out of total number of respondents creating portfolio, 59% create their portfolio on the basis of risk and return of securities, 27% take base of share price whether it is increasing trend or not and rest 14% create portfolio on the basis of heavy trading of the stocks.

Types of Investor

To know about what type of investors they are on the basis of strategy they adopt, they were asked whether they are active or passive and their replies are shown in table 4.34

Table 4.34
Types of Investor

S. No.	Option	Respondents	Percentage (%)
1	Active	15	50%
2	Passive	15	50%
	Total	30	100

(Source: Questionnaire, question No. 7)

Out of 30 respondents 15 (50%) replied that they adopt active strategy & 50% adopt passive strategy. This shows that 50% can do hard work in stock market and take advantage from opportunities.

Objective of Portfolio

Further they were asked about their objective for creating portfolio and they replied as follows:

Table 4.35
Objective of Portfolio

S. No.	Option	Respondents	Percentage (%)
1	To minimize risk	12	55%
2	To maximize return	6	27%
3	For liquidity	4	18%
	Total	22	100

(Source: Questionnaire, question No. 8)

Out of 22 respondents who create portfolio, 55% replied that they create portfolio to minimize risk, 27% replied that their main objective is to maximize return & rest 18% replied for liquidity.

Investors Choice While Making Portfolio

Investors were asked that which sector they select while making their portfolio. The responses are shown in table 4.36

Table 4.36
Investor's choice while making portfolio

S. No.	Option	Respondents	Percentage (%)
1	Portfolio with commercial banks	17	77%
2	Portfolio with development banks	3	13%
3	Portfolio with finance companies	1	5%
4	Portfolio with insurance companies	0	0
5	Hydro power companies	1	5%
	Total	22	100

(Source: Questionnaire, question No. 9)

From above table it is seen that 77% investor select portfolio with commercial banks, 13% select development banks, 5% select finance companies & 5% select hydro power companies. From the survey it is seen that most of the investor's attractive sector is commercial bank.

4.5 MAJOR FINDINGS OF THE STUDY

4.5.1 Based on secondary Data Analysis

Security market and sector analysis

Listing of Securities

From the listing of securities in NEPSE in the period of FY 2003/04 to 2008/09, it found that investment opportunities in four sectors are in increasing trend. It was only 69 in the end of FY 2003/04 and reached to 128 in FY 2008/09. Among these four sectors, Finance company is the sector where more companies are listed (i.e.61).

Paid up Value

In the study period paid up value of listed companies in total is in increasing trend. Among four sectors commercial banking sector has mobilized more capital in public than other sector. It shows that commercial banking sector has provided more opportunities for investors to invest.

Annual Turnover

Annual Turnover is in increasing trend. From all years observation large part of total annual turnover of four sectors are covered by commercial bank, it is easy to state that in every movement of total annual turnover of four sectors there is significant contribution of commercial banking sector. This is all because of better performance of commercial banks.

Market Capitalization

Market Capitalization represents market share for the respective companies in the market. It is observed that there was increasing trend of total market capitalization of all four sectors. From FY 2003/04 to 2008/09 it can be pointed out that proportion of commercial bank's market capitalization stood on an average of almost 70% of total market capitalization. This provides the clue that market share of commercial bank is very high in NEPSE and this sector is important for the investor.

Price Index

From FY 2003/04 to FY 2007/08, it is seen that NEPSE Index is in increasing trend. It was only 222.04 in FY 2003/04 and reached to 963.36 in FY 2007/08. It shows investors favourable condition for investment. But it decreased in 2008/09 and reached to 749.10.

Market Return and Risk

The average rate of return on overall market NEPSE, commercial banking index, development banking index, finance companies index and insurance

companies index are 31.89, 31.96%, 46.12%, 43.27%, 25.65%, respectively. Likewise, the risk on corresponding market is 35.51%, 36.78%, 67.49%, 70.70%, 29.44% respectively. Comparing all sectors on the basis of CV Insurance companies sector is better because of lower CV.

Return and Risk of sampled companies

The share of Mahalaxmi Finance Ltd offers the highest average rate of return i.e. 92.80%. The share of EBL and PICL offer 67.57% and 64.25% return respectively. EICL has lowest rate of return of 8.31%. On the basis of average rate of return, the share of MLFL seems to be the best for investment.

By observing standard deviation of returns of companies, it is seen that EICL has lowest i.e. 16.60% and MLFL has highest 120.62%. It indicates that EICL is safe for investment and MLFL has highest risk for investment.

On the basis of CV, the shares of NUBL seem attractive among all with lowest CV of .436 because CV can depict the exact position of risk per unit of return. HGICL is most risky among all that is it has highest CV of 2.147.

Market Sensitivity of Stocks

The beta coefficient of EBL, NIB, MLFL, HGICL & PICL are greater than 1, so they are aggressive and riskier and volatile than market. The stocks of HBL, ACEDBL, NUBL, GFCL, GFL & EICL appeared to be defensive since their beta coefficients are less than 1 and are less volatile than the market as a whole. Among all stock HGICL is more risky as its beta coefficient is highest and the stock of NUBL is least risky among all.

Portfolio Analysis

Portfolio with commercial banks

Among fifteen portfolios constructed combining commercial banks in different proportion, Portfolio III is best for investment on the basis of CV. It consists of 100% investment in HBL. It provides 41.86% return bearing 27.06% risk. Highest CV of portfolio I suggests that not to invest 100% in NIBL.

Portfolio with development banks

Twelve different portfolios have been constructed combining development banks in different proportions. Among them Portfolio IV (15% investment in ACEDBL and 85% in NUBL) seems best. It will give investor return of 43.00% at risk of 15.56%. As greatest CV of portfolio II, 100% investment in ACEDBL is least attractive among all, which has 52.06% return at 53.89% risk.

Portfolio with finance companies

Among fifteen portfolios constructed combining finance companies in different proportions, investing 20% in GFCL and 80% in GFL which provides 44.62% return at 23.70% risk is best.

Portfolio with insurance companies

Among different portfolios constructed with combining insurance companies, portfolio VIII has least CV of 1.074 and it tells us investing 50% in EICL and 50% in PICL. After selecting this best portfolio investor would earn the return of 36.28% with risk of 38.97%.

Portfolio between commercial and development banks

From ten different portfolio constructed between commercial and development banking sector, it is seen that to invest in commercial sector only is best than combining these two sectors. Investing only in commercial sector will give return of 31.96% at risk of 36.78%. If investor wants to invest combining these two sectors it would be better to invest 80% in commercial banking sector and 20% in development banking sector. It provides 34.79% of return bearing risk of 41.57%. If one wants to invest in development sector only it would be worst investment among all because of least CV.

Portfolio between commercial banks and finance companies

It is seen best to invest 100% in commercial banks than combining these two sectors. If one want to invest combining these two sectors, it would be better to invest 80% in commercial banking sector and 20% in finance companies sector. It would generate 34.22% return at 40.10% risk. To invest only in finance companies sector would bear great loss to investors.

Portfolio between commercial banks and insurance companies

It would be best to invest fifty-fifty in commercial banking sector and insurance companies. It would provide 28.81% return bearing 32.84% risk.

Portfolio between development banks and finance companies

Among portfolios constructed between development banks and finance companies it seems that investing 620% in development banks by short selling 520% stock of finance companies is best on the basis of CV. Investing 100% in finance companies is worst investment among all.

Portfolio between development banks and insurance companies

From the study it is seen that investing 100% in insurance companies sector is best and it would have return 25.65% at risk of 29.44%. After this 20% investment in development bank and 80% investment in insurance companies

is better and it would have return 29.74% at 34.74% risk. Investing 100% in development banks is worst among all.

Portfolio between finance companies and insurance companies

Among the portfolio constructed between finance and insurance sector, it is observed that investing 100% in insurance sector would be best. From this investment investor would have 25.65% returns at 29.44% risk. Secondly investor can invest 20% in finance companies and 80% in insurance companies and it would give 29.17% return at 34.89% risk. Investing 100% in finance companies is worst among all.

Portfolio performance evaluation

Commercial banks

On the basis of Sharpe Index of portfolio performance measure, the portfolio consisting 100% investment in HBL stock is the highest value i.e. 1.225. Hence it is the best portfolio among different portfolios constructed between commercial banks. The least attractive portfolio is investing 100% in NIB stock.

Development banks

Investing 15% in ACEDBL and 85% in NUBL provides maximum risk premium for one unit risk. Hence it is best portfolio among all portfolios constructed with development banks. The least attractive portfolio is investing 100% in ACEDBL.

Finance companies

Maximum index (1.515) of portfolio with 20% investment in GFCL and 80% investment in GFL indicated that is best for investment among portfolios constructed with finance companies. Investing 237% in GFCL by short selling 137% stock of MLFL has least index of .069.

Insurance companies

Among the portfolios constructed with insurance companies, it is seen that investment of fifty -fifty in EICL and PICL is best. Investing 102% in EICL by short selling 2% stock of HGICL is worst investment among all.

Commercial and development banks

Investing 100% in commercial banking sector provides the maximum risk premium for one unit risk. Hence it is best investment among all portfolios combining commercial and development banking sector. The worst portfolio is 147% investment in commercial banks by short selling the 47% share of development banks.

Commercial banks and finance companies

Portfolio consisting 80% investment in commercial banking sector and 20% in finance companies sector is best among all portfolios constructed between commercial banking sector and finance companies sector. Investing 100% in finance companies is worst among all.

Commercial banks and insurance companies

As per Sharpe performance index investing 100% in commercial banking is best among portfolio constructed between commercial banking sector and insurance sector. After it 80% investment in commercial banking sector and 20% in Insurance sector would be beneficial for investor.

Development banks & finance companies

620% investment in development banks short selling 520% stock of finance companies is best as its highest index value. Investing 100% in finance companies is worst among all portfolios constructed between development banking sector & finance sector.

Development banks & Insurance companies

25% investment in development banks and 75% in Insurance sector has highest index, that's why it is best investment. -24% investment in development banking sector and 124% investment in insurance companies is worst among all.

Finance companies & Insurance companies

20% investment in finance companies and 80% investment in insurance companies is best investment selection because of its high index. Providing low risk premium investing 100% in finance companies is worst investment.

4.5.2 Major Finding from Primary Data

From the analysis of primary data, it is found that 50% investors think that the Nepalese stock market is rising up, 43% think that it is not rising and 7% are unknown about it.

Most of the investors show their interest in investing commercial banking sector. They think that commercial banking sector is beneficial for investment.

80% of selected investors analyzed both risk and return before making investment in securities. 13% analyzed return & 7% analyzed risk only.

Under the study, it is seen that 53% of investors invest in more profitable securities however there is high risk. They represent the aggressive investors or risk seeker investors. 47% of investors prefer safe securities however profit may be the less.

It is observed that most of Nepalese investors are well known about portfolio investment and they create portfolio.

Most of the investors who create portfolio or purchase shares of different companies select the securities for creating portfolio on the basis of return & risk (Fundamental Analysis).

From the study it is seen that number of passive and active investors are equal. 50% passive investors represents that they invest their wealth and hold for long time. However they have not sufficient profit in their securities. 50% are actively participating in buying and selling their securities in the market to make more profit.

Out of investors who create portfolio 55% say that they create portfolio with the objective of minimizing risk. 27% of investors create portfolio for maximizing return and remain 18% for liquidity.

From the field survey it is found that 77% of sample investors select commercial banking sectors for making portfolio. This shows the charming of commercial banks for investment.

CHAPTER- V

SUMMARY, CONCLUSION AND RECOMMENDATION

This Chapter summarizes the whole study. It draws the conclusion from the study and forwards recommendation to erase the weakness of common stock of concern companies, observed on the basis of major finding.

5.1. SUMMARY

Formally stock market development in Nepal started only after the establishment of the Securities Exchange Centre in 1976, which was later converted in Nepal Stock Exchange (NEPSE) in 1994. In Nepal availability of portfolio investment facilities is very limited. Only two mutual funds are being operated in the capital market on NIDC mutual fund and another Citizen Investment Fund. Specialized portfolio management consultancy service are lacking in Nepalese Capita Market. It has been widely felt that Nepalese capital market should promote different portfolios for better investment atmosphere. During the 1950s and 1960s Harry Markowitz, James Tobin, Jack Treynor, Bill Sharpe, and other showed that rational investors should ignore the investment characteristics of individual assets and focus instead on diversified portfolios. They proved that portfolios are more desirable than individual assets because portfolios can benefit from the risk reducing power of diversification that individual assets cannot obtain. Now investors are more attracted toward portfolio investment. Nepalese investor should go for the effective portfolio investment in present market condition for minimizing the risk and for secure investment. Hence there is need for study on how efficient portfolio should be computed which combination provides maximum return by reducing risk.

This research aims to examine the investment environment of common stock in securities market in Nepal. Its specific objectives include analyzing and evaluating different sectors of capital market, finding the possible efficient portfolio on different risk level and finally to analyze and suggest the investors for selecting efficient portfolio in Nepalese context. In the process of research descriptive and analytical design is used.

The research include total sample consist of 11 companies: 3 commercial banks, 2 development banks, 3 finance companies & 3 insurance companies. This study based on the fundamental analysis of recent six year historical data from FY 2003/04 to 2008/09 of sampled companies.

The study is based on secondary as well as primary data. Secondary data is collected through published annual/ trading reports of NEPSE, SEBON & NRB. Especially the official website of NEPSE and SEBON become the main source of secondary data. Primary data have been collected through questionnaire. While collecting the primary data the investors were contacted and interviewed as per requirement. Thirty investors were selected as sample for primary data. Hence the reliability, accuracy and validity of the research findings depend on samples.

5.2. CONCLUSION

From analysis of secondary and primary data following conclusion can be drawn.

- The numbers of investment opportunities for Nepalese investor are increasing year by year. There are increasing trend of investment opportunities in Commercial Banks, Development banks, Finance Companies, and Insurance Companies.
- From observing paid up value, annual turnover & market capitalization of different sector, commercial banking sector has high performance and it indicates that it is best for investment among all sectors.
- Considering the overall return and risk analysis of all sectors, shares of all commercial banks are attractive for investment. However HBL is most attractive and NUBL is least considering risk per unit of return.
- CV of Insurance Company's index is least among four sectors and it implies that Insurance Companies is best for investment among all.
- Among all stocks, the stock of HGICL is more risky as its beta coefficient is highest and the stock of NUBL is least risky.

- Making portfolio with development banks is best than with Commercial Banks, Finance Companies and Insurance Companies because of its least risk per unit of return. It also suggests investing larger proportion in NUBL and lower portion on ACEDBL for better performance. Portfolio with Insurance Companies is most risky for investors.
- Forming portfolio between Development Banking Sector & Finance Companies Sector is best for investment among portfolio between Commercial & Development Banking sector, Commercial & Finance Companies Sector, Commercial Banking Sector & Insurance Companies Sector, Development Banking Sector & Insurance Sector and Finance Sector & Insurance sector. Making larger portion investment in Development Banks and small portion in Finance Companies is best for investment. After this portfolio between Commercial Banks & Insurance Companies is better for investor. It also indicates to make large proportion investment in Insurance Companies and lower proportion in Commercial Banks. Portfolio between Development Banks and Commercial Banks is worst for investment.
- On the basis of Sharpe Index, portfolio with Development Banks is best for investor and portfolio with Insurance Companies is most risky. Like wise portfolio between Development Banking Sector and Finance Companies Sector is best among all. Portfolio between Development Banking Sector and Insurance Companies Sector is worst among all.
- From primary data analysis it is seen that most of the investors prefer to invest in Commercial Banking sector and most of the investors analyze risk and return before making investment in securities.
- Most of the investors choose the more return on investment however it is risky.
- Most of the investors create portfolio and most of the investors select securities on the basis of risk and return and most of their objective to create portfolio is to minimize risk.

- Most of the investors choose commercial banks for making their portfolio on investment.

5.3. RECOMMENDATION

On the basis of the analysis and findings of this study, following recommendation are suggested to overcome the weakness and inefficiency and to improve the present situation of the concern.

- Investors are recommended to make portfolio rather than investing all funds in individual assets. It is because investment upon single asset is more risky than the portfolio investment i.e. portfolio management reduces the degree of risk. So, the investors are suggested to diversify their investment with a well diversified portfolio. If possible, they should construct portfolios of perfectly negatively correlated assets.
- The portfolio with Development Banks with the weight of 15% investment in ACEDBL and 85% investment in NUBL is found to be the best. Sharpe portfolio performance evaluation also gives the same result. Hence, Nepalese investors who wish to create a well diversified portfolio are suggested to create a portfolio between these stocks by assigning the stated weights. While making portfolio with Development Banks they should invest larger proportion in NUBL and lower proportion in ACEDBL.
- The investors who want to diversify their funds between two sectors, they are recommended to invest larger proportion in Development Banking sector and small proportion in Finance Companies sector will form best portfolio.
- Before making investment investors have to up to date information of the market and the performance of the assets. Information regarding political, social and should also be considered before taking the investment decision.
- In current situation NEPSE has majority of assets comes form financial sector. Manufacturing and Service sectors are not able to perform well in the market which have created the adverse effect on the

diversification of the investment. Hence capital market should focus on the introducing different companies other than financial institution to create the opportunities to diversify the investment.

- Many investors are adopting passive investment strategy. They buy the securities and wait for dividend. To gain from the investment, they should actively participate.
- Nepalese capital market should promote many portfolio investment companies and portfolio management service which would help the investors for attaining secure investment and small investors having limited investing money could also gain benefit of portfolio diversification.
- The listed companies should publish their reports and information timely and correctly which will help to the investors to take the investment decision on their common stocks.
- Government should play a vital role to improve the securities market and to promote the investors.
- NEPSE needs to modernize the trading system. It should be terminal based, at least trading from five developed regions electronically. Investors are facing lack of right information, so it should make effective information channel.
- Securities Exchange Board Nepal should be stricter regarding rules and regulation in securities trading. SEBON seem to be more flexible towards corporations.

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Research Questionnaire

Dear Respondent,

I believe that you are the investor of the listed companies of Nepal Stock Exchange. I request you to fill up the attached questionnaire in order to collect the precious facts, views and opinions from your side, which will be helpful for facilitating the requirement of the partial fulfillment of the requirement of the MBS degree. The research topic is **Portfolio Analysis of Common Stock Investment** (with special reference to listed financial companies). The views and opinions expressed in this questionnaire will only be used for the research purpose and kept strictly confidential.

Your kind cooperation will be helpful to complete this research successfully.

Thank you.

Anita Sapkota
Researcher
Master of Business Studies (MBS)
Nepal Commerce Campus (TU)
New Baneshwor
July 2010

Research Questionnaire

1. What do you think about Nepalese Stock Market is it rising up?
 - a) Yes
 - b) No

2. Among the following available investment sector in Nepalese Stock Market, in your opinion which sector is beneficial for the investment?
 - a) Commercial Banks
 - b) Development Banks
 - c) Finance Companies
 - d) Insurance Companies
 - e) Hotels
 - f) Manufacturing & Processing Companies
 - g) Trading
 - h) Others

3. Before making investment in stock which factor would you analysis?
 - a) Risk
 - b) Return
 - c) Risk & Return
 - d) Rumour

4. Which type of securities would you prefer for invest?
 - a) Less Profitable but safe
 - b) Risky but more profitable

5. Do you know about portfolio investment?
 - a) Yes
 - b) No

6. In which basis do you select securities for portfolio?

- a) Return and risk (fundamental analysis)
 - b) Heavy trading (technical analysis)
 - c) Share Price (Higher/ Lower)
7. What type of investment strategy do you adopt for making investment in security?
- a) Active strategy
 - b) Passive strategy
8. What is your objective to create portfolio?
- a) To minimize risk
 - b) To maximize return
 - c) For liquidity
9. Which sector would you select while making your portfolio?
- a) Portfolio with Commercial banks
 - b) Portfolio with Development banks
 - c) Portfolio with Finance companies
 - d) Portfolio with Insurance companies
 - e) Portfolio with Others (mention)
10. If you have any suggestion and recommendation for Nepalese investors mention here.

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ANNEXES

Annex	Heading
I	Share Price information of different companies
II	Return, Standard Deviation, Variance and CV of different companies
III	Risk and Return of Market (NEPSE Index)
IV	Risk and Return of different sectors
V	Covariance, Correlation and Beta Coefficient between the return of stock and market.

Annex-I

Share Price Information of different companies

Himalayan Bank Ltd.				
Year	Closing Price	Dividend paid		
		Cash dividend	Stock dividend	total
2003/04	840	0	20	184
2004/05	920	11.5	20	231.50
2005/06	1100	30	5	118
2006/07	1760	15	15	312
2007/08	1980	25	20	377
2008/09	1760	12	31.56	567.45
Everest Bank Ltd.				
2003/04	680	20	0	20
2004/05	870	0	20	275.80
2005/06	1379	25	0	25
2006/07	2430	10	30	949.60
2007/08	3132	20	30	756.50
2008/09	2455	30	30	766.50
Nepal Investment Bank Ltd				
2003/04	940	15	0	15
2004/05	800	12.58	0	12.58
2005/06	1260	20	35.46	633.10
2006/07	1729	5	25	617.50
2007/08	2450	7.50	33.33	470.12
2008/09	1388	20	0	20
Ace Development Bank Ltd.				
2003/04	173	20	0	20
2004/05	251	0	0	0
2005/06	320	2.11	40	185.71
2006/07	459	5.26	0	5.26
2007/08	856	0	10	58.80
2008/09	588	5.50	0	5.50
Nirdhan Utthan Bank Ltd.				
2003/04	90	0	0	0
2004/05	100	4	10	14
2005/06	100	5	20	27
2006/07	110	8	10	21.40
2007/08	134	0	25	45.75
2008/09	183	11.05	10	29.35

Goodwill Finance Company Limited				
2003/04	180	0	0	0
2004/05	185	20	0	20
2005/06	185	10.53	0	10.53
2006/07	220	5.79	10	69.09
2007/08	633	0	10	6250
2008/09	625	7.6315	5	38.8815
Gorkha Finance Co. Ltd.				
2003/04	104	10	0	10
2004/05	108	10	0	10
2005/06	105	1.053	20	37.053
2006/07	180	0	0	0
2007/08	200	0	0	0
2008/09	308	0	15	46.20
Mahalaxmi Finance Ltd.				
2003/04	270	10	0	10
2004/05	264	10	20	62
2005/06	260	10	10	47.20
2006/07	372	1.12	21.21	253.73
2007/08	1191	0	20	238.20
2008/09	1191	24	0	24
Everest Insurance				
2003/04	350	0	0	0
2004/05	325	0	50	147.50
2005/06	295	0	0	0
2006/07	290	0	12.50	36.37
2007/08	291	0	0	0
2008/09	285	20	0	20
Himalayan General Insurance Co. Ltd.				
2003/04	175	0	0	0
2004/05	205	0	0	0
2005/06	189	0	0	0
2006/07	300	0	110	379.50
2007/08	345	5.26	0	5.26
2008/09	285	5.26	0	5.26
Premier Insurance Co. Ltd.				
2003/04	192	0	0	0
2004/05	210	0	0	0
2005/06	200	0	100	260
2006/07	260	0	100	300
2007/08	300	0	0	0
2008/09	190	2.76	52.38	102.28

Annex-II

Return, Standard Deviation, variance and CV of different companies

Himalayan Bank Ltd					
Year	Price	Dividend	Return (R_i)	R_i- R_i	(R_i- R_i)²
2003/04	840	184	-	-	-
2004/05	920	231.50	37.08%	-4.78%	.23%
2005/06	1100	118	32.39%	-9.47%	.90%
2006/07	1760	312	88.36%	46.50%	21.62%
2007/08	1980	377	33.92%	-7.94%	.63%
2008/09	1760	567.45	17.55	-24.31%	5.91%
		Total	209.31%	0%	29.29%
		Mean	41.86%	Var	7.32%
		SD	27.06%	CV	.646
Everest Bank Ltd.					
2003/04	680	20	-	-	-
2004/05	870	275.80	68.50%	.93%	-.0086%
2005/06	1379	25	61.38%	-6.19%	.38%
2006/07	2430	949.60	145.08%	77.51%	60.08%
2007/08	3132	756.50	60.02%	-7.55%	.57%
2008/09	2455	766.50	2.86%	-64.70	41.86%
		Total	337.83%	0%	102.90%
		Mean	67.57%	Var	25.73%
		SD	50.72%	CV	.751
Nepal Investment Bank Ltd.					
2003/04	940	15	-	-	-
2004/05	800	12.58	-13.56%	-60.69%	36.83%
2005/06	1260	633.10	136.64%	89.50%	80.11%
2006/07	1729	617.50	86.23%	39.10%	15.28%
2007/08	2450	470.12	68.89%	21.76%	4.73%
2008/09	1388	20	-42.53%	-89.67%	80.40%
		Total	235.67%	0%	217.35%
		Mean	47.13%	Var	54.34%
		SD	73.71%	CV	1.564
Ace Development Bank Ltd.					
2003/04	173	20	-	-	-
2004/05	251	0	45.09%	-6.97%	.49%
2005/06	320	185.71	101.48%	49.42%	24.42%

Year	Price	Dividend	Return (R _i)	R _i - R _i	(R _i - R _i) ²
2006/07	459	5.26	45.08%	-6.98%	.49%
2007/08	856	58.80	99.30%	47.25%	22.32%
2008/09	588	5.50	-30.67%	-82.72%	68.43%
		Total	260.28%	0%	116.15%
		Mean	52.06%	Var	29.04%
		SD	53.89%	CV	1.035
Nirdhan Utthan Bank Ltd.					
2003/04	90	0	-	-	-
2004/05	100	14	26.67%	-14.72%	2.17%
2005/06	100	27	27%	-14.39%	2.07%
2006/07	110	21.40	31.40%	-9.99%	1.00%
2007/08	134	45.75	63.41%	22.02%	4.85%
2008/09	183	29.35	58.47%	17.08%	2.92%
		Total	206.95%	0%	13.01%
		Mean	41.39%	Var	3.25%
		SD	18.03%	CV	.436
Goodwill Finance Company Limited					
2003/04	180	0	-	-	-
2004/05	185	20	13.89%	-45.48%	20.69%
2005/06	185	10.53	5.69%	-53.685	28.82%
2006/07	220	69.09	56.26%	-3.11%	.10%
2007/08	633	62.50	216.14%	156.76%	245.75%
2008/09	625	38.88	4.88%	-54.49%	29.70%
		Total	296.86%	0%	325.05%
		Mean	59.37%	Var	81.26%
		SD	90.15	CV	1.518
Gorkha Finance Co. Ltd.					
2003/04	104	10	-	-	-
2004/05	108	10	13.46%	-27.46%	7.54%
2005/06	105	37.053	31.53%	-9.40%	.88%
2006/07	180	0	71.43%	30.50%	9.30%
2007/08	200	0	11.11%	-29.82%	8.89%
2008/09	308	46.20	77.10%	36.17%	13.09%
		Total	204.63%	0%	39.70%
		Mean	40.93%	Var	9.93%
		SD	31.51%	CV	.770
Mahalaxmi Finance Ltd.					
2003/04	270	10	-	-	-
2004/05	264	62	20.74%	-72.06%	51.92%
2005/06	260	47.20	16.36%	-76.43%	58.42%

Year	Price	Dividend	Return (R _i)	R _i - R _i	(R _i - R _i) ²
2006/07	372	253.73	140.67%	47.87%	22.92%
2007/08	1191	238.20	284.19%	191.40%	366.33%
2008/09	1191	24	2.02%	-90.78%	82.41%
		Total	463.98%	0%	582%
		Mean	92.80%	Var	145.50%
		SD	120.62%	CV	1.300
Everest Insurance Company Limited					
2003/04	350	0	-	-	-
2004/05	325	147.50	35%	26.69%	7.12%
2005/06	295	0	-9.23%	-17.54%	3.08%
2006/07	290	36.37	10.64%	2.32%	.05%
2007/08	291	0	.34%	-7.97%	.63%
2008/09	285	20	4.81%	-3.50%	.12%
		Total	41.56%	0%	11.01%
		Mean	8.31%	Var	2.75%
		SD	16.60%	CV	1.996
Himalayan General Insurance Company Limited					
2003/04	175	0	-	-	-
2004/05	205	0	17.14%	-36.81%	13.55%
2005/06	189	0	-7.80%	-61.75%	38.14%
2006/07	300	379.50	259.52%	205.57%	422.61%
2007/08	345	5.26	16.75%	-37.20%	13.84%
2008/09	285	5.26	-15.87%	-69.82%	48.74%
		Total	269.75%	0%	536.87%
		Mean	53.95%	Var	134.22%
		SD	115.85%	CV	2.147
Premier Insurance Company Limited					
2003/04	192	0	-	-	-
2004/05	210	0	9.38%	-54.87%	30.11%
2005/06	200	260	119.05%	54.80%	30.03%
2006/07	260	300	180%	115.75%	133.99%
2007/08	300	0	15.38%	-48.86%	23.88%
2008/09	190	102.28	-2.57%	-66.82%	44.65%
		Total	315.24%	0%	262.65%
		Mean	63.05%	Var	65.66%
		SD	82.30%	CV	1.261

Annex-III

Risk and Return of Market (NEPSE Index)

Year	Index	R_m	$R_m - R_m$	$(R_m - R_m)^2$
2003/04	222.04	-	-	-
2004/05	286.67	29.11%	-2.79%	.08%
2005/06	386.83	34.94%	3.05%	.09%
2006/07	683.95	76.81%	44.91%	20.18%
2007/08	963.36	40.85%	8.96%	.80%
2008/09	749.10	-22.24%	-54.13%	29.30%
	Total	159.47%	0%	50.45%
	Mean	31.89%	Var	12.61%
	SD	35.51%	CV	1.114

Annex-IV

Risk and Return of different sectors

Commercial Banking Index				
Year	Index	R_c	R_c-R_c	(R_c-R_c)²
2003/04	231.97	-	-	-
2004/05	340.64	46.85%	14.89%	2.22%
2005/06	437.49	28.43%	-3.53%	.12%
2006/07	789.21	80.39%	48.44%	23.46%
2007/08	985.65	24.89%	-7.07%	.50%
2008/09	780.87	-20.78%	-52.73%	27.81%
	Total	159.78%	0%	54.11%
	Mean	31.96%	Var	13.53%
	SD	36.78%	CV	1.151
Development Banking Index				
2003/04	190.03	-	-	-
2004/05	237.86	25.17%	-20.95%	4.39%
2005/06	294.40	23.77%	-22.35%	5%
2006/07	539.66	83.31%	37.18%	13.82%
2007/08	1285.89	138.28%	92.16%	84.93%
2008/09	772.56	-39.92%	-86.04%	74.03%
	Total	230.61%	0%	182.17%
	Mean	46.12%	Var	45.54%
	SD	67.49%	CV	1.463
Finance Companies Index				
2003/04	195.99	-	-	-
2004/05	228.39	16.53%	-26.73%	7.14%
2005/06	261.37	14.44%	-28.82%	8.31%
2006/07	471.82	80.52%	37.25%	13.88%
2007/08	1152.74	144.32%	101.05%	102.11%
2008/09	697.61	-39.48%	-82.75%	68.48%
	Total	216.33%	0%	199.92%
	Mean	43.27%	Var	49.98%
	SD	70.70%	CV	1.634
Insurance Companies Index				
2003/04	237.62	-	-	-

2004/05	320.24	34.77%	9.13%	.83%
2005/06	381.25	19.05%	-6.6%	.43%
2006/07	612.46	60.65%	35%	12.25%
2007/08	817.25	33.44%	7.80%	.61%
2008/09	656.41	-19.68%	-45.33%	20.55%
	Total	128.23%	0%	34.67%
	Mean	25.65%	Var	8.67%
	SD	29.44%	CV	1.148

Annex-V

Covariance, Correlation and Beta coefficient between the return of stocks and return of Market

Himalayan Bank Ltd					
Year	Return (R_i)	($R_i - R_m$)	R_m	($R_m - R_m$)	($R_i - R_m$) \times ($R_m - R_m$)
2003/04	-	-	-	-	-
2004/05	37.08%	-4.78%	29.11%	-2.79%	.13%
2005/06	32.39%	-9.47%	34.94%	3.05%	-.29%
2006/07	88.36%	46.50%	76.81%	44.91%	20.89%
2007/08	33.92%	-7.94%	40.85%	8.96%	-.71%
2008/09	17.55%	-24.31%	-22.24%	-54.13%	13.16%
Total	209.32%	0%	159.47%	0%	33.18%
SD(R_i) = 27.06%				Cov(R_i, R_m)	8.30%
Sd(R_m)= 35.51%				Cor(R_i, R_m)	.86
Var(R_m)= 12.61%				$\beta(R_i, R_m)$.658
Everest Bank Ltd.					
2003/04	-	-	-	-	-
2004/05	68.50%	.93%	29.11%	-2.79%	-.03%
2005/06	61.38%	-6.19%	34.94%	3.05%	-.19%
2006/07	145.08%	77.51%	76.81%	44.91%	34.81%
2007/08	60.02%	-7.55%	40.85%	8.96%	-.68%
2008/09	2.86%	-64.70	-22.24%	-54.13%	35.03%
Total	337.83%	0%	159.47%	0%	68.95%
SD(R_i) = 50.72%				Cov(R_i, R_m)	17.24%
Sd(R_m)=35.51%				Cor(R_i, R_m)	.96
Var(R_m)= 12.61%				$\beta(R_i, R_m)$	1.367
Nepal Investment Bank Ltd.					
2003/04	-	-	-	-	-
2004/05	-13.56%	-60.69%	29.11%	-2.79%	1.69%
2005/06	136.64%	89.50%	34.94%	3.05%	2.73%
2006/07	86.23%	39.10%	76.81%	44.91%	17.56%

2007/08	68.89%	21.76%	40.85%	8.96%	1.95%
2008/09	-42.53	-89.67%	-22.24%	-54.13%	48.54%
Total		0%	159.47%	0%	72.47%
SD(R_i) = 73.72%				Cov(R_i,R_m)	18.12%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.70
Var(R_m)= 12.61%				β(R_i,R_m)	1.436
Ace Development Bank Ltd.					
2003/04	-	-	-	-	-
2004/05	45.09%	-6.97%	29.11%	-2.79%	.19%
2005/06	101.48%	49.42%	34.94%	3.05%	1.51%
2006/07	45.08%	-6.98%	76.81%	44.91%	-3.13%
2007/08	99.30%	47.25%	40.85%	8.96%	4.23%
2008/09	-30.67%	-82.72%	-22.24%	-54.13%	44.78%
Total	260.28%	0%	159.47%	0%	47.58%
SD(R_i) = 53.89%				Cov(R_i,R_m)	11.90%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.62
Var(R_m)=12.61%				β(R_i,R_m)	.943
Nirdhan Utthan Bank Ltd.					
2003/04	-	-	-	-	-
2004/05	26.67%	-14.72%	29.11%	-2.79%	.41%
2005/06	27%	-14.39%	34.94%	3.05%	-.44%
2006/07	31.40%	-9.99%	76.81%	44.91%	-4.49%
2007/08	63.41%	22.02%	40.85%	8.96%	1.97%
2008/09	58.47%	17.08%	-22.24%	-54.13%	-9.25%
Total	206.95%	0%	159.47%	0%	-11.79%
SD(R_i) = 18.03%				Cov(R_i,R_m)	-2.95%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	-.46
Var(R_m)=12.61%				β(R_i,R_m)	-.234
Goodwill Finance Co. Ltd.					
2003/04	-	-	-	-	-
2004/05	13.89%	-45.48%	29.11%	-2.79%	1.27%
2005/06	5.69%	-53.685	34.94%	3.05%	-1.63%
2006/07	56.26%	-3.11%	76.81%	44.91%	-1.40%
2007/08	216.14%	156.76%	40.85%	8.96%	14.04%
2008/09	4.88%	-54.49%	-22.24%	-54.13%	29.50%
Total	296.86%	0%	159.47%	0%	41.78%
SD(R_i) = 90.15%				Cov(R_i,R_m)	10.45%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.33
Var(R_m)=12.61%				β(R_i,R_m)	.828
Gorkha Finance Ltd.					
2003/04	-	-	-	-	-
2004/05	13.46%	-27.46%	29.11%	-2.79%	.77%

2005/06	31.53%	-9.40%	34.94%	3.05%	-2.29%
2006/07	71.43%	30.50%	76.81%	44.91%	13.70%
2007/08	11.11%	-29.82%	40.85%	8.96%	-2.67%
2008/09	77.10	36.17%	-22.24%	-54.13%	-19.58%
Total	204.63%	0%	159.47%	0%	-8.07%
SD(R_i) = 31.51%				Cov(R_i,R_m)	-2.02%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	-.18
Var(R_m)=12.61%				β(R_i,R_m)	-1.60
Mahalaxmi Finance Ltd.					
2003/04	-	-	-	-	-
2004/05	20.74%	-72.06	29.11%	-2.79%	2.01%
2005/06	16.36%	-76.43	34.94%	3.05%	-2.33%
2006/07	140.67%	47.87%	76.81%	44.91%	21.50%
2007/08	284.19%	191.40%	40.85%	8.96%	17.15%
2008/09	2.02%	-90.78%	-22.24%	-54.13%	49.14%
Total	463.98%	0%	159.47%	0%	87.47%
SD(R_i) = 120.62%				Cov(R_i,R_m)	21.87%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.51
Var(R_m)=12.61%				β(R_i,R_m)	1.734
Everest Insurance Co. Ltd					
2003/04	-	-	-	-	-
2004/05	35%	26.69%	29.11%	-2.79%	-.74%
2005/06	-9.23%	-17.54%	34.94%	3.05%	-.53%
2006/07	10.64%	2.32%	76.81%	44.91%	1.04%
2007/08	.34%	-7.97%	40.85%	8.96%	-.71%
2008/09	4.81%	-3.50%	-22.24%	-54.13%	1.90%
Total	41.56%	0%	159.47%	0%	.95%
SD(R_i) = 16.60%				Cov(R_i,R_m)	.24%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.04
Var(R_m)=12.61%				β(R_i,R_m)	.019
Himalayan General Insurance Co. Ltd.					
2003/04	-	-	-	-	-
2004/05	17.14%	-36.81%	29.11%	-2.79%	1.03%
2005/06	-7.80%	-61.75%	34.94%	3.05%	-1.88%
2006/07	259.52%	205.57%	76.81%	44.91%	92.33%
2007/08	16.75%	-37.20%	40.85%	8.96%	-3.33%
2008/09	-15.87%	-69.82%	-22.24%	-54.13%	37.79%
Total	269.75%	0%	159.47%	0%	125.94%
SD(R_i) = 115.85%				Cov(R_i,R_m)	31.49%
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.77
Var(R_m)=12.61%				β(R_i,R_m)	2.496
Premier Insurance Co. Ltd.					

2003/04	-	-	-	-	-
2004/05	9.38%	-54.87%	29.11%	-2.79%	1.53
2005/06	119.05%	54.80%	34.94%	3.05%	1.67
2006/07	180%	115.75%	76.81%	44.91%	51.99
2007/08	15.38%	-48.86%	40.85%	8.96%	-4.38
2008/09	-2.57%	-66.82%	-22.24%	-54.13%	36.17
Total	321.23	0%	159.47%	0%	86.98
SD(R_i) = 81.03%				Cov(R_i,R_m)	21.75
Sd(R_m)= 35.51%				Cor(R_i,R_m)	.76
Var(R_m)=12.61%				β(R_i,R_m)	1.724