CHAPTER I

INTRODUCTION

1.1 General Background

Nepal is very small landlocked country. More than 80 % of its people are based on agriculture system. It is one of the poorest countries in the world where 31 % of the people live below the poverty line though it has higher economic development probability on industries, trade, and tourism and water resources. Amidst the challenge of development, the country has shown ample opportunity for economic growth in the context of building new Nepal.

For the growth and development of economy, industrialization plays vital role. There are lots of examples regarding the rapid economic growth of countries because of industrialization. Till early 70's Korea, Malaysia, Japan, and Singapore had very poor economic status as market reforms and industrial revolution took place their economy started blooming and now they have very sound. Even our neighbors China India, Bangladesh, Bhutan have shown such changes in the last decades.

In Nepal industrial development took place after the establishment of council of industry in 1936 A.D. This was a favorable step to promote industries and capital market in Nepal. Biratnagar jute Mill was the first industry established in Nepal. There after cotton industry, Sugar Mills, Spinning Mills, Match factories and some other private and public industries were also established. Nepal launched its first 5 yrs economic planning in 1956 A.D. Thus, planed effort for industrialization was started since 1956 from government and private sectors. Nepal industrial and Development Corporation was established in 1957 with the name of Industrial development Center (IDC). The IDC was converted in NIDC in 1959 by special charter. Then after there was three financial

institutions established in 1992 under the company act 1964, which were NIDC Capital market, NEFINSCO and National Finance Company Ltd. During last decade period, there has been established various financial Institutions in Nepal.

Reforms introduced in the financial sector in Nepal over the past 10 years including liberalization of interest rates, certain of a basic regulatory framework, active participation of private sectors in financial sector and development of securities market have lead to some significant improvements in economics activities. Since 1990 A.D. entrepreneurship has been growing gradually but the condition of industries and entrepreneurship is not as expected. Various enterprise so far privatize are not doing well, some of them are closed and still some of are in difficult urge. Main investment related problems as indicated by ministers of finance are " Security of funds, absence of big investors, skill manpower, conflict and underdeveloped capital market etc. " In order to enhance the role of this sector in economic activities, it is essential to flow financial resources economic agendas in a simple manner, which would, in return help to achieve desired results. On the other side to accelerate or upgrade the overall company performance, investors and other institutions must know about environment, process, evaluating methods, techniques and other implication by which funds flow to the needy company and in turn funds providers get return out of the profit earned by such company.

In Nepalese context, institution setup of securities market began along with the establishment of Security Exchange Center in 1976 A.D. It was established with an objective of facilitating and promoting the growth of capital markets. Nepal Government, under a program initiated to reform capital markets converted Securities Exchange Center in to Nepal Stock Exchange (NEPSE) Ltd. in 1993 A.D. NEPSE is Nepal's only stock exchange. 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 and market intermediaries (broker). The history of securities marker began with the flotation of shares by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. in

1937 A.D. NEPSE brought new dimension and atmosphere in stock market. Now, the numbers of companies have been established and listed their shares in NEPSE Ltd. Securities Board's working out with a plan to consolidate the stock market as international form. It has started the share trading with electronic system and WAN system (Wide Area Network). To provide the immediate results and live information about share trading it has started real time information through its developed website. The brokers play an important role that acts as the purchaser and sellers of securities to the behalf of the investors. In the highly developed security market, there would be the presence of large number of brokers. As a result they are able to buy or sell securities on the investors behalf in a matter of minutes. But in Nepal brokers are quite absence and stock market is in infantile stage. Now NEPSE has made some significant changes. It has lunched it own website. And in the year of 2007 A.D. it has started share trading with electronic system and started process for news brokers. The automated Trading System(ATS), on internationally compatible trading system was inaugurated. In order to adopt the ATS, NEPSE made an aggrement with British Company Comdaq Limited in Nov.2006 under the Asian Development Bank (ADB) Loan Assistance Project Corporate and Financial Goverenance (CFG) at the cost of 300 thousands US Dollars. The system has helped eliminate all possible human errors as seen in the open cry trading procedures. Several international practices have been incorporated to make the system internationally compatible and modifications have also been made to customize the existing rules and regulations of the company.

In the highly developed security market, there would be the presence of large number of brokers. As a result they are able to buy or sell securities on the investors' behalf in a matter of minutes. But in Nepal brokers are quite absence and stock market is in infantile stage. So, security Board has planned to increase its broker from 23 to 50 in this fiscal year 064/65 B.S. The major political changes, peace process, ending of Maoist conflict in the country, improved financial results of the companies has increased the confidence of the investors. Thus a bearish market turned bullish increasing the NEPSE in 4 digits.

As stated above, for the increment and the development of industries, sound investment and capital market should be arrange properly. Capital market is a very vital factor that indicates and supports the whole economy of any country. Nepalese capital market is very small and is in developing condition. More capital and investors is needed to invest for obtaining higher rate of economic growth. Domestic saving and foreign capital are the major sources of capital available for the investment. For investors, Capital market and Money market are available to invest money.

"Capital market is a part of financial market that comprises of money market and capital market. Money market is the market for debt security that pay off in the short term usually less then one year like Government's Treasury bills of 90 days etc. Capital market refers to the market for long-term debt and equity shares. It can be further divided into primary and secondary market. Primary market is the market where shares are offered to general public for the first time. And in the secondary market the securities that have already been purchased by the public in primary market are traded again and again."[1]

When going through the chapter investment in securities, the concept and the activities related with investment should be know clearly.

[1] Sharpe, William F, Gordon J. Alexender and Jeffery. V.Bailey, Investments, 5th editiuon. U.S.A.: prentice Hall, p.1,1955

"An investment is a commitment if money that is expected to generate additional money. Every investment entails some degree of risk; it requires a present sacrifice for future uncertain benefits."[2] But what is risk?

"Risk can be thought of as the possibility that the actual return from holding a security will deviate from the expected return. The greater magnitude of deviation and the greater the probability of its occurrence the greater is said to be the risk of security."[3]

"Risk may be defined as the like hood that actual returns from an investment will be less than forecasted return stated differently, it is variability of return from an investment."[4]

Return can be stated as the fruits get from planting trees. The income (return) is benefit gained on investment, which is expressed as dividend plus any changes in market price of shares. Both dividend and market prices of shares are uncertain figures. So, the greater the variability stock price the riskier the common stock.

While setting investment policy investors must state his /her objectives precisely in terms of both risk and return. In general most of the invertors are risk averter they always expect higher return for taking risk as risk premium. The primary problem in investment is to identify that security which is low risk and high return. Although, return can't be increased substantially risk can be reduced

by diversification of funds is the different stocks by making a portfolio. The total magnitude of risk can be measured by the adding systematic and unsystematic risk. Systematic risk, which is associated with change, in return on the market as a

[2] Francis, Jack Clark, *"Financial Management and Policy"*, New Delhi: Prentice Hall of India Pvt. Ltd., P-89, 1992

[3] Vanhorne, James C., *"Financial Management and Policy"*, New Delhi: Prentice Hall of India Pvt. Ltd. , P-89, 2000.

[4] Hampton, John J., *"Financial Decision Making"*, New Delhi: Prentice Hall of India Pvt. Ltd. P-396,

whole, cannot be avoided by the diversification of investment in the different portfolio.

Systematic risks are risk bought by economic inflation, business recession and economic depression. Unsystematic risk can be taken control by management. So it is called avoidable or non- market risk. E.g. Labors strike, consumer preferences etc.

When the investors invest their wealth in any business sector they expect some return of they want it increment in wealth and regular cash flow with minimum risk. So risk and return dimensions and its evaluation is an important concept in investment.

1.2 Statement of the Problem

In Nepalese context, due to the lack of information and poor knowledge, individual investor is manipulated or exploited by the financial institutions or the market intermediaries. Some financial institutions loss their goodwill because of collapsed due to their improper use of public funds.

"After the revolutions 2062, the stock exchange grabbed its success by indexing points in 4 digits. Government is saying that this kind of increment may be artificial which may crashed after some time. But stock index is rising day-by-day which may dwindling. More than 600 thousands investors who have invested millions of rupees in Nepalese stock market with a hope to reap benefits are always in suspicious fearing bubble in the stock trading may burst at any time resulting in their hard earned money going down the drain. Viewing the increment of NEPSE index, Nepal Rastra Bank has blocked to give margin lending on share for few months. But he investors and specialists are blaming the government that it has implementing the policies without sufficient study."[5]

[5] Dahal, Rishikes, Nepal Weekly, Kantipur Publication Pvt. Ltd., P-42, 29/9/2064.

But for the investors are also responsible to make rational investment decision rather than witching blame to others. The irony is that investors have to questions themselves and take the risk of market volatility in the fast changing technological world. Investor's knowledge about business environment, behavior of stock prices, company's dividend policies towards general public in investment in the stocks and the individual company's growth rate is essential. Investors' attitude and perception also plays vital role in the rational decision. In Nepal most of he investors invest their funds in single security rather than can be benefited by investing in

portfolio of securities through diversification of the risk. " Most of the rational investors hold portfolio of stock and they are more concerned with the risk of portfolio than with the risk of the individual securities."[6]

Alternatively there are no any separate institutions, which will give valuable information to the rational investors. Government policy is less encouraging in promoting common stock information. Our stock market is recognized as limited movement of share prices, low volume market, absences of professional brokers, early stage of growth, limited information available to investors, unexciting political environment and internal conflict. The number of investors in stock market is increasing but still low .The Nepalese investors are very few who can analyze the risk and return associated with stock. In Nepal the stock market is unbalanced and unfair. If any bank or financial institutions issues shares there becomes huge demand rather than supply, but if any manufacturing and processing company/organization issues shares very few investors make investment.

Nepal is very poor country. The people are striving for food and shelter and who are able to invest on long-term investment feel more risk. People of Nepal generally prefer to accumulate their savings in the form of fixed assets, precious

[6] Weston, J. Fred and Brigham Eugene F., "Essential of Management Finance", New York: the Dryden Press., P-215, 1996

metal, jewelries etc. They feel investment in stock is just like shooting in dark.

Due to the lack of knowledge and market awareness large number of capital is being passive. To overcome this problem the public as well as government should initiate new program. The information essential to investment decision should be disseminated properly and timely. In addition, idea of portfolio should be developed in potential investors mind. Stocks returns are determined not only by single factors, these are the functions of different fundamental variables. However these past findings are relevant in the present day context but other questions may also arise due to many changes taken place after the completion of these studies. In order to verify

these findings, this study also tries to analyze the relationship between sock return and risk. To sum up this study tries to deals with the following issues: -

1. How much return do the common stocks of listed companies provide their investor and how much risk associated with that kind of common stock investment & what are the impacts on them at present situation of Nepal?
2. What kind of relation does there exist between risk and return?
3. What are the effects of portfolio on return?
4. Does the portfolio of common stock of different companies help to reduce risk?

1.3 Objectives of the study

The major objective of the study is to evaluate the risk and return associated with common stock investment of some listed companies.

1. To measure and analyze the risk and return associated with the common stock of listed companies individually.
2. To examine the relation among the returns of the listed companies.
3. To analyze the relation between risk and return of the listed companies.
4. To provide useful suggestions to the different sector.

1.4 **Significance of the study**

The significant of the studies is as follows: -

1. This study will be helpful to analyze the growth of the individual company and market.
2. This study will be helpful to understand the risk return behaviors of individual stock and portfolio of listed companies.
3. It will be helpful to related person i.e. analyst, promoters, investors, shareholders, management and policy makers.
4. It will be helpful to government in making policy, regulating, controlling, monitoring and super visioning.
5. It will be helpful for researcher, academician's students, and teacher.

1.5 **Limitations of the study**

Every research has its own limitation. Basically, this research is done for the partial fulfillment of MBS. So, this has some limitations, which are listed below: -

- Risk & return only of commons stock is considered
- Some selected companies listed in NEPSE are taker as populations of the study.
- Major portion of analysis and interpretation have been done on the basis of available secondary data and information. So consistency of findings and conclusion is strictly dependent upon the reliability of secondary data and information.
- The study covers the relevant data and information only for five years i.e. fiscal year 2003/04 to 2008/09 A.D,
- Data and information taken from the NEPSE is based upon the Annual Report published by NEPSE in the year 2007/08. A.D.

- Only selected statistical tools are used.
- There may be innumerable factors showing some degree of relationship with returns but here, only selected variable taken into account.
- Time and financial constrain unavailability of essential datas and informations are also the major limitations of the study.

1.6 Organizations of the Study

The study has been organized into five chapters each devoted to some aspects of the study on "Comparatives study on Risk and return on common Stock Investment of some Listed Companies in Nepal Stock Exchange." The titles of these chapters are as follows:

Chapter 1: Introduction.

Chapter 2: Review of Literature.

Chapter 3: Research Methodology.

Chapter 4: Presentation and Analysis of data

Chapter 5: Summary, Conclusion & Recommendation.

Chapter 1: which contains the introductory part of ht study. As already mentioned, this chapter describes the major issues to be invested along with the General Background, Statement of the problem, Objectives of the study, Significance of the study, and Limitations of the study.

Chapter 2: which directed towards the review of Literature of related studies in journals and review of related studies in Nepal with reference to previous thesis, books and policies of the government.

Chapter 3: which includes research design, nature and sources of data, selection of enterprises, method of analysis, statistical tools used, limitation of the study and definition.

Chapter 4: which is data presentation and analysis part. It is main body of research. It consists of analyzing risk and return, relation between risk and return, relation of return among different listed companies, effect of portfolio between risk and return and comparative study of risk and comparative study of risk and return in sector – wise and individually.

Chapter 5: which includes Summary, Conclusion and Recommendation of the study. The Chapter presents the major findings. It also offers recommendations and several directions for future research.

CHAPTER II

REVIEW OF LITERATURE

The second chapter contains the review of literature. A review of Literature is the chapter where a researcher reviews the books, Journals, Magazine or any other type of studies, which are related to the case of study. Research is a continuous process. The procedures and the findings may change but research continuous. So, research never ends in a point. So, for analysis the data and to sum out something new a researcher must to review and know if there are any studies ahead or not. The main purpose of reviewing the literature is to develop some expertise in one's area, to see what new contributions can be made and to receive some ideas for developing a research design. So, review of literature is in fact a linkage this present study with the past research studies.

In this chapter some relevant and recent literature that are related to the topic risk and return, is reviewed. Topics from basic academic course book and different studies published in magazine, thesis of seniors and journals related to the study are reviewed below by segregating the whole chapter Conceptual Framework & Review of related field.

2.1 **Conceptual Framework**

2.1.1 **Investment, Risk and Return**

Investment (in an asset), risk (associated with investment) and return (carried out by investment) have close relationship with each other. Investment is a present commitment for the future benefits or return. While commitments take places with certainty, the future benefits of return are shrouded in uncertainty. The uncertainty creates risk.

"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 sacrifice for future uncertain benefits."[7]

“Investment in its broadest sense means the sacrifice of current dollars for future dollars. Two different attributes are generally involved time and risk. The sacrifice takes place in present and is certain. The reward comes later, if at all and the magnitude is generally uncertain.”[8]

An individual invest money in assets that will generate the desired wealth when it is needed for retirement, children's education or other financial goals. Consequently most investments are undertaken to provide an increase in wealth. So, investment simply means sacrificing current funds for future returns, bearing certain risk. As a student of Finance, We have focused the term investment as sacrificing current funds on financial assets.

Investors invest their fund on the securities of their favorable companies for the far run future benefits. Future benefits of investments are difficult to measure and can't be predicted with certainty. Because of the uncertain figure, investment decisions involve risk. Investment proposals should, therefore, be evaluated in terms of both return and risk.

Return is the most important outcome of an investment. It measures the investor's rate of wealth accumulation i.e. increase or decrease per period return, return from speculation of short sell, capital gain, dividend gain, yield on investment, yield to maturity etc.

[7] Francis, Jack Clark, *"Financial Management and Policy"*, New Delhi: Prentice Hall of India Pvt. Ltd., P-10, 1992

[8] Sharpe, William F, Gordon J. Alexender and Jeffery. V.Bailey, Investments, 5th editiuon. U.S.A.: prentice ,p.1,1955

"Return, in fact, a reward to the investor's for bearing the risk. The higher the level of the desired wealth, the higher the return that must be received. An investor seeking higher returns must be willing to face higher levels of risk, however."[9]

Risk ever creates an uncertainty. It can be defined as the variability of possible returns around the expected return of an investment. Investment alternatives have different types of risks associated with them. The factors that may contribute to investment uncertainty are business risk, financial risk, liquidity risk, default risk, interest rate risk, management risk, purchasing power risk, bull-bear market risk and so on. The level of risk depends upon the condition of the market. If market is efficient, there is low risk, but if it is inefficient definitely there'll be higher risk. An efficient market is such market, where the security price reflects al available information about the economy, about the financial market and about specific company involved. In efficient market the price of stock reflects its value. An individual asset considered in isolation may be very risky. Combining the assets into a portfolio of other assets may actually reduce the risk of the overall portfolio.

Investment on Securities

Investment can be made on real assets e.g. land, buildings etc. or on financial assets e.g. securities. Securities are promissory paper that the company gives to the investors after receiving certain rupees as loan or share. Securities are normally the shares debenture,

preferred stock, warrants, convertibles or any other financial certificates issued by the companies to general public. These certificates are issued at certain price called par value and are transferable from one person to another.

Various types of short and long-term securities available to company for raising capital are shares; Debentures, Warrants, Convertibles, Treasury bills etc. and

Cheney, John M. and Moses Edward A., *"Fundamentals of Investment,5th edition, St. Paul: West Publishing Company, p-29."*

shares include ordinary shares or common shares, preference shares or common stock and common stock provide ownership rights to investors. Debentures or bonds provide loan capital to the company, and investors get the status of lenders. Common Stock is the sources of permanent capital since they don't have maturity date. For the capital contributed by the shareholders by purchasing common stock or preference shares, they are entitled for dividends. The rate of dividend isn't fixed on common stock & is fixed in preference shares. But the debenture is long-term, fixed, financial security. The return of interest rate is fixed or known.

The investors can investment either in primary or in secondary market, by purchasing the securities of different companies. There are many more financial securities like a common stock, preference shares, debentures, warrants, convertibles treasury bills etc for the investors to invest. But rational investors must think about the risk and return on his or her investment by analyzing. Normally almost investors are risk averters so risk return analysis is very important for investment. Investment on bonds or preferred stocks are less risky because of their nature of fixed investment & fixed return, but the investment on common shares are most risky because of their certain investment but uncertain returns.

2.1.2 Risk & Return on Common Stock

Since the study is centered in common stock investment so, light is thrown on common stock; investment and risk - return associated with this. "Common stock represents and ownership position in a corporation. It is a residual claim in the sense that creditors and preference share - holders can receive any payment. In bankruptcy common stock holders are in the principal entitled to assets remained after all the prior claimants have been satisfied. Thus the risk is highest with common stock and so must be in its expected return.

“Stock is the ownership interest of a corporation each share of stock is fraction of the right and privilege that belongs to the owners of a business. A stock certificate is evidence of that fractional ownership. It is tangible evidence. A certificate of title to part of the company.”[10]

“Common stock holders of a corporation are its residual owners their claim to income and assets comes after creditors and preferred stock holders have been paid in fall. As a result a stock holder return on investment is less certain than the return to lenders or to preferred stock holder. On the other hand the share of a common stock can be authorized either with or without par value. A par value of stock is merely a stated figure in the corporate character and is of little economic significance. A company should not issue stock at price less than par value would be liable to creditors for the difference between the par price they paid and the par value.”[11]

"An ordinary share is known as variable income security. Being the owners of the company, shareholders bear the risk of ownership; they are entitled to dividends after the income claims of others have been satisfied. Similarly, when the company is warmed up, they can exercise their claims on assets after the claims of the suppliers of capital have been met." [12]

[10]Henderson, Glenn V, Garyl J. R. and Wert James E., *"An introduction to Financial Management"*, Addison Wesley-Publishing Company, Menlo Park, California., p-2, 1984

[11]Vanhorne, James C. and John M. Wachwicz John M., *"Fundamental of Financial management"*, Prentice Hall of India Pvt. Ltd., New Delhi.p-560, 1997

[12] Pandey, I.M., *"Financial management* ",Tata Mc. Graw Hill Publishing Company Ltd., India.,p-20,1997

Return to Common Stock Investors

Return is the reward to the investors for bearing certain risk. Return is defined as the dividend yield plus the capital gain of loss.

"Investment return is defined as the after tax increase in the value of the investment. The increase in the value can come from two sources: a direct cash payment to investors or an increase in the market value of the investment relative to the original purchase price." [13]

"The increate in the value of assets can come from two sources a direct cash payment to investors or an increase in the market value of the investment relative to the original purchase price. The rate of the return is the relative value of benefit on investment. The rate of return concept is important because it measures the speeds at which the investor's wealth increases or decreases."[14]

"Investors seek the maximization of dividends as well as stock price. Financial management is therefore concerned with the activities of corporation that affect the well being of stockholders. That well being can be partially measured by the dividend received. But a more accurate measure is the market value of stock."[15] He expressed that rate of return or return is the rate of change in wealth over a period of time. He calculated return as follows: -

$$\text{Return}(r) = \frac{\text{Wealth of the end of period} - \text{Wealth at begining of period}}{\text{Wealth at the begining of period}} \quad \text{.....2.1}$$

An investor can obtain two kinds of income from an investment in share of stock or bond. They are follows: -

[13]Cheney, John M. and Moses Edward A., *"Fundamentals of Investment,5th edition, St. Paul: West Publishing Company, p-30."*

[14] Francis, Jack Clark, *"Financial Management and Policy"*, New Delhi: Prentice Hall of India Pvt. Ltd., P-1, 1992

[15]Sharpe, William F, Alexander Gordon J. and Bailey Jeffery V., (1999) *Investment* (New- Delhi-prentice Hall of India Pvt. ltd.) P:9.

a. Income from price appreciation (or loss from price depreciation.).

b. 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.

"Investors are often concerned about returns over a particular holding period. If the holding period was in the past, the return is as historical or ex-past measures. The investor concerned with a future holding period calculates the expected, or ex- ante, return. Recently, attention has moved from the traditional measures of returns to the holding period return (HPR). This shift is consistent with the idea that more active investment strategies may be desirable. These strategies may be for relatively short periods of time as opposed to long term buy and sell strategies." [16]

He again added an appropriate measure of the return for holding the investment over time 't' is given by

$$HPT_t = \frac{P_{t+1} - P_t + C_{t+1}}{P_t} \quad \text{.....2.2}$$

Where,

$HPT_{t=}$ Holiding Period Return for Period 't'.

P_t = The beginning or purchase price at time 't'.

$P_{t+1=}$ The ending or selling price at time '$_{t+1}$'.

$C_{t+1=}$ The cash received for the period 't'.

So, the rate of return over the holding period is change in price plus cash receipts dividend by beginning price of the stock.

[16]Cheney, John M. and Moses Edward A., *"Fundamentals of Investment,5th edition, St. Paul: West Publishing Company, p-30."*

"A share consists of its dividend yields and the capital gain percentage. The formula of "r" calculating the rate of return of a share held for on year is as follows" [17]

Return= Dividend Yield + Capital gain.

$$R= \frac{DIV_1}{P_0} + \frac{P_1-P_0}{P_0} \quad \text{.....2.3}$$

Where,

R= Rate of Return

$\frac{DIV_1}{P_0}$ = Dividend Yield (Percentage)

$\frac{P_1-P_0}{P_0}$ = Capital Gain Yield (Percentage)

If the investment is of more than one-year period the rate return is calculated as average rate of return. The average rate of return is the sum of the various one period rates of return divided by the number of periods.

. . R=1/n [R_1+R_2+……+R_n]……..2.4

Where,

R = Average rate of return.

R1 + R2 ……Rn= Observed rates of return in period 1,2…to n.

n= Total number of periods.

Retrun on mutual fund is a little but different from the return on stock. Return in mutual fund is computed as:

Return [r]= $\frac{NAV_t}{NAV_{t-1}} + \frac{D_t}{NAV_{t-1}}$.....2.5

[17] Pandey, I.M., *"Financial management* ",Tata Mc. Graw Hill Publishing Company Ltd., India.,p-20,1997

Where,

NAV_t = the change in Net assets value per share adjusted to capital gain distribution.

D_t= the dollar denominated investment income per share at time 't'.

NAV_{t-1}= Net assets per share in the proceeding period.

Expected rate of Return

The expected rate of return for any assets is the weighted average rate of return using the probability of each rate of return as weight. Investment decisions are based on expectations' about the future. The expected rate of return is based upon the expected cash receipts (E.g. Dividend or interest) over the holding period and the expected ending or selling price. The expected rate of return is as ex-ante, or unknown; future return. Unless the rate of return is guaranteed most investors recognize that several of return into a single number called the expected rate of return.

If the investors can describe the possible variable s that at will influence each of the possible rates of return and assign probabilities to these e outcomes, the expected rate of return should equal the weighted average to the various possibilities. Listing the possible investment results and assigning probability to each of these outcomes is the same as creating probability distributions in statistics. Probability distributions are used to describe possible outcomes and to assign individual probabilities, from (no chance of occurring) to one (full certainty that the outcome will happen), to each possible outcome. The expected rate if return is calculated by summing the products of the rates of return and their respective probabilities. So that expected rate of return E(r) is given by

$E(r)= \sum_{t|\ 1}^{n} P_t x r_t$ …….. (2.6)

P_t= Probability distribution of rates of returns

r_t= Rates of return.

Risk on Common Stock Investment

Different people interpret uncertain and risk on common stock in different ways. But what is risk? And how is it measured?

'Risk' as "The chance of injury loss or damage pleasing."

"Risk is the variability of possible returns around the expected return of an investment."[18]

It is anything that could be happen any unknown event, which may be favorable to other. People consider risk as a chance of happenings some unfavorable event or degree of losing some value.

Every investment entails some degree of risk; it regards a present certain sacrifice for a future uncertain benefits. Investment alternatives have different types of risks associated with them.

"In the world of uncertainty, the expected return may not be realized. Risk can be thought of as possibility that the actual return from holding a security will deviate from the expected return. The greater the magnitude of deviation and the greater the probability if its occurrence the greater is said to be the risk of the security." [19] So, risk arises in investment evaluation because we cannot anticipate the occurrence of the possible future events with certainty and consequently; can't make any correct predication about the future beneficial sequences. However we define risk simply as unfavorable outcomes. The investors perceive risk in many different ways. A stockholder seeks risk if company's yield is below his expectations and below the required rate.

[18]Cheney, John M. and Moses Edward A., *"Fundamentals of Investment,5th edition, St. Paul: West Publishing Company, p-35."*

[19]Vanhorne, James C. and John M. Wachwicz John M., *"Fundamental of Financial management"*, Prentice Hall of India Pvt. Ltd., New Delhi.p-35, 1997

A bank may suffer risk if the lending is not recovered. A creditor may suffer from risk if their investment changes to bad debt and so on. But rational investors would agree that an investment's required rat should increase as the risk of the investment increases. Traditionally two approaches can be used to calculate the investment risk; the range (maximum range minimum range) and the standard deviation.

While the range communicate the difference between the best possible return and the worst possible return, if doesn't provide any information about the distribution of rates of return between the extremes. The standard deviation provides more information

about the risk of the assets; its advantage is that the uncertainties of return can be summarized into a single, easily calculated number. The major disadvantages is that the standard deviation considers possible return above the expected value to be as risky as return below the expected value.

The standard deviation is the square root of the variance of the returns around the mean. The variance of a distribution of holding period return is calculated by using following formula:

$$\pm (R)=\sqrt{\sum_{t=1}^{n} Pt(Rt-\overline{Rt})}^{2} \quad \text{.....2.7}$$

Where, P_t = Probability distribution of the observation (return).

R_t = The holding period return on stock't'.

$\bar{R}_t$= The expected return on stock't'.

± = Standard deviation which measures risk.

The coefficient of variation (C.V.) is another way to express the risk and is quite appropriate to use it in several of cases. C.V. is used in spite of S.D. because S.D. is an absolute measure of degree of variability and it may cause difficulty in company two or more projects of different size with different expected values. To overcome this problem it is necessary to express the magnitude of variability on relative term in common unit for which the technique called the coefficient of variation is widely used C.V. is a measure of relative dispersion. In the distribution of returns on stock it measures risk per unit of expected returns. It is calculated by dividend the S.D. of returns by the expected returns as follows.

Coefficient of Variation (C.V.) = $\frac{\text{St.Deviation}}{Expected\ \text{Re}turn}$.....2.8

$\therefore$ (C.V.) = $\frac{\sigma R}{E(R)}$

Similarly IM Pandey states that "the total risk, which is the case of an individual security is the variance (or Standard Deviation) of the return, can be divided into two parts:"[20]

Total Risk = Systematic Risk + Unsystematic Risk …….. 2.9

"The systematic risk, i.e. the risk caused by the whole system and can't be diversified where as the unsystematic risk i.e. due to internal factors and can be diversified. The systematic risk is due to overall market risk, the change in national economy, tax reform, a change in world power political situation etc. that affects securities overall and consequently can't be diversified away."[21]

The other parts of the risk arise from the uncertainties which are unique to individual securities and which is diversifiable form a well diversified portfolio.

" In USA, it has been found that unsystematic risk can be eliminated by holding about 15 shares & in India by holding 40 shares."[22]

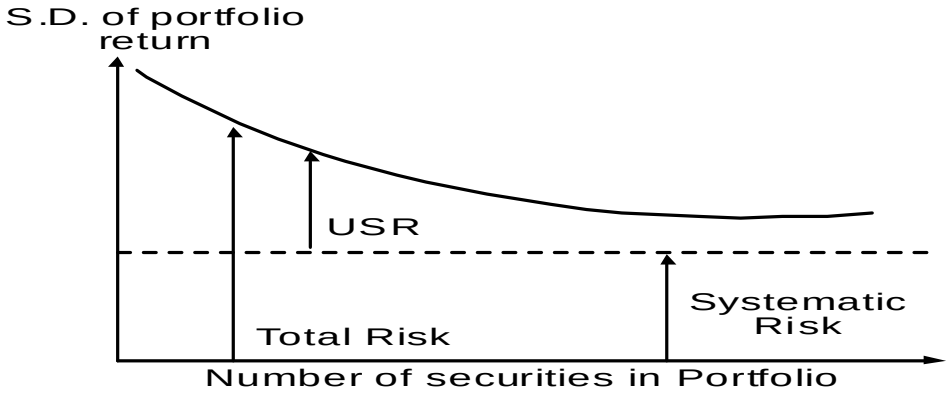
[20] Pandey, I.M., *"Financial management* ",Tata Mc. Graw Hill Publishing Company Ltd., India.,p-2199,1997

[21] Vanhorne, James C. and John M. Wachwicz John M., *"Fundamental of Financial management"*, Prentice Hall of India Pvt. Ltd., New Delhi.p-35, 1997

[22] Pandey, I.M., *"Financial management* ",Tata Mc. Graw Hill Publishing Company Ltd., India.,p-203,1997

Conceptually diversification can be viewed in the manure of portrayed in fig 2.1 as follows:

Fig: 2.1 Total Systematic & Unsystematic Risk.



Total systematic and Unsystematic Risk

The figure above represents as the number of randomly selected securities held in portfolio is increased the total risk of portfolio is reduced in keeping with the reduction of unsystematic risk. Above figure shows that the unsystematic risk can ve reduced as more and more securities are added to a portfolio.

Reduces the total risk of the point where only systematic risk remains.

Total risk can be measured by the variance of return denoted by Var(R)

∴ Total Risk = Systematic Risk + Unsystematic Risk

The diversifiable portion of total risk or unsystematic risk measure var (e) is called the residual variance or standard error squared in regression terms. The percentages of unsystematic can be determined as

$$D.P.= \frac{\text{Unsystemat ic Risk}}{\text{Total Risk}} X \frac{\text{Var (e)}}{\text{Var (ri)}} \text{..... ..... 2.10}$$

The percentages of total risk risk that is systematic (undersifiable portion) can be measured by the coefficient of determination (ρ^2)(i.e. the characteristic line's squared correlation coefficient can be determined as follows.

$$\rho^2 X \frac{\text{Systematic Rik}}{\text{Total risk}} \text{.....2.11}$$

$$\ldots X \frac{\beta j^2 \text{ Var (Rm)}}{Var(rj)}$$

As Systematic risk of the total risk of an individual security caused by market factors, mathematically it is measured as the covariance between the return of an individual asset or portfolio and the returns of the market portfolio.

$$\beta j X \frac{\text{Cov}_{jm}}{\text{Var}_{jm}} \text{.....2.12}$$

Where, β_j = Index of systematic risk.

Cov_{jm} =Covariance of individual asset returns with the return of the market portfolio.

Var_{jm} = Variance of market portfolio.

Beta coefficient may be used for ranking the systematic risk of different assets. If the beta is greater than 1, i.e. $\beta > 1$ that the asset is more volatile than the market and is called an aggressive assets. If beta is less than 1, i.e. $\beta < 1$, the asset is supposed to be defensive one. Its price fluctuation is less volatile than the market.

2.1.3 Relationship Between Risk & Return

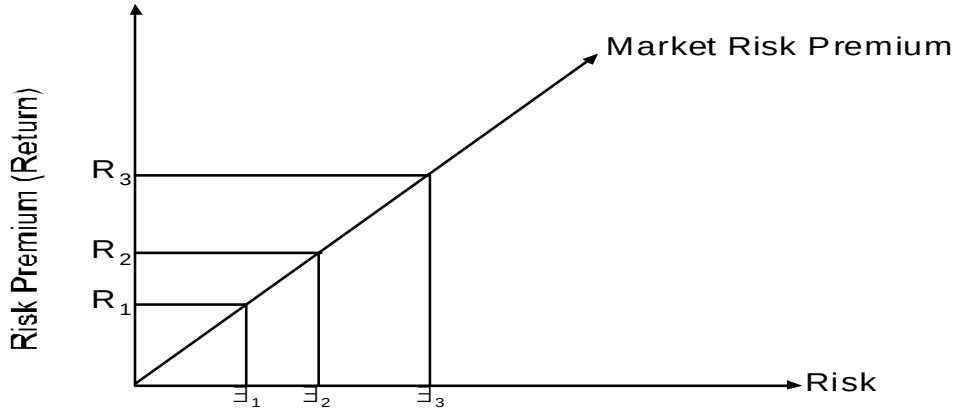
Cheney & Moses has reflects some of the major views associated with stock in portfolio "Since the market portfolio contains all risky assets in proportion to their market value, it is by definition, a perfectly diversified portfolio. The market portfolio (or any of portfolios on the CML) is, therefore, subject only to systematic or non-diversifiable risk. The volatility of the market portfolio is due to macroeconomic factors that affect all risky assets(e.g. Changes in expected rates of inflation, interest rates and the like.) and not to company of Industry- specific factors(i.e. a change in sales expectations for a particular product, pollution laws and the like). Volatility in returns created by unique company or industry specific factors is called unsystematic or diversifiable risk; this risk can be diversified away by adding risky assets to a portfolio.

A portfolio's (or a single asset's) total risk is equal to the sum of its systematic risk and unsystematic risk. In the case of the market portfolio, there is no unsystematic or diversifiable risk, and total risk equals systematic risk. Since it is possible to eliminate all unsystematic risk through perfect diversification, the capital markets don't reward investors for facing unsystematic risk. So the Capital Market Line (CML) holds only for perfectly diversified portfolios and not to portfolios that have diversifiable or unsystematic risk.

A number of studies have been conducted to determine how many stocks must be included in a portfolio in order to eliminate diversifiable risk using random selection or naïve diversification. Studies have shown that between 10 to15 stocks will remove most of the unsystematic or diversifiable risk of the portfolio and that additional stocks beyond this number only marginally reduce the unsystematic risk of the portfolio.

Risk a complicated subject and needs to be proper analysis. The relationship between risk and return is described by investors' perceptional and expectation about risk and their demand for compensations, No investor will take to invest in risky assets until he assured for adequate compensation for the assumption of risk. Therefore, it is the investors required risk premium that established a link between risk and return. In a market dominated by rational investors higher risk will command by rational premium and the tradeoff between risk and risk premium (i.e. return). The illustration of risk and return is shown below in figure (2.2).

Fig. 2.2 General Pattern of Risk and Return



With reference to above figure when risk is $\exists_1$ return is supposed to be of R1 magnitude but when the level of risk increase from $\exists_1$ to $\exists_2$ the return is also expected to be R_2. Thus the liners fashions indicate higher risk premium increased or decreased proportion to a change in level or risk.

To explain the relationship between expected return and systematic risk with the valuation of securities the Sharpe and linter was developed “Capital Assets Pricing Model” (CAPM) in the 1960s.

Sharpe & Linter have described the following assumption behind CAPM:

1. Investors evaluate portfolios by looking at their expected returns and S.D. of the portfolios over a on period horizon
2. Investors always choose the one with the higher expected return between two otherwise identical portfolios.
3. Investors are risk averse, they choose the one with the lower S. D. between two otherwise identical portfolios.
4. The risk free rate is same for all investor.
5. There is a risk-free rate at which on investor may either lend or borrow money.
6. Individual assets are infinitely divisible.
7. All investors have the same on period horizon.
8. Taxes and transaction costs are irrelevant.
9. Information is freely and instantly available to all investors.
10. Investors have homogeneous expectations, meaning that they have the same precipitations in regard to the expected returns, S. D. and Cov. of securities.

With the help of above assumption CAPM states that expected return on depends on.

a) The time value of money
b) The reward per unit of systematic risk.
c) The asset systematic risk as measured by beta.

The CAPM model uses the theory of security market line (SML) to show the relationship between required return (expected return) and beta. As per CAPM a securities expected return should relate to its degree of systematic risk and not to the degree of total risk. The greater the systematic risk i.e. its beta, the greater is the risk and greater the expected return. CAPM indicates that assets required plus a risk premium based on the beta of the asset in the CAPM model as securities expected return is the risk free rate plus a premium based on the systematic risk of the security. The model is

$$E(R_1) \text{ X} R_1 \Gamma (\overline{R}_m \text{ Z} R_f)_i$$

Where,

$E(R_1)$ = The expected rate of return of assets I,

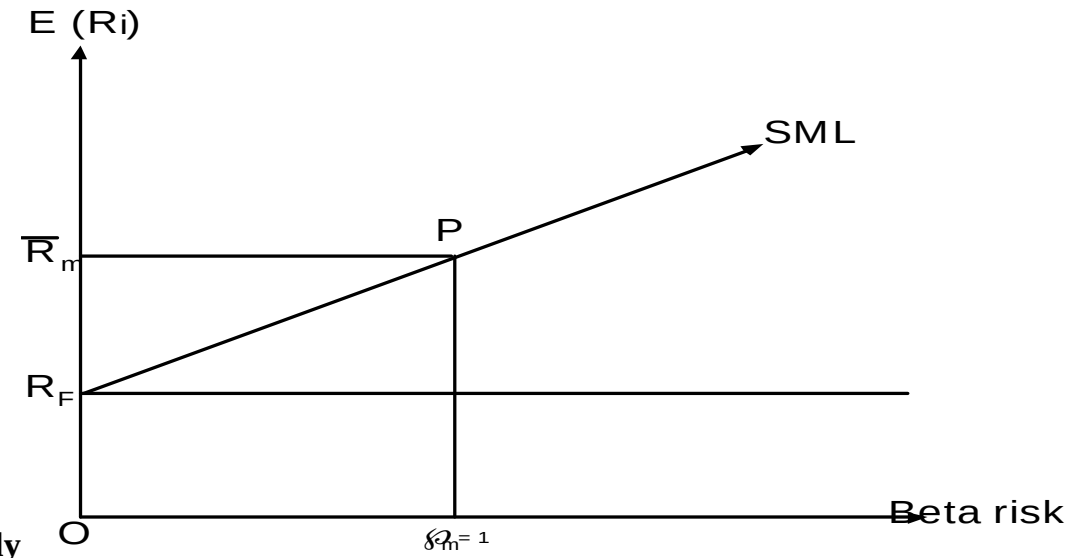
R_f = The nominal risk free rate of return.

B_i = Beta co-efficient of stock i

$\overline{R}_m$ = The expected rate of return on the market portfolio

Figure 2.3: The Capital Market Line.

Graphically



Hence CAPM helps us to decide whether to purchase or sell the stock of particular company on the basis of price & divided, over priced & under priced or risk and return.

2.2 Reviews of Journals

This part of study is mainly focused to present the theories and though of several scholars and finding of their research work under taken on "Risk and Return" and their relationship.

This part of study is objected to presented and state how the relationship between risk and return is measure by several researchers. There are very few journals available in Nepal relevant to the topic. Hence have to tries to find some articles that are published in the magazines which seemed relevant to our study.

An article published on New Business Age (April-May 2006) is reviewed here.

Mr. Rabindra Bhattarai has delighted some of the factors that affect the investors' attitude or the common stock investment environment on his article" Shining Days Ahead."[23]

"A bearish market price since the early March turned bullish increasing the NEPSE index by 6.66 points on April 25, the day after the King's announcement of reinstating the House to representatives. Now, this political change is likely to bring boom in the stock market similarly to that seen during early Feb.2005."

The 19 days political tension in 2006 AD in the country was attributed to the increasing confidence of the investor about the country's economy with the development of sound political environment.

He has added that not only the changed political scenario is major catalyst to increase investor's attitude but following are also the major attribute for this.

1st & 2nd quarter financial reports which showed the better performance in the early first 4 or 5 months of current fiscal year.

Overdependence of the investors on the growth charts than the fundamental information about the companies or the overall company.

Issues of Primary & Right shares of Bank, Finance, Hotel & Companies.

Mr. Bhattarai, in his article, also delighted over the investors' awareness, stock market geared down & up by which overall affects the stock investment environment.

"The market lost 11 points in the early period of March (March 1-8). This is attributed to the warning from all experts that the market increase was without any basis. While some investors, heeding this warning, started booking profit, thereby increasing the supply of the stocks, a number of primary & right shares issues come to the market at the same time attracting some investors away from the secondary market. Similarly the overall market lost by 9.17 points during early

March to early April 2006. This downturn was due to the intensification of the

[23] Mr. Rabindra Bhattarai, New Business Age, (April –May 2006), A. Media Pvt. Kathmandu, P-25)

political struggle. Investors like to wait and watch the course of these developments in the political field making any decision."

From the above analysis we can conclude that

- How the investors attitude changed due to the information available in the market.
- You can earn up, if you gathered information from the market, analysis the riskiness & take step according.
- Bette performance of companies attracts the investors.
- Sound political & economic environment plays an important role.
- Investors now have become aware of the situations and opportunities.
- Regulation, continuity of government, strong political settlement can facilitate the market & increase the confidence of investors.

Another in research conducted on "Financial performance and common stock pricing" by Khagendra Prasad Ojha[24] in the year 2000 is also relevant to the study.

He carried out his study on the 18 firms with five years data from the fiscal year 1994/95 to 1998/99. In this study firstly he focused on the connection between the financial performance and common stock price and secondly he explored non-financial factor known as signaling effects. He says that the rational decision enhances the financial performance of the company. The outcome is reflected in ROE, ROI, EPS, DPS and growth. Better performance tends to reduce risk and aids in achieving high rates, which in turn increase, the price of the stock. He says that investment in common stock neither ensures annual return nor ensures return of the principal.

Investment on common stock is very sensitive on the grounds of risk. Dividend is given only if firm makes profit hence investor will have to sacrifice their return if they invest in common stock which otherwise they would
have got if invested somewhere else."

[24] Mr. Khagendra Ojha, "Arthik Mancha Weekly, Shidhi Media Pvt. Kathmandu, 2000, P-25)

Radheshyam Pradhan, in 2003 carried out a study entitled "Stock market Behaviors on a small capital market: A case study in Nepal".[25]

This study was based on the data collected from 17 enterprises from 1986 to 1990. One of the objectives "To assess the stock market behavour in Nepal" is related to our study.

Pradhan gave following from his study:

1. Dividend per share and market price per share wa positively correlated.
2. There are positive relationship between dividend payout and liquidity.
3. Higher the earning on stocks, larger the ratio of dividends per share to market price per share.

The Journal published on SEBO[26]which is related to this study has reviewed here.

Equity issuance formed a significant portion of total issues which accounted for 70% of the total shares. The issuance such securities is a viable opportunity for risk seeking investors. The issuance of corporate bonds/debenture can be counted in hand.

The inclining in the level of NEPSE Index from 360.70 in F.Y 1999/00 to 725.30 in 2008/09 shows the increasing confidence level of the investor's on the Capital Market after the April revolution of 2006.

The study has also found that the maximum volume of transaction that occurs in NEPSE each year is mainly from non manufacturing sectors like banks, finance companies and insurance. Their transaction volume accounts for 60%-90% of the total volume transected This shows the dominance of these sectors over these sectors like hotels, manufacturing and processing and others. This attributed to existing regulation, requiring every financial institution to offer its prescribed portion of issued shares to the general public and changing political environment.

[25] Mr.Radheshyam Pradhan, “Stock Market Behavior in Nepal”,,Buddhi Prakashan, Biratnagar, 2003, P-25.

[26] Annual Report, SEBO, 2008/09, P-33.

The other sectors however are not bound by any such regulations. Further banking and financial sectors are better regulated than other sectors in the country resulting in higher confidence among the investors.

Similarly the article published on "Nepal Samacharpatra"[27] on 2008 July 20 also supports above study.

The representative of Samachapatra reported on his article "Nepse feri ak hajar najik" that the stock market in hitting ahead where the Nepse Index recorded 991.91points. When the market opens on the first day of the week, it was on 953.46, the last day of the week it met 991.91.

In overall transaction, the 'A' class company transaction was high, which was 32.92%. According to newspaper, in the 2nd week on July total 73 companies were on floor. No. of transaction of the shares was 14,53,776 which is 8,52,312 more than previous week. In overall transactions the banking sector's is high.

Through the report of newspaper we can conclude that the Nepalese people are now highly giving interest on investing shares. The Nepse index is carried out by the shares transaction of banking sector only. Sound financial position showed by the banking & financial, high rate of dividend paid, primary & right shares issued by them, sound political & labour environment, awareness of investors and the regulations of Nepal Rastra Bank over financial institutions are the basis of increment of investors attitude towards banking sector which later tend to increase Nepse Index.

2.3 Review of Thesis

[27] Representative, Nepal Samachar Patra Daily,Utsarg Prakashan, Kathmandu, July 20, 2008, P-3)

However risk and return is not a new concept for financial analyst and investors but in context of Nepal and it has very slow growing market, very few studies are made regarding this topic. Some studies are made as a thesis for the partial fulfillment of matter degree in T.V. which are reviewed here.

Mr. Gopal P. Bhatta in 1995 has conducted a study entitled "Assessment of the performance of listed companies in Nepal."[28] Mr. Bhatta conducted study on 10 listed companies including data from 1990 to 1995. One of the objectives" to analyze the performance of listed companies in terms of risk and return" is related to our study.

From this study, Mr. Bhatta Address the following finding regarding the risk and return analysis of different stocks.

"A highly significant positive correlation-ship has been addressed between risk and return character of the company. Investors expect higher return from those stocks, which associates higher risk. Nepalese capital market is not efficient one so the stock price does not contain all the information relating to market and company itself. Neither investor analyzes the over-all relevant information relating

to market and company itself, nor does the member of stock exchange try to disseminate the information. So, the market return and risk both may not represent reality. However, the analysis based on the available information shows high priced stocks such as BBC, NIB, NIC has higher return to satisfy the investors for their risk premium.

Investors in Nepal have not yet practiced to invest in portfolio of securities. An analysis of the two securities portfolio shows that the risk can be totally minimized if the correlation is perfectly negative. In this situation the risk can totally be diversified, but when there is perfectly positive correlation between the returns of

[28] Gopal P.Bhatta, *"Assessment of the Performance of Listed Companies in Nepal"* An unpublished Master Degree Thesis (T. U. Central Dept., (1995)

the two securities, the risk is un-diversifiable. The analysis shows some has negative correlation and some has positive one. Negative correlation between securities returns is preferred for diversification of risk."

On the basis of finding Mr. Bhatta concluded "Analysis of risk and return shows that many companies has higher un-systematic or specific risk. There is a need of expert institution which will provide consultancy service to the investors to maximize their wealth through rational investment decision."

Lastly Mr. Bhatta has recommended the following points to improve the market efficiency.

- Developed institutions to consult investors for risk minimization.
- Establish on information channel in NEPSE and
- Make proper amendment on trading rules.

To some extent Bhatta focused in the analysis of risk and return in common stock investment. But due to some other aspects of analysis investor cannot easily assess the results. Indeed study did not focus the view point of investors rather it concentrates the companies and stock market. However, this study also explores some dimensions for further research in this subject.

Study conducted by Mrs. Pramina Pandey[29] in 2000, entitled "Risk and return analysis of common stock investment" with special reference for investment portfolio of six insurance companies. In her study she has given following conclusions:

"On the basis of market capitalization, size of NIC is the biggest one, expected return on the common stock of NLGI is maximum i.e. 65.39% the high rate of

[29] Pramina Pandey *"Risk and return Analysis of Common Stock Investment"* An unpublished Master Degrees Thesis. (T. U, Shanker Dev Campus.) , (2001).

return is due to unrealistic annual return in 2050/51. Expected return of common stock of HGI and EIC is lowest with negative value. In overall industrial sector expected return of finance and insurance sector is highest. Overall market expected return is over 50%. Annual realized returns is unexpectedly high in the F.Y. 2050/051 and then declines in the preceding years"

About risk she had concluded "NLGI is regarded as the most risky security. As we know higher the risk higher the return, NLGI expected return is highest which ultimate the standard deviation to be highest and EIC's of risk. Coefficient of variation (CV) also measures risk and is known as relative measure of risk. Minimum CV is best for investment is single security. NIC can be taken as a best for investment as per minimum CV and its return is also quite high, more than 50%"

She has also concluded that on portfolio investment among the selected companies investor can reduce risk by investing 66% on stock of NIC and 34% on stock of NBL

Lila Nath Pandey (2003)[30] in his thesis entitled "A study on risk and return analysis of common stock investment" has concluded that without proper analysis of individual security, industry and overall market, it is almost impossible to beat the stock market. The main

objective of the study is to analyze risk and return of common stock investment with special reference to six finance companies in Nepal. He says that the investor's attitude, perception and risk diversification lowers the risk of portfolio. He further says that the stock market is risky in short run hence role it is necessary to prepare the investor for it. According to CV Finance and Insurance to sector is best for investment where as from the expected return point of view banking sector is best for investment. Among the selected

finance companies Kathmandu finance company is best for investment due to high

return and low CV and HISEF is most risky.

[30] Lila Nath Pandey,*"A study on Risk and Return Analysis of Common Stock Investment"* An unpublished Master Degree Thesis. (T. U. Central Dept.), (2003)

The study performed by Buddhi Raj Tamang in the year (2003)[31] entitled "Risk and Return Analysis of commercial Banks in Nepal" is also reviewed her. Among different objective of his study, one is to analyze whether the common stock of commercial banks are correctly priced or not by analyzing the required rate of return using the CAPM and it also aims to measure systematic and unsystematic risk of the commercial banks. From his findings Nepal Bangladesh Bank is placed as the highest return earner and Arab as the lowest return earner where as unsystematic risk of Arab Bank is highest and that of Bank of Kathmandu is lowest. Correlation coefficient of Arab bank shows that the return on Bank goes down when market return goes up. Though the share of banking sector are heavily traded shares in Nepal none of the company's shares are correctly price. From his study, the shares of the commercial banks in Nepal are heavily traded in NEPSE: one of the share prices is correctly priced.

Another study conducted by **Mrs. Sita Sapkota**[32] conducted a thesis in the year 2004 on topic of risk and Return analysis in common stock investment. The major objective of the study was to describe the risk, return and other study considered eleven (11) listed companies from different industry and analyzed there data from the F/Y 1999/00 to 2003/04. the major findings of the study were as follows:

- Finance and insurance companies have maximum expected return (i.e. 200.40%) hotel industry has also high expected return (i.e. 158.72%), and trading industry has low expected return among them i.e. 33.71%
- S. D. (i.e. total risk) of finance and insurance companies is the highest i.e. 5.1317 and the lowest of trading i.e. 0.625.
- There is no significant difference between the average return of selected companies and market portfolio return.

[31] Buddhi Raj Tamang, *"Risk and Return Analysis of Commercial Banks in Nepal"*, An unpublished Master Degree Dissertation, (T. U. Shanker Dev Campus), (2003).

[32] Sita Sapokta, *"Risk and Return Analysis in Common Stock Investment"*. An unpublished Master Degree Dissertation. (T. U. Nepal Commerce Campus.), , (2001)

Risk and Return Analysis of listed companies" a research carried out by **Mohan Purna Satyal** (2005)[33] is also relevant to our study. The objective of his study is to analyze risk and return other relevant variables along with the examination of movement of market price of share. The problem on which he has focused is unequal and unfair contribution of different sectors. He has included 2 companies from banking sector, 2 from finance, 2 from insurance and 1 from trading sector in his study. According to him among the selected companies share price of NIB, HBL, NFC, NEFINCSO, UIC & NLL are moving in positive direction but share price of NIC and BBC is in decreasing trend. In his study he has found out that Nepal Level Limited is most risk as well as it provides more return where as Himalayan Bank is best for risk averters as it has leapt CV.

His study has further revealed that trading sector has highest return and insurance sector as highest risk. Shares of all the companies except BBC are under priced.

2.3 Research Gap

In the above analysis it is found that some has done Risk and Return analysis on common stock investment of single asset of company only. Mrs. Pramila Pandey has done analysis taking samples from 6 insurances companies only. Budhi Raj Tamang has done the analysis taking samples from banking sectors only. Mrs. Sita Sapkota and Mohan Purna Satyal has done analysis from

different sectors but they have not concentrated on risk and return analysis with market, comparison has not taken between the individual companies and sector. They have not given emphasis on Beta risk and market (Nepse) also. Mohan Purna Satyal has said that highly riskiest asset of NLL gives high return but he did not focus his study about systematic risk part which can't eradicate. So, this study has conducted to fulfill the above weakness.

[33] Mohan Purna Satyal, (2002), *"Risk and Return Analysis of listed Companies"*. An unpublished Master Degrees Thesis. (T. U, Shanker Dev Campus.)

CHAPTER III

RESEARCH METHODOLOGY

The basic objectives of this chapter are to provide details of the various methodologies followed during the study of the project. This chapter deals with the research methodologies which are used in the period of research. Research Methodology is the submission of methods, techniques and the ways of study and analysis of the data. It is a way to systematic process of study so that we can solve the research problem. In this regard, this chapter explains the research methodology adopted and implied for the resources used in achieving the permitted objectives as stated in the earlier chapter. The method that here been used for performing the study are described. as follows:

3.1 Research Design

"Research design is the plan structure and strategy of investigation conceived so as to obtain answers to research question and to control variance" [23.] It provides a way to research objectives.

The study is based on descriptive and analytical research design. The study is based on recent historical data, which covers generally five years period from F/Y 2003/04 to 2008/09. It deals with the common stock of some listed companies (in Nepal) on the basis of available information.

3.2 Nature and Sources of Data

Up to 2007 there are 135 companies listed in the Security Board of Nepal among the selected sectors. All of the listed companies from the selected sectors are

[34] Kothari, C.R. (1991), Research Methodology, Wishwa Prakashan, New Delhi.

sample for study. Ten of them (2 from banking, 2 from finance, 2 from insurance, 2 from manufacturing & processing company and 2 from trading) are taken as sample and further analysis. Required necessary data and information have been collected from web site of NEPSE http//: www. nepalstock.com. Annual report of the NEPSE Ltd. 2007/08 provided by the Security Board Nepal and other various sources covering the year 2003/04 to 2008/09. For the information, Aviyaan, New Business Age various national and international website have been visited. Other data of related companies are taken from the companies' website and annul report of thesis.

3.3 Selection of Enterprises

There are total 142 companies listed in NEPSE Ltd. by the end of F/Y 2008/2009. Among the listed companies here only the companies from five sectors Banking, Finance, Insurance, Manufacturing and Trading have selected and two from each are selected

as a sample. Among the sample, especially from joint venture banks, non-merchant finance company, non-life Insurance Company, multinational company and consumer's item trading companies have selected for study. There are 6 Joint Venture Banks, 28 Non Merchant Banking Finance Companies, 9 Non Life Insurance Companies, 11 FMCG Product Manufacturing Companies, 8 Consumer Items Trading Companies listed in NEPSE Ltd. till end of fiscal year 2006/07. So for this study 62 companies are population size and 10 companies are sample size. The list of the selected companies and its period of used data to conduct this study are shown in the Table 3.1 as below.

Table 3.1 Name Address and Study periods of selected listed companies

S.N.	Name of Companies	Years	Observation
1.	Standard Chartered Bank(Nepal) Ltd. Kathmandu	2003-2008	5
2.	Nabil Bank Ltd. Kathmandu	2003-2008	5
3.	Yeti Finance Ltd. Hetauda	2003-2008	5
4.	Mahalaxmi Finance Ltd. Birganj	2003-2008	5
5.	Neco Insurance Co. Ltd. Kathmandu	2003-2008	5
6.	Himalayan General Insurance Co. Ltd. Ktm.	2003-2008	5
7.	Uni Lever Nepal Ltd. Hetauda	2003-2008	5

8.	Bolters Nepal Ltd. Balaju	2003-2008	5
9.	Salt Trading Corporation Ltd. Kathmandu	2003-2008	5
10.	Bishal Bazar Co. Ltd. Kathmandu	2003-2008	5

3.4 Method of Analysis and presentation

All methods of analysis and presentation are applied as simple as possible. Proper financial and statistical tools are used and results are presented in tables and shown in diagram too. Interpretation is made in very simple way. Details of calculation which can't show in the main body part, are presented in Appendices, at the end. Summary, conclusion and recommendation are presented finally.

3.4.1 Tools Used for Analysis

In the process of conclusion and analysis statistical tools like, S.D. Average return, C.V. etc. are calculated manually. The tools applied are;

a) Return on Common Stock (R) : The stock returns (R) are usually expressed as a percent of the beginning price of the investment. It is the income received on investment plans any change in market price.

Symbolically,

$$R_t \; X \frac{D_t \; \Gamma (P_t - P_{t-1})}{P_{t-1}}$$

Where R means actual rate of return on common stock at time t, Dt refers cash dividend received at time t, Pt and Pt-1 is price of stock at time t and t-1.

b) **Expected return on common stock investment**: This is obtained by arithmetic means of the return of the past years included.

Symbolically, $\overline{R}\ X\frac{R}{n}$

Where $\overline{R}$ is expected return, n denotes numbers of years and means summation of returns of the years.

c) **Standard Deviation $(\pm)$:** It is a statistical measure of the variability of a distribution of returns around its mean. It is the square root of the variance and measures the total risk of stock investment. Standard Deviation measures total risk on investment.

Symbolically,

d) Coefficient of variation (C.V.): It is the ratio of standard deviation of returns to the mean of that distribution. If we needed to calculate risk per unit of expected return, we can use coefficient fo variation. It is a measure of relative risk.

Symbolically,

$C.Vj\ X\frac{\pm_j}{\overline{R}_j}$

where $C.Vj$ = Coefficient of variation of stock j.

$\pm_j$ =standard deviation which measures risk.

$\overline{R}_j$ = Expected return on stock j.

Coefficient of variance is the unitary risk measures. It gives the result regarding the unit of risk to besr for earning 1 unit of return.

$$Cov\left(R_j R_m\right) = \frac{\left(R_j - \bar{R}_j\right)\left(R_m - \bar{R}_m\right)}{n - 1}$$

Where, $_j$ =Beta coefficient of stock j.

Cov (R_j R_m) = Covariance between R_j and R_m and is equal to

$\pm_{m2}$ XVarianceof marketreturns.

e) Portfolio Return (R_p): A portfolio is a collection of investment or combination of two or more securities or assets. Portfolio theory deals with the selection of optimal portfolios; i.e. Portfolios the highest return for any specified degree of risk or the lowest possible return for any specified rate of return. Portfolio return \is simply a weighted average of individual stock returns where analysis performed only for two assets portfolio.

Symbolically,

$$\bar{R}_P = W_A \bar{R}_A + W_B \bar{R}_B$$

Where,

$\bar{R}_P$ XExpected return on portfolio of stock A and stock B.

$\bar{R}_A$ = Expected return on portfolio of stock A .

$\bar{R}_B$ = Expected return on portfolio of stock B.

W_A = the fraction of the total value of the portfolio invested in the stock A.

W_B = the fraction of the total value of the portfolio invested in the stock B

The sum of the W_A & W_B should be 1 or 100% [$W_A + W_B = 1$]

f) Portfolio risk σ_P: Portfolio risk is the measure of combined standard deviation of stocks held in portfolio, with reference to individual stocks corresponding correlation contribution. The formula for the calculation of portfolio risk for two assets case is given by:

Symbolically,

$$\sigma_P \text{ X} \sqrt{W_A^2 \sigma_A^2 \Gamma W_B^2 \sigma_B^2 \Gamma 2 W_A W_B r_{AB} \sigma_A \sigma_B}$$

Where,

σ_P = Portfolio risk

W_A = Weight / Proportion of stock A held in the portfolio

W_B = Weight /Proportion of stock B held in the portfolio

r_{AB} = Correlation between stocks A & B.

σ_A^2 = Variance of Stock A .

σ_B^2 = Variance of Stock B.

g) Risk minimizing Portfolio: It is the proportion of stock that will minimize the possible (unsystematic) risk. In two stock case, the optimal weight to invest in stock A & B are calculated as follows:

Symbolically,

$$W_A = \frac{\sigma^2 - Cov_{AB}}{\sigma_i^2 + \sigma_A^2 - 2Cov_{AB}}$$

and

$W_B = 1 - W_A$

Where,

W_A= optimal weight to invest in stock 'A'.

W_B = optimal weight to invest in stock 'B'.

In the process of calculating values of different measures of risk, some financial tools have been used eg. beta β and systematic risk portion(SR) etc.

h) Beta β : Market sensitivity of stock is explained in terms of beta coefficient. Higher the beta greater the sensitivity and reaction to the market movement. Beta is a systematic risk, which cannot be eliminated through the means of diversification. It has as its source factors that affect all marketable assets and thus cannot be diversified away.

Symbolically,

$$\beta_A = \frac{Cov(R_A R_M)}{\sigma_M^2} = \frac{\sigma_A \sigma_M r_{AM}}{\sigma_M \sigma_M} = \frac{\sigma_A r_{AM}}{\sigma_M}$$

Where,

A= Indicates the individual asset.

$Cov_{R_A R_M}$ = Covariance of the individual asset return with the returns of the market portfolio.

r_{AM} = Correlation between market return and stock 'A' return.

The beta of the market portfolio is by definition equal to 1 (the covariance of an asset with itself is its variances; thus, $Cov_{mm} = \pm^2_M$) and beta values for assets generally range between +0.5 and 2.0. Securities with betas above 1.0 are classified as "aggressive" since they are expected to have more volatile returns than the market. Assets with betas less than 1.0 are classified as "defensive" since their volatile is expected to be less than that of market.

i) Capital Assets Pricing Model (CAPM) :CAPM is the model, which gives the required rate of return of common stock, comparision of required rate of return and expected rate of return gives the result whether the stock is over-priced or under-priced. For the analysis risk free rate of return is needed i.e."Rf." Here for the study the return on the Treasury bills issued by Nepal RAstra Bank is taken as risk free return.

$\bar{R}_A = Rf + (\bar{R}_m - Rf)_A$

where,

$\bar{R}_A$ = Required rate of return

Rf = Risk free rate of return.

$\overline{R}_m$ = Return on market.

$_A$ = Beta coefficient of stock 'A'.

i) Systematic Risk Portion (SR): Systematic risk portion in other word is known as undiversifiable risk. It is that portion of variability in return caused by market factors that simultaneously affects the prices of all securities. It is calculated by the following formula.

$$SR \text{ X} \frac{Cov\int R_j R_m A}{\pm_m}$$

Where SR is systematic risk portion CV (Rj, Rm) means covariance between securities j and m. $\pm_m$ refers to standard deviation of market return.

j) Calculation of Market Return: Market return for the study has been calculated from the information available in "Securities market indicators" NEPSE Index points. For the calculation of annual market return, NEPSE Index point of previous year is subtracted from zero years. i.e. (Pt-Pt-1)

E.g. NEPSE Index for the year 1997/98 is 163.35

NEPSE Index for the year 1998/99 is 216.92

Market return for the year 1998/99

: 216.92-163.35

: 53.57

3.5 Tools for testing hypothesis

When sample size is less than or equal to 30 and population standard deviation (±) is not known then t-test is used to test he significance difference between two sample means.

In this research, all the companies listed in NEPSE index is population of this study, which in other words we can say market. The sample is the selected companies which is less than 30. As our sample is less than 30, t-test is the best way for testing our hypothesis.

When there is no significance difference between two sample means or the sample have been drawn from normal population with the same mean, the test statistic 't' is given by,

$$t \; \mathrm{X} \frac{\overline{X}_1 \; \mathrm{Z} \overline{X}_2}{\sqrt{S^2 (\frac{1}{n_1} \; \Gamma \frac{1}{n_2})}}$$

where,

$\overline{X}_1$ = Arithematic mean of first sample.

$\overline{X}_2$ = Arithematic mean of second sample.

n_1 =First sample size.

n_2 =Second sample size.

S^2 = An unbiased estimate of the common population variance $\pm^2$.

3.6 Definition of Key Terms

Terminology's that are used in this study may create misunderstanding some times. These facts being kept in mind such terms are defined briefly in the following paragraph.

Market price per share (M.P.S.):- MPS is the price of stock in which stock is traded in stock market. In this study closing price at the end of year have been taken for the further calculation.

Capital Gain (CG):- It is generally known as excess worth or values received over an actual value asset. But in this study capital gain refers that part of return which is due to the change in the year end stock price of following two years.

Dividend per Share (D.P.S.):- Dividend per share is the cash generation of each shares of common stock. It is regular return to investors on their investment provided by company. It is calculated by dividing total amount of dividend divided by numbers of existing shares of common stock.

Return on Common Stock (R):- In total capital gain and dividend (Cash + Stock) received per share is return on common stock. This study has taken different between closing price of previous year.

CHAPTER – IV

PRESENTATION AND ANALYSIS OF DATA

This chapter includes analysis of the data collected and their presentation with reference to various readings and literature review in their preceding chapters. Effort is made to analyze and diagnose the recent Nepalese stock market movement with special reference. This part of study contains mainly two sections fully in analyzing different faces of risk and return on common stock investment of selected listed companies. Section one deals with the individual study of companies expected return, standard deviation, beta coefficient, correlation between company return and market return and other essential factors required for making individual prediction, section two of the study deals with portfolio analysis of risk and return among ten companies. Different tables and diagrams are presented to make the result simple and easy to understand.

4.1 Individual study of Selected Listed Companies

Individual study section of the study includes the analysis of these ten selected companies in terms of expected return, standard deviation, coefficient of variation. Correlation with market returns, covariance with market return and the coefficient showing market sensitivity “Beta”.

4.1.1 Mahalaxmi Finance Limited, Birgunj

Table No. 4.1, Measurement of Risk and Return of MFL

Years	Closing Price	DPS	Total Return (R%)	$\int R - \bar{R}$	$\int R - \bar{R}$	Market return (Rm)	$\int R_m - \bar{R}_m$	$\int R - \bar{R}$ / $\int R_m - \bar{R}_m$
2003/04	220	25						
2004/05	245	20	20.45	0.18	0.032	-22.68	5789.69	-13.70
2005/06	270	10	14. 29	5.98	35.76	17.18	1312.61	-216.66
2006/07	264	30	8.89	-11.38	129.50	64.63	125.89	127.68
2007/08	260	20	6.06	-14.21	201.92	100.16	2185.56	664.32
2008/09	372	22.3	51.67	31.40	985.36	107.76	2953.92	1706.59
		∑	101.36		1352.57	267.05	12367.67	2268.23

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.2.

Table No. 4.2, Different Measures of Risk and Return

R_{MFL}	S_{MFL}	C.V.	Cov ($_{MFL}$,Rm)	*Beta* (B)	ρ($_{MFL}$,Rm)	SR	USR	Rm	S.Rm
20.27	18.39	0.907	567.06	0.183	0.554	10.20	8.19	53.41	55.61

Annual return of the Mahalaxmi Finance (MFL) varies from 6.06% to 751.67% which resultsw higher expected return 20.27.29% than the total risk 18.39% in terms of standard deviation. The percentaghe risk associated with its return is also less than 1, it means investors should have to bear only 0.907 risk for the returns of Re. 1.

The volatility measuring factor beta shows that the stock has less volatility than the market. Since beta 0.183<market beta =1. This fact clarify the stock is defensive and would become the investor intending in defensive stock.

The other factors for the company is it's systematic risk portion, which is high and cover 55.46% of total risk. The % of diversifiable risk is low i.e. 8.19%. It shows that the company has reduced its unsystematic risk portion to some extent.

Positive correlation of stock with market ($\rho_{MFC, Rm}$) 0.554 explains that the stock price has positive movement with price movement in market, less risk in terms of S.D. than that of market also describes the good position of the company.
C.V. describes the percentage risk associated with Re-1 return of a company if the value of C.V. is more than one it indicates that there exists more risk to investors to get the return Re-1. The C.V. of SCB is 1.356, which shows that investors have to take high risk to get the return of Re-1.

Beta presents the stock volatility with respect to the market. The beta coefficient of SCB, which is 0.387, shows that the stock is defensive one and less volatile than the market return.

Correlation of SCB with market is nearly perfect correlation (i.e 0.9895). Which indicates the movement of the stock price is highly affected by movement of price in market.

4.1.2 Yeti Finance Limited, Hetauda

Table No. 4.3, Measurement of Risk and Return of YFL

Years	Closing Price	DPS	Total Return (R%)	$fR Z \bar{R}$	$fR Z \bar{R}$	Market return (Rm)	$fR_m Z \bar{R}_m$	$fR Z \bar{R}$ $fR_m Z \bar{R}_m$
2003/04	176	43.2						
2004/05	190	27.5	23.58	14.31	204.78	-22.68	5789.69	-1088.85
2005/06	191	10	5.8	-3.47	12.04	17.18	1312.61	125.72
2006/07	210	0	9.94	0.67	0.45	64.63	125.89	7.52
2007/08	220	0	4.76	-4.51	20.34	100.16	2185.56	-210.84
2008/09	225	0	2.24	-7.0	49.0	107.76	2953.92	-380.45
		∑	46.35		286.61	267.05	12367.67	-1546.90

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.4.

Table No. 4.4, Different Measures of Risk and Return

R_{YFL}	S_{YFL}	C.V.	Cov ($_{YFL}$,Rm)	*Beta* (B)	ρ($_{YFL}$,Rm)	SR	USR	Rm	S.Rm
9.27	8.46	0.913	-386.52	-0.892	-0.125	-6.95	15.41	53.41	55.61

Annual return of the Yeti Finance Ltd. varies from 2.27 to 23.58% which results higher expected return 9.27% than the total risk 8.46% in terms of standard deviation. The percentage risk associated with its return is also less than 1, it means investors should have to bear only 0.913 risk for the returns of Re-1.

It has the least value of risk i.e. S.D. 8.46% having higher unsystematic risk (USR) i.e. 15.411% which is 182.16% of total risk. It indicates that the investors could diversify risk fully.

Beta presents volatility of the stock. It is assumed that if the value of beta is less than the value of market beta, which is always 1, the stock is known as less volatile than the market or it is supposed to be defensive stock. If the value of beta is more than one the stock is known as more volatile than the market. Sensitivity of the stock with market is higher and stock is considered as an aggressive one. The beta of YFC is –0.822, which is very low and it makes an indication that the company has less volatility in returns than that has in market returns.

The company has high percentage of unsystematic risk and systematic risk in negative value9-6.951%), it means the investors could diversify the risk easily.

Negative correlation of stock with market –0.125 explains that the stock price has opposite movement with price movement in market.

4.1.3 Standard Chartered Bank Limited.,Nepal

Years	Closing Price	DPS	Total Return (R%)	$\int R - \bar{R}$	$\int R - \bar{R}$	Market return (Rm)	$\int R_m - \bar{R}_m$	$\int R - \bar{R}$ $\int R_m - \bar{R}_m$

2003/04	1550	100						
2004/05	1640	285	24.19	-31.06	964.72	-22.68	5789.69	2363.36
2005/06	940	110	-35.98	-91.23	8322.91	17.18	1312.61	3305.26
2006/07	2345	120	162.23	106.98	11444.72	64.63	125.89	1200.32
2007/08	3775	150	67.38	12.13	147.14	100.16	2185.56	567.08
2008/09	5900	80	58.41	2.89	8.35	107.76	2953.92	157.07
		$\sum$	276.23		20887.84	267.05	12367.67	7593.09

Table No. 4.5, Measurement of Risk and Return of SCBL

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.6.

Table No. 4.6, Different Measures of Risk and Return

R_{SCBL}	S_{SCBL}	C.V.	Cov ($_{SCBL}$,Rm)	*Beta* (B)	ρ($_{SCBL}$, Rm)	SR	USR	Rm	S.Rm
55.25	72.26	1.31	1898.27	0.614	0.472	34.13	38.13	53.41	55.61

The annual return of the Standard Chartered Bank (SCBL) varies from –35.98% to 162. 23% and the expected return of the SCBL is 55.25% only. It has the total risk 72.26%, which contains 47.23% of systematic risk and 52.77 % of unsystematic risk. It means the chance of diversification of the risk is possible.

C.V. describes the percentage risk associated with Re-1 return of a company if the value of C.V. is more than one it indicates that there exists more risk to investors to get the return Re-1. The C.V. of SCBL is 1.13, which shows that investors have to take high risk to get the return of Re-1.

Beta presents the stock volatility with respect to the market. The beta coefficient of SCBL, which is 0.614, shows that the stock is defensive one and less volatile than the market return.

Correlation of SCBL with market is 0.472 which indicates the stock price has positive movement with price movement in market.

4.1.4 Nabil Bank Limited.

Table No. 4.7, Measurement of Risk and Return of NBL

Years	Closing Price	DPS	Total Return (R%)	$\int R \, Z \, \bar{R}$	$\int R \, Z \, \bar{R}$	Market return (Rm)	$\int R_m \, Z \, \bar{R}_m$	$\int R \, Z \, \bar{R}$ / $\int R_m \, Z \, \bar{R}_m$
2003/04	735	30						
2004/05	735	50	9.80	-72.77	5295.471	-22.68	5789.69	5537.07
2005/06	474	65	-26.66	-106.23	11284.81	17.18	1312.61	3848.71
2006/07	1505	70	232.28	15 Type	23320.34	64.63	125.89	1713.41
2007/08	2240	85	55.49	-24.08	579.85	100.16	2185.56	-1125.74
2008/09	5050	100	139.91	50.34	2534.12	107.76	2953.92	2735.98
		∑	397.82		43014.59	267.05	12367.67	12709.43

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.8.

Table No. 4.8, Different Measures of Risk and Return

R_{NBL}	S_{NBL}	C.V.	Cov ($_{NBL}$,Rm)	*Beta* (B)	ρ($_{NBL}$,Rm)	SR	USR	Rm	S.Rm
79.57	103.69	1.30	3177.35	1.02	0.56	57.14	46.55	53.41	55.61

Annual return of the Nabil Bank Limited varies from -26.66 to 129.91% which results higher expected return 79.57% which is the highest expected return among the selected companies with the highest total risk 103.69% which is also the highest total risk among selected companies. The percentage risk associated with it's return is greater than 1, it means investors should have to bear only 1.30 risk for the returns of Re-1.

The volatility measuring factor beta shows that the stock has less more or less volatility than the market. Since beta is more than 1 i.e. 1.02 so the stock is not defensive one.

It has the highest higher total risk i.e. 103.69% which covered 55.10% of systematic risk and 44.90 % of unsystematic risk. So, there is no more chances of diversification of risk.

Positive correlation of stock with market $P_{(NBL, Rm)}$ 0.56 explains that the stock price has positive movement with price movement in market.

4.1.5 Himalayan General Insurance Company Limited.

Years	Closing Price	DPS	Total Return (R%)	$fR Z \bar{R} A$	$fR Z \bar{R} A^{2}$	Market return (Rm)	$fR_m Z \bar{R}_m A^{2}$	$fR Z \bar{R} A$ $fR_m Z \bar{R}_m A$
2003/04	285	15						
2004/05	190	0	-33.33	-38.70	1497.69	-22.68	5789.69	2944.68

2005/06	175	0	-7.89	-13.26	175.83	17.18	1312.61	480.41
2006/07	205	0	17.14	11.77	138.53	64.63	125.89	132.06
2007/08	189	0	-7.80	13.17	173.45	100.16	2185.56	-615.70
2008/09	300	5.79	58.73	53.36	2847.29	107.76	2953.92	2900.12
		∑			4832.79	267.05	12367.67	5841.57

Table No. 4.9, Measurement of Risk and Return of HGIC

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.10.

R_{HGIC}	S_{HGIC}	C.V.	Cov ($_{HGIC}$,Rm)	*Beta* (B)	ρ($_{HGIC}$, Rm)	SR	USR	Rm	S.Rm
5.37	34.76	6.47	1460.39	0.472	0.756	26.26	8.50	53.41	55.61

Table No. 4.10, Different Measures of Risk and Return

Annual return of the Himalayan General Insurance Company Limited varies from -33.33 to 58.73.91% which yields only 5.37% expected return. The calculation shows 34.76 % of total risk which is more than 6 times of its expected return. The higher C.V. i.e. 6.47 also indicates that the stock has high risk to get the returns of Re-1.

Beta coefficient (0.472) of stock refers the indication that the stock is less volatile than the market does, so the stock is a defensive stock.

The nasty fact for the company is it's systematic risk portion, which is higher and covers 76.47% of total risk. The percentage of diversifiable risk is very less i.e. only 8.50%.

Positive correlation of stock with market i.e. 0.756 explains that the stock price has positive movement with price movement in market.

4.1.6 Neco Insurance Company Limited

Table No. 4.11, Measurement of Risk and Return of NeICL

Years	Closing Price	DPS	Total Return (R%)	$\int R Z \bar{R}$	$\int R Z \bar{R}$	Market return (Rm)	$\int R_m Z \bar{R}_m$	$\frac{\int R Z \bar{R}}{\int R_m Z \bar{R}_m}$
2003/04	181	10						
2004/05	130	0	-28.18	-33.69	1135.02	-22.68	5789.69	2563.47
2005/06	112	0	-13.85	-19.36	374.81	17.18	1312.61	701.41
2006/07	110	0	-1.79	-7.30	53.29	64.63	125.89	-81.91
2007/08	90	0	-18.18	-23.69	561.22	100.16	2185.56	-1107.51
2008/09	121	0	34.44	28.93	836.94	107.76	2953.92	1572.35
		∑	-27.56		2961.28	267.05	12367.67	3647.81

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.12.

Table No. 4.12, Different Measures of Risk and Return

R_{NeICL}	S_{NeICL}	C.V.	Cov ($_{NeICL}$,Rm)	*Beta* (B)	ρ($_{NeICL}$, Rm)	SR	USR	Rm	S.Rm
-5.51	27.21	-4.94	911.95	0.295	0.603	16.40	10.81	53.41	55.61

When making an observation to

annual return of NeICL, it varies from –18.18% to 34.44% and having the positive value only one fiscal year. It affect on its expected return which is -5.51%.

Average risk associated with the common stock of this company in the form of standard deviation is 27.21%. The C.V. which indicates the percentage risk associated with the returns is in negative value i.e. -4.94.

The volatility measuring factor beta shows that the stock has less volatile than the market does, since beta 0. 295 is less than the market beta 1.

The company has 10.48% of unsystematic risk and 16.40% of systematic risk .It means the investors could diversify the risk to some extent.

Positive correlation of stock with market 0.603 explains that the stock price has positive movement with price movement in market.

4.1.7 Salt Trading Corporation Limited.

Years	Closing Price	DPS	Total Return (R%)	$\int R - \bar{R}$	$\int R - \bar{R}$	Market return (Rm)	$\int R_m - \bar{R}_m$	$\int R - \bar{R}$ $\int R_m - \bar{R}_m$
2003/04	330	25.0						
2004/05	300	10	-6.06	-11.30	127.69	-22.68	5789.69	859.82
2005/06	315	20	11.67	-6.43	41.37	17.18	1312.61	232.96
2006/07	315	12	3.81	-1.43	2.04	64.63	125.89	16.04
2007/08	316	20	6.67	1.43	2.04	100.16	2185.56	66.85

2008/09	325	23	10.13	4.89	23.91	107.76	2953.92	265.77
		∑	26.22		197.02	267.05	12367.67	1441.44

Table No. 4.13, Measurement of Risk and Return of STCL

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.14.

Table No. 4.14, Different Measures of Risk and Return

R_{STCL}	S_{STCL}	C.V.	Cov ($_{STCL}$,Rm)	*Beta* (B)	ρ($_{STCL}$, Rm)	SR	USR	Rm	S.Rm
5.24	7.02	1.34	360.36	0.117	0.923	6.480	0.54	53.41	55.61

The annual returns of the Salt Trading Company Ltd. varies from 10 to 25.02%, it has expected return is 5.24%.

Average risk associated with this company's stock in the form of standard deviation is 7.02% having is higher value of systematic risk i.e. 6.48 which is 92.30 % if total risk. The rest of the risk of the company is created by the factors which neither is beyond the control of the management nor can be diversified.

Beta coefficient which is 0.117 shows that the stock is defensive would become the investor intending to invest defensive stock.

Correlation of Salt Trading with market is nearly perfect correlation (i.e.0.923) which indicates the movement of stock price is highly affected by movement of price in market.

4.1.8 Bisal Bazaar Company Limited.

Table No. 4.15, Measurement of Risk and Return of BBCL

Years	Closing Price	DPS	Total Return (R%)	$\int R Z \bar{R}$	$\int R Z \bar{R}$	Market return (Rm)	$\int R_m Z \bar{R}_m$	$\frac{\int R Z \bar{R}}{\int R_m Z \bar{R}_m}$
2003/04	1700	50						
2004/05	1405	75	-12.94	-28.55	815.10	-22.68	5789.69	2172.37
2005/06	1400	85	5.69	-9.92	98.41	17.18	1312.61	359.40
2006/07	1930	90	44.29	28.68	822.54	64.63	125.89	321.79
2007/08	2400	100	29.53	13.92	193.77	100.16	2185.56	650.76
2008/09	2575	100	11.46	-4.15	17.22	107.76	2953.92	-225.55
		∑	78.03		1947.04	267.05	12367.67	3278.77

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.16.

Table No. 4.16, Different Measures of Risk and Return

R_{BBCL}	S_{BBCL}	C.V.	Cov ($_{BBCL}$,Rm)	*Beta* (B)	ρ($_{BBCL}$, Rm)	SR	USR	Rm	S.Rm
15.61	22.06	1.41	819.69	0.265	0.668	14.74	7.32	53.41	55.61

Average return of Bisal Bazaar Co. Ltd. is varies from -12.94 to 44.29 % which results 15.61 % of expected return where 22.06 % of total risk is associated.

The percentage risk associated with its return is more than 1, it means investors should have to bear 1.41 risk for the returns of Re .1.

Since beta coefficient is less than one i.e. 0.265. It shows that the stock is defensive and would become the investor intending in defensive stock.

Stock has high degree of systematic risk (14.74%) than unsystematic risk (7.32%) so company can reduced unsystematic risk portion to some extent only.

Positive correlation of stock with market i.e. 0.668 explains that the stock price has positive movement with price movement in market. Less risk in terms of S.D. than that of market also describes the good position of the company.

4.1.9 Unilever Nepal Limited.

Years	Closing Price	DPS	Total Return (R%)	$\int R - \bar{R}$	$\int R - \bar{R}$	Market return (Rm)	$\int R_m - \bar{R}_m$	$\frac{\int R - \bar{R}}{\int R_m - \bar{R}_m}$
2003/04	2000	55						
2004/05	1130	90	-39.00	-64.64	4178.33	-22.68	5789.69	4918.46
2005/06	1400	120	34.51	8.87	78.68	17.18	1312.61	-321.36
2006/07	1631	130	25.79	0.15	0.023	64.63	125.89	1.68
2007/08	2500	150	62.48	36.84	1357.19	100.16	2185.56	1722.27
2008/09	3400	210	44.40	18.76	351.94	107.76	2953.92	1019.61
		$\sum$	128.18		5966.163	267.05	12367.67	7340.66

Table No. 4.17, Measurement of Risk and Return of UNL

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.18.

Table No. 4.18, Different Measures of Risk and Return

R_{UNL}	S_{UNL}	C.V.	Cov ($_{UNL}$,Rm)	*Beta* (B)	ρ($_{UNL}$, Rm)	SR	USR	Rm	S.Rm
25.64	38.62	1.51	1835.16	0.59	0.85	33.0	5.62	53.41	55.61

When making an observation to annual returns of the Unilever Limited. (UNL), it varies from -39.00% to 62.48% and having no any negative value in return. The expected return, which measures the average return per year on stock investment, is 25.64%. The standard deviation, which measures the total risk on stock investment, is 38.62% which is higher than expected return which is also indicated by higher C.V. (1.51).

Since, Beta coefficient β =0.4435 which shows that the stock is less volatile than market does. So the stock of UNL can told a defensive one.

The positive correlation of stock with market return (0.85) shows that movement of price in the market will lead a change in price of stock in the direction of market.

4.1.10 Botlers Nepal (Balaju) Limited .

Table No. 4.19, Measurement of Risk and Return of UNL

Years	Closing Price	DPS	Total Return (R%)	$\int R Z \bar{R}$	$\int R Z \bar{R}$	Market return (Rm)	$\int R_m Z \bar{R}_m$	$\int R Z \bar{R}$ $\int R_m Z \bar{R}_m$
2003/04	600	10						
2004/05	700	32.7	22.12	20.99	440.58	-22.68	5789.69	-1597.13
2005/06	554	5	-20.14	-21.27	452.41	17.18	1312.61	770.61
2006/07	635	18	17.87	16.74	280.23	64.63	125.89	187.82
2007/08	500	13	-19.21	-20.34	413.72	100.16	2185.56	-950.90
2008/09	500	25	5	3.87	14.98	107.76	2953.92	210.33
		∑	5.64		1607.92	267.05	12367.67	-1379.27

Expected Return (R), Standard Deviation (Sigma) coefficient of variation (c.v.) Covariance cover of stock return; correlation between stock and market return have been presented in table 4.20.

Table No. 4.20, Different Measures of Risk and Return

R_{BNB}	S_{BNB}	C.V.	Cov ($_{BNB}$,Rm)	*Beta* (B)	ρ($_{BNB}$, Rm)	SR	USR	Rm	S.Rm
1.13	20.01	17.70	-344.82	-0.11	-0.31	-6.2	26.21	53.41	55.61

Annual return of the Bottlers Nepal (Balaju) Limited varies from -20.14 to 22.12% which yields only 1.13% expected return. The calculation shows 20.01 % of total risk which is more than 17 times of its expected return. The higher C.V. i.e. 17.70 also indicates that the stock has high risk(Rs.17) to get the returns of Re-1.

Beta coefficient (-0.11) of stock refers the indication that the stock is less volatile than the market does, so the stock is a defensive stock.

The nasty fact for the company is its systematic risk portion, which is higher and covers 130.98% of total risk. Itsindicates that the investors could diversify risk fully.

Negative correlation (-0.31) of stock with market explains that the stock price has negative movement with price movement in market.

4.2 Overall Comparative Study of Selected Listed Companies

In the previous step of this chapter risk and return of each selected listed company are analyzed and interpreted individually. In this phase of study all selected company are gathered and unified study analysis is to be under taken. As the matter of fact this phase deals the comparative study of all the selected company in terms of risk and return. It specially provides higher attention to the investors and the analysis is also directed in the best of the investors.

For making at detailed predictions and comparison risk and return table of the selected companies are presented below.

Table 4.21 Expected Return, Total Risk, C.V., Beta, SR and USR of selected listed Companies.

S.N	Name of Company & Address	$\overline{R}$	σ	β	C. V.	SR	USR
1	Mahalaxmi Finance, Birgunj	20.27	18.39	.0183	0.907	10.20	8.19
2	Yeti Finance Limilted, Hetauda	9.27	8.46	-0.822	0.913	-6.915	15.411
3	Standard Charted Bank Limited	55.25	72.26	0.614	1.31	34.135	38.13
4	Nabil Bank Limited	79.57	103.69	1.02	1.30	57.14	46.55
5	Himalayan General Ins. Co.Ltd.	5.37	34.76	0.472	6.47	26.26	8.50
6	Neco Ins. Company	-5.51	27.21	0.295	-4.94	16.40	10.81

7	Salt Trading Corporation	5.24	7.02	0.117	1.34	6.48	0.54
8	Bisal Bazzar Company Ltd, Ktm	15.61	22.06	0.265	1.41	14.74	7.32
9	Bottlers Nepal(Balaju), Ktm	1.13	20.01	-0.11	17.70	-6.2	26.21
10	Unilever Nepal Ltd.,	25.64	38.62	.0.59	1.51	3.3	5.62

Source : Annex C & D

Now sector wise average of expected return, standard deviation, beta, C.V., systematic risk and unsystematic risk of expected risk of selected sector are shown in table 4.2.2

Table No. 4.22 Sectorwise average of different measures of risk and return of selected companies

Sectors	$\overline{R}$	σ	β	C. V.	SR	USR
Banking	67.41	87.98	0.817	1.305	45.64	42.34
Finance	14.77	13.43	-0.319	0.91	1.63	11.80
Insurance	-0.07	30.98	0.383	0.765	21.33	9.65
Manufacturing	13.385	29.32	0.24	9.6	13.4	15.92
Trading	10.43	14.54	0.191	1.38	10.61	3.93

Average of expected return, standard deviation, Beta, C.V., systematic risk and unsystematic risk of selected sectors are shown in Table 4.2.3

Table No. 4.23 Average of different measures of risk and return of selected companies

Average of	**Values**
Average of expected return	105.925/5=21.185
Average of standard deviation	176.25/5=35.25
Average of coefficient of variation	13.96/5=2.73
Average of Beta	1.312/5=0.26

Average of systematic risk	92.61/5=18.52
Average of un-systematic risk	83.64/5=16.73

The return to investors from a stock mostly refers the sum of dividend received (Cash + Stock) per share and the appreciation in market price or depreciation per share at the end of fiscal year. Organized stock exchange is known as secondary market, where trading of stock are performed. Only those shares are traded in secondary market, which have already been issued to public. Market value of the stock in secondary market is determined by supply and demand factors and reflects the consensus opinion of investors and traders concerning the value of the stock **(Cheney and Moses. PP, 417-418)**. Not only is this, in an efficient market a set of information fully and immediately reflected in market and in price **(Sharpe, P, 105).** As it declares that the market price per share of company reflects the performance of the company. The demand of the stock for better companies will be higher and market price per share of those companies will be higher, as a result, the return to investors will also become higher.

Though, standard deviation and variance of returns are known as measures of total risk, in this study only S.D. has been considered as measures of total risk; Besides, C.V. and Beta has also been taken into consideration as analyzing the degree of risk.

Table 4.2.1 reflects expected returns, C.V., Beta, S.D. and portion SR and USR. The table shows NBL has greatest value of expected return i.e. 79.57% which is much more than the average of company.NECO is the company having the least expected return among all selected companies which is -5.51 % and much less than average of companies. Among all only three are having higher expected return than the average of all. They are SCBL, NBL and ULL and rest of all 7 are below the average. And NeCL has negative expected return. Among the selected bank NBL has higher expected return i.e. 79.57 than the SCBL (55.25%) while the average of expected return of the banking sector is 67.41%. The MFL (20.27%) has also higher expected return than YFL(9.27%) with the

average return of financial sector (14.77%). Among the insurance companies NeCL has negative 5.37% return which yields the least & negative average return among all selected sectors i.e.(-0.07%). Among the manufacturing company ULL has much higher expected return 25.64% where BNL has only 1.13%. The expected returnof ULL & BNL produce average 13.385% which leads the manufacturing sector. Among the companies BBCL has higher value of expected return than STCL(5.24%) which produces the average expected return 10.43%.

The above table shows that NBL has the highest total risk among of all companies (i.e. 103.69%), which is not only greater than the average risk of companies but also than its expected return. STCL has the least total risk (7.02%) among the companies with expected return. Among companies three have higher degree of risk than the average risk; they are SCBL(72.26%), NBL(103.69%) and ULL (39.69%) and rest of seven companies MFL(18.399%), YFL(8.46%), HGIC(34.76%), NeCL (27.21%), STCL (7.02%), BBCL (22.06%) and BNBL (20.01%) have lower degree of risk than the average risk.

If we compare the total risk of the companies within a sector, NBL has higher risk (79.57%) than the SCBL (55.25%). MFL has higher risk (20.27%) with higher return 18.39% than YFL. The investment in HGIC is more risky than the investment in NeIC. ULL has higher risky value i.e. 38.62 % than BNBL. Between the two trading companies BBCL has higher risky value (22.06%) than STCL (7.02%). Among the selected sectors banking is the highest riskier sector, finance is lowest riskier sector.
C.V. refers the percentage risk associated with investment to get the return of Re.1 when taking the table 4.2.1 into reference, BNBL has highest value of C.V. (17.70%), which indicates very high degree of risk, NeCL has the lowest value of C.V.(-4.94%). Only two companies HGIC (6.47%) & BNBL(17.70%) has high percentage risk than the average percentage risk. Companies having percentage risk lower than the average (2.73%) are SCBL(1.31), NBL(1.30), MFL(0.907), YFL(0.913), NeCL(-4.94), STCL(1.34),

BBCL(1.41) & ULL(1.51). From the calculation it is found that manufacturing sector has the highest percentage risk (9.60) while finance sector has the lowest percentage risk (0.91). SCBL has slightly higher percentage risk (1.31) than NBL (1.30), MFC & YFC have not more difference in C.V. i.e. only 0.006%. HGIC has higher percentage risk (6.47%) than NeCl (-4.94%). STCL has slightly lower value of percentage risk (1.34%) than BBCL (1.41%). BNBL has more than 11 times higher percentage risk (17.70%) than ULL(1.51%). Among all NeCL has negative value of perentage risk.

Another risk measuring factor Beta is the measurement of volatility and variability of the stock returns. Beta is always compared with market volatility, which value is always 1. If the value of stock beta is less than 1, the stock is let, less volatile than the market or defensive stock. If the beta of stock is more than 1 the stock is assumed more volatile than the market or sensitivity of stock with market is higher and the stock is considered as an aggressive one. The average beta of these selected companies is 0.26. Stock of NBL is most volatile than all companies, which has beta of highest value 1.02. Stock of YFC is less volatile of all which beta is least beta value i.e.0.822. Five companies have higher value of beta than the average beta, they are SCBL (0.614), NBL (1.02), HGIC (0.472), NeCL (0.295) and ULL (0.59). Another four companies getting lower values of beta than average value of beta are they are MFL (0.183), YFL (-0.822), STCL (0.117) and BNBL (-0.11) and one company has equal value of beta with aveage beta (0.26) i.e. BBCL. If we make the comparison in sector-wise, the return of banking sector has the highest volatility with highest beta 0.817, while the finance sector has the lowest with lowest beta (-0.319).

Among the bank, NBL (1.02) is more volatile than the SCBL (0.614), MFL(0.183) is more volatile than YFL (-0.822). Stock of HGIC (0.472) is more volatile than the stock of NeCL (0.295). And BBCL (0. 265), ULL(0.59) are more volatile than the STCL (0.1175) & BNBL(-0.11) respectively.

Risk associated with stock can be divided into systematic and unsystematic risk factor. Systematic risk can't be diversify where as unsystematic risk can be diversify by well management and using others tools. Stock of NBL has the highest SR value i.e. 54.17 & YFL has the lowest SR value i.e. (-6.951). Four companies has higher value of SR than the average SR, they are SCBL(34.135), NBL (57.14), HGIC (26.26) & ULL (33.0). Other six companies have lower value of USR than the average USR, they are MFC (10.20), YFC (-6.951), NeCL(16.40), STCL (6.48), BBCL (14.74) & BNBL(-6.2). If we make the comparison among the sector, we can find banking sector has the highest systematic risk and finance sector has the lowest systematic risk. Among the bank, NBL has higher degree (57.14) of SR than SCBL (34.135), MFL has more higher SR (10.20) than YFL (-6.951). HGIC has higher SR (26.26) than NeICL (16.40). Between two trading comparison, BBCL has higher SR (14.74) than STCL (6.48), ULL has more higher SR (33.0) than BNBL (-6.2).

The respected of unsystematic risk which can be minize NBL has the highest value of unsystematic risk (46.55) where STCL has the lowest value of unsystematic risk i.e. (0.54). Among the companies, NBL (46.55), SCBL (38.13), BNBL(26.21) only three have higher value of unsystematic risk than the average value of unsystematic risk. Left of companies they are MFL(8.19), YFL(15.411), HGIC(8.50), NeCL(10.81), STCL(0.54), BBCL(7.32) and ULL (5.62) have the lower value of unsystematic risk than the average unsystematic risk.

Among companies, NBL (46.55), YFL(15.411), NeICL(10.81), BBCL(7.32), BNBL(26.21) have higher degree of unsystematic risk than SCBL(38.13), MFL(8.19), HGIC(8.50), STCL(0.54) & ULL(5.62) respectively.

4.3 Portfolio Risk and Return analysis of Selected Companies

A portfolio is the combination of two or more assets and objected to maximize the aggregate return and maximize the aggregate risk, which provides convenience and safety to investors. In this part of the study portfolio risk and return for each two company are calculated and analyzed. The weights required to make o portfolio is calculated by using risk minimizing weight formula. The weights for different companies are shown in appendix.

The study of portfolio helps to get the information to what extent the portfolio is able to minimize the aggregate risk. By this we can know which two companies are the best for the risk minimization motive. The best portfolio returns of two companies are also taken into consideration, which will show the effect of portfolio on the aggregate returns of the companies. The portfolio risk and return is shown in table 4.24.

Table: 4.24 Matrix showing Portfolio Return between each two selected companies.

COMPANIES	SCBL	NBL	YFL	MFL	NeICL	HGIC	STCL	BBCL	ULL	BNBL
SCBL	55.25									
NBL	60.42	79.57								
YFL	20.29	38.36	20.27							
MFL	24.90	45.31	12.10	9.27						
NeICL	8.07	-5.631	-1.05	-7.38	-5.51					
HGIC	22.75	13.38	9.08	11.83	-5.24	5.37				
STCL	23.64	7.56	7.53	6.16	-7.08	5.24	5.24			
BBCL	33.28	45.81	9.96	16.38	8.64	14.21	6.10	15.61		
ULL	38.64	50.36	16.45	21.28	7.24	17.81	1.69	9.87	25.64	1.13
BNBL	-3.27	5.71	-4.31	11.20	-2.56	2.10	4.37	14.37	8.12	10.69

Sources: Annex C & D

Table: 4.25 Matrix showing Portfolio Risk between each two selected companies.

COMPANIES	SCBL	NBL	YFL	MFL	NeICL	HGIC	STCL	BBCL	ULL	BNBL
SCBL	72.26									
NBL	33.98	103.69								
YFL	10.18	9.20	8.46							
MFL	21.29	18.38	8.90	18.39						
NeICL	25.21	9.14	9.14	9.99	27.21					
HGIC	31.73	25.53	9.29	10.11	32.01	34.76				
STCL	6.26	5.84	7.38	6.45	12.31	11.71	7.02			
BBCL	11.69	12.73	9.03	16.86	15.65	17.74	5.67	22.06		
ULL	30.69	35.95	9.56	16.36	17.42	19.90	11.59	24.15	38.62	
BNBL	17.10	16.81	5.07	13.09	15.52	16.99	31.13	15.70	25.30	20.01

Source: Annex C & D

Table: 4.26 Correlation matrix showing between selected companies.

COMPANIES	SCBL	NBL	YFL	MFL	NeICL	HGIC	STCL	BBCL	ULL	BNBL
SCBL	1									
NBL	0.94	1								
YFL	-0.05	-0.23	1							
MFL	-0.35	0.06	-0.29	1						
NeICL	0.23	0.48	0.82	0.60	1					
HGIC	0.36	0.63	-0.69	0.64	0.88	1				
STCL	0.40	0.51	-0.76	0.21	0.82	0.77	1			
BBCL	0.83	0.76	-0.52	-0.44	0.20	0.38	0.56	1		
ULL	0.15	0.24	-0.96	0.04	0.40	0.54	0.75	0.64	1	
BNBL	0.78	0.48	0.67	0.07	0.05	0.05	-0.12	-0.12	-0.72	1

Source: Annex C & D

Presented all the values of correlation are calculated by the formula of correlation coefficient mention in chapter 3. The relationship between risk and return of selected companies are presented in table 4.24 in the form of matrix.

The correlation between the returns of two securities says the mutual relationship between the returns of two securities says the mutual relationship between them whether their direction and degree is similar or different, if similar how similar and if different how different. The calculation of correlation coefficient is primly aimed to ease the way to portfolio analysis. Because the decision of investment on a portfolio of two securities negatively correlated securities helps to decrease the level of risk up to some extent. It also assists to make an identification of that investment portfolio which provides higher returns to investors with lower degree of risk.
From the table 4.25, it comes to know that the values of correlation coefficient varied between –1 to +1. But in real world, there doesn't exist perfectly positive (+1) and perfectly negative (-1) correlation between two variables.

The portfolio return between SCBL and NBL is 60.42 which is highest portfolio return among the portfolios; with correlation 0.94 & portfolio risk 33.98%. Though it has reduced the average risk 87.97 to 33.98 % which is not minimum and investor couldn't neglect it. So, only the aggressive investor can make an investment.

The 2nd highest portfolio returns of SCBL is 38.64 with ULL with portfolio risk is 30.69% and portfolio correlation is 0.15. The portfolio return of SCBL with YFL and MFL are 20.29 and 24.90 with portfolio risk 10.18 and 21.29 and negative portfolio correlation -0.05 and -0.35 respectively. Since the portfolio return & risk between SCBL & MFL is nearly equal so only the aggressive investor can make an investment to this portfolio. The investment portfolio between SCBL and YFL is good.

The poftfolio return of SCBL with NeCL is 8.07 which has positive correlation 0.23 and risk 25.21. The portfolio return of SCBL with HGIC is 22.75 with 0.36 correlation & portfolio risk 31.73. Since the portfolio return of SCBL with HGIC and NeCL is low than their portfolio risk so the investment portfolio should not good.

The portfolio SCBL & STCL yields 23.64 return with risk 6.26% & 0.36 correlation. The portfolio between SCBL & BBCL yields33.28 with risk 11.69 & correlation 0.83. The portfolio between SCBL & BNBL yields -3.27 with risk 17.10 & correlation 0.78. So it is not suitable to make portfolio between SCBL & BNBL.

The portfolio return between NBL & YFL is 38.36 & risk is 9.20 with negative correlation -0.23. The portfolio return between NBL & MFL is 45.31 and portfolio risk is 18.38 with negative correlation -0.06. Both the investments have neative correlation which reduce the risk but the investment portfolio between NBL & MFL has higher return than YFL so it is a good combination. The positive correlation (0.48) between the returns of two securities NBL & NeICL with risk 9.14 & negative return (-5.631) clearly indicates that this combination is not good, The investment portfolio between NBL & HGIC yield return 13.38 with higher risk 25.53. So the investment portfolio isn't good. The portfolio return of combination of NBL & STCL is 7.56 with risk 5.84 & correlation 0.51. Another combination of NBL with BBCL yields return 45.81 with risk 12.73 and correlation 0.76. So, this combination is used to take as beneficial. The combination of NBL with ULL yields 50.36 with risk 35.95 and correlation 0.24. So, this combination is also used to take as beneficial.

The portfolio return of combination of YFL & MFL is 12.10 with risk 8.90 & negative correlation (-0.29). Because of having negative correlation it helps to minimize the risk. Having lower risk than return with negative correlation this combination is useful to

invest. The portfolio return of combination of YFL & NeICL is negative (-1.05) with risk 9.14 & correlation 0.82. This portfolio is not suitable to make an investment on this portfolio. The portfolio investment between YFL & HGIC produces nearly equal return (9.08) & risk (9.29) with negative correlation (-0.69). The combination between YFL & STCL yields portfolio return 7.53 & risk 7.38 with correlation -0.76. Another investment portfolio between YFL & BBCL gives return of 9.96 with risk 9.03 & correlation -0.52. All these three portfolio investment has nearly equal of slightly greater risk value than return with negative correlation value. So, only the aggressive investor can make an investment to these portfolios. The portfolio between YFL & ULL yields 16.45% return with 9.56% risk & negative correlation (-0.96%). The portfolio between YFL & BNBL yields negative return (-4.31%) with 5.07% risk. This combination is not suitable. The combination between YFL & ULL is suitable to invest.

The combination between MFL & NeICL yields negative return with high degree of risk. The portfolio return of MFL & HGIC is 11.33 with risk 10.11 & correlation 0.64. The portfolio return of MFL & STCL is 6.16 with risk 6.45 & correlation 0.21. The combination between MFL & BBCL yields portfolio return of 16.38 with risk 16.86 & correlation -0.44. The combination between MFL & ULL yields portfolio return 21.28 with risk 16.36 & correlation 0.04. The combination between MFL & BNBL yields portfolio return 11.20 with risk 13.09 & correlation 0.07. Among all these portfolis only, the portfolis between MFL & HGIC and MFL & ULL are suitable to make an investment.

The portfolio invewstment of NeICL with HGIC, STCL & BNBL yields negative return. So these portfolios investments are not good. The portfolios investment of NeICL with BBCL yields return 8.64 and that is with ULL 7.24 with high degree of risk i.e. 15.65 & 17.42 respectively. So, only the aggressive investor can make portfolio investment on these combinations.

The portfolio investment between HGIC & STCL, HGIC & BBCL, HGIC & ULL and HGIC & BNBL gives the return 5.24, 14.21, 17.81 and 2.10 with risk 11.71, 17.74, 19.90 and 16.99 with correlation 0.77, 0.38, 0.54 & 0.05 respectively. So, only the aggressive investor can make the investment portfolios in above all cases.

The portfolio investment between STCL and BBCL yields 6.10 returns and risk 5.67 with correlation 0.56. Since the portfolio return and risk are nearly equal only the aggressive investors can make an investment portfolio. The portfolio investment between STCL & ULL yields portfolio return of 1.69 and risk 11.59 with correlation 0.75. The portfolio investment between STCL & BNBL yields portfolio return 4.37 and risk 31.3. In these two cases risk is higher than return, which clearly indicates that the portfolio has higher degree of risk than the portfolio with others.

The portfolio return of combination of BBCL and ULL is 9.87 with positive correlation 0.64 and portfolio risk 24.15. The portfolio return of combination of BBCL & BNBL is 14.37 with negative correlation -0.12 and risk 15.70. In these both cases return is less than risk, so, it shows that these portfolios have higher degree of risk though the negative correlation helps to reduce risk.

The portfolio return of combination of ULL and BNBL is 8.12 with portfolio risk 25.30 and correlation -0.72. Since the risk is higher than return. So this portfolio investment has higher degree of risk than return.

From the above analysis most of the portfolio combination (about 70%) has positive correlation coefficient. The correlation is not only positive but also in some of the cases there are higher degrees of risk than the average. There are also some companies, which have negative correlation coefficient with minimum degree of risk. Besides this the analysis also shows that the two companies' portfolio is helpful to decrease the level of risk up to some extent. But in some cases it is observed that the portfolio return is

negative, which can't be considered as beneficial from investors' point of view. At the end it can be said that, if the investors will able to analyze effect of portfolio on risk and return properly at that time the investor will be able to get good return by decreasing the level of risk up to some extent.

4.4 Comparison with Market:

4.4.1 Market Risk and Return

When taking about the stock market in Nepal, there is only one and that is NEPSE index. Overall market is represented by a single place. The market return, its Standard Deviation and Coefficient of Variation is calculated below.

Table: 4.27 Market Returns, its S.D. and C.V.

Year	NEPSE Index(NI)	R_m		
2003/04	356.04			
2004/05	333.36	-0.064	-0.060	0.004
2005/06	350.54	0.052	-0.072	0.005
2006/07	415.17	0.184	0.06	0.004
2007/08	515.33	0.241	0.117	0.014
2008/09	623.09	0.209	0.085	0.007
	R_m	0.622	$\sum$	= 0.034

1. Expected Return($\overline{R}_m$) = $\frac{R_m}{n}$ X0.124

2.Standard Deviation

3.Coefficient of Variation= $\frac{\pm}{R_m^z}$ X $\frac{0.09487}{0.124}$ X 0.77

Here the market return is 12.4 %, risk is 9.487 % and coefficient of variation is 0.77.

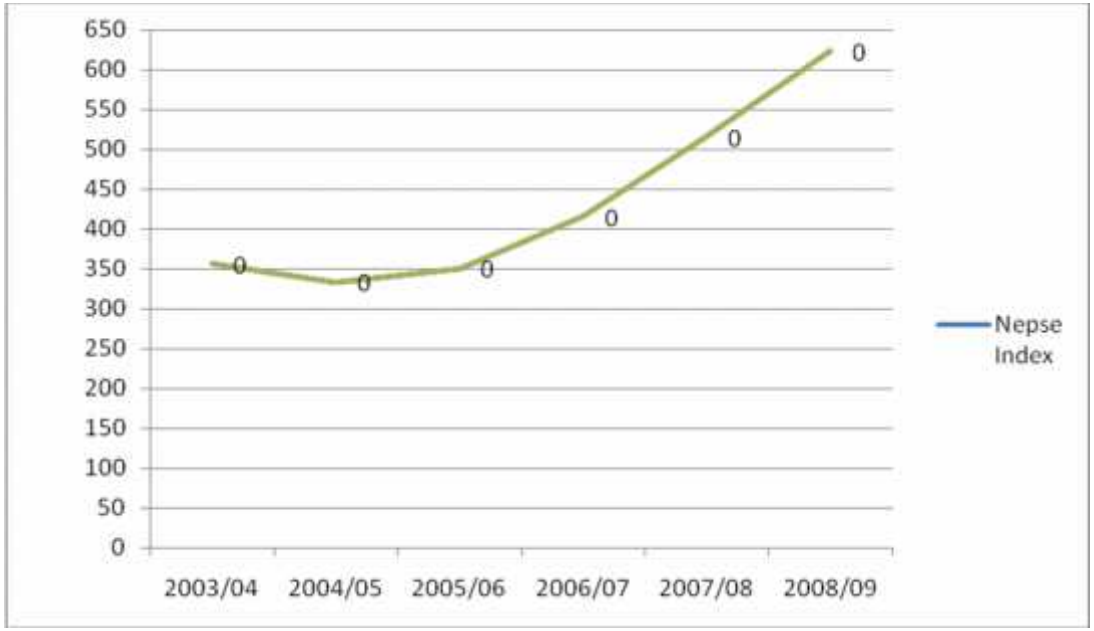


Fig: 4.1 Nepse Index Movement

From the above diagram it shows that the movement of NEPSE Index is in decreasing trend from 2003/04 to 2004/06 then it is increasing trend. In the year 2006/07 t0 2008/09 the increasing trend of NEPSE is very high.

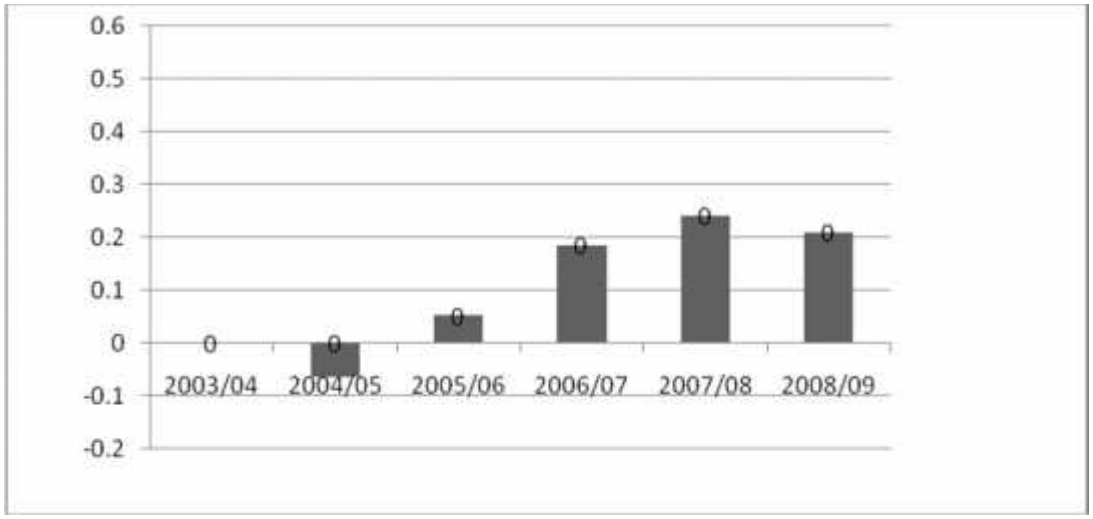


Fig: 4.2 Market Return Movement

From the above diagram, it shows that the market return is negative in fiscal year 2004/05 and then after it started to increase and reached to the peak in the fiscal year 2007/08. The market return decreased from fiscal year 2007/08 to 2008/09.

4.4.2 Testing of Hypothesis

The hypothesis is based on the test of significance of difference of mean (t-test). For this, expected return of selected companies is calculated in the following table:

Table: 4.28 Expected Return, S.D. and C.V. calculation of selected comapnies

S.N	Name of Company & Address	R_S	$R_S \; Z \overset{z}{R_S}$	$(R_S \; Z \overset{z}{R_S})^2$
1	Mahalaxmi Finance, Birgunj	20.27	-0.010	0.001
2	Yeti Finance Limilted, Hetauda	9.27	-0.120	0.015
3	Standard Charted Bank Limited	55.25	0.341	0.117
4	Nabil Bank Limited	79.57	0.584	0.341
5	Himalayan General Ins. Co.Ltd.	5.37	-0.159	0.026
6	Neco Ins. Company	-5.51	-0.268	0.072
7	Uni Lever Ltd, Ktm	25.64	0.045	0.002
8	Bottlers Nepal(Balaju), Ktm	1.13	-0.0201	0.041
9	Bisal Bazzar Company Ltd, Ktm	15.61	-0.160	0.026
10	Salt Trading Ltd, Ktm	5.24	-0.056	0.004
	∑=	211.84	∑=	0.645

We have,

1. Expected Return($\overset{z}{R_S}$)= $\frac{R_S}{n} = \frac{2.1184}{10}$ =0.21184=0.212=21.2

2. Standard Deviation $(\pm) \; X \frac{R_S \; Z \overset{z}{R_S}^{\;2}}{n \; Z1} \; X \sqrt{\frac{0.645}{10 \; Z1}} \; X 0.269$

3. Coefficient of Variation(C.V.)= $\frac{\pm}{\frac{z}{R_S}} = \frac{0.269}{0.212}$ =1.269=1.27

Null Hypothesis (H_o)=($\overset{z}{R}_S \text{ X} \overset{z}{R}_m$) i.e. There is no significant difference between the average return of selected companies and overall market return.

Alternative Hypothesis (H_1)=($\overset{z}{R}_S \mid \overset{z}{R}_m$) i.e. There is no significant difference between the average return of selected companies and overall market return.

Test Statistics,

Under H_o , $t \text{ X} \frac{\overset{z}{R}s \text{ Z} \overset{z}{R}_m}{\sqrt{S^2(\frac{1}{n_1} \Gamma \frac{1}{n_2})}}$

where, $\overset{z}{R}_S$ = Average return of portfolio of common stock of selected companies=0.212.

$\overset{z}{R}_S$ = Average return of market.

n_1=n_2=no. of observations.

S^2 =Extimated variance of population and equal to

$$S^2 \text{ X} \frac{n_1 s_1^{\ 2} \Gamma n_1 s_2^{\ 2}}{n_1 \Gamma n_2 \text{ Z} 2} \text{X} \frac{10*(0.269)^2 \Gamma 10*(0.1360)^2}{10 \Gamma 10 \text{ Z} 2} = 0.051$$

where S_1= Variance of return of common stock of selected companies=0.269.

S_2= Variance of return of the market return =0.1360.

Hence,

$$t = \frac{0.212 - 0.1804}{\sqrt{0.051\left(\frac{1}{10} + \frac{1}{10}\right)}}$$

$$= \frac{0.0316}{0.0102} = 3.098$$

The tabulated value of t for 9 degree of freedom at 5 % level of significance is 2.262.

Decision: Sine the calculated value of t is higher than the tabulated value at 5 % level of significance for 9 degree of freedom. So the null hypothesis H_o is rejected which means that there is significant difference between the average return of selected companies and overall market return. In other words, the average return on the common stock of various companies is not equal to the market return.

4.5 Major Findings

The major findings from the study of risk and return on common stock investment of listed companies from different sectors can be summarized as follows.

1. The average expected return from the listed companies is 21.185%. All the selected companies, except company from trading sector i.e. NeICL, has positive expected return. The highest expected return is from NBL, where as the lowest is from NeICL. There

are only 3 companies above the average expected return. Sector-wise comparison shows that banking sector has higher expected return than average which can be considered as better return, while Insurance sector has negative value. The Finance sector has average expected return 14.77%.

2. The average total risk of selected companies is 35.25%. Only 3 companies are above the average and rests of all are below the average. As per the degree of total risk NBL is the riskiest where as STCL the lowest riskiest company to invest is. Among the selected sector Banking, Finance and Manufacturing has the highest total risk and Trading has the lowest.

3. The average value of CV for selected companies is 2.73. The highest value of CV is 17.70 and lowest is for NeICL i.e. -4.94. Sector wise comparison shows that manufacturing sector has highest CV value and Insurance sector has lowest CV value. It shows that insurance sector is the most risky sector.

4. The highest value of beta (i.e. degree of SR) for the selected companies is of NBL i.e. 1.02 and the lowest is -0.822 for YFL. The average value of beta is 0.26. All selected companies have beta less than 1 expect NBL. So, except NBL stock all the companies' stock volatility is less than market volatility and so they are defensive stock. Higher the beta value, greater the sensitivity & reaction to the market movement. So, among the five sector stocks, stocks of banking sector are the highest market sensitivity stocks and finance stocks are lowest market sensitivity stocks.

5. The average of SR and USR for selected companies is 18.52 and 16.73 respectively. The highest value of SR is 57.14 for NBL and it is –6.95, the lowest for YFL. Such as, the highest value of USR (46.55) for NBL and it is only 0.54 that lowest for STCL. The banking sector can minimize the risk by well management whereas insurance sector can't do this from the view of USR. From the view of SR, banking sector has highest risk which is influence by market factors & can't reduce, whereas finance sector has less SR (1.63).

6. To compare with market portfolio risk return, hypothesis is set. This hypothesis is based on t-test. The conclusion is there is significance difference between the average return and overall market return. That mean significant different between common stock risk return and market return.

The study of relationship between expected return and different measures of risk reveals the following major results:

1. The returns of majority number of selected companies have positive correlation with the returns of other companies. The portfolio between less positively and negatively correlated companies help to decrease the level of risk so it is beneficial to make portfolio between that companies.
2. The sets of SCBL & YFL, SCBL & MFL, NBL & YFL, NBL & MFL, YFL & MFL, YFL & HGIC, YFL & STCL, YFL & BBCL, YFL & ULL, MFL & BNBL. BBCL & BNBL, STCL & BNBL, ULL & BNBL are negatively correlated but they have positive portfolio return. Some companies have higher degree and some have lower degree of positive portfolio return with high or low degree of portfolio risk. Because of having negative correlation values, it can be able to decrease the level of risk up to some extent.
3. There are 8 portfolios return whose value is negative and these portfolios are not good to invest. Among 47 sets of portfolios combination only 7 combinations have portfolio returns more than 25 %; only 9 sets of combination have portfolio return more than 15% and rest of all have the portfolio return value less than 15 %.
4. Among the portfolios 15 companies have the portfolio return higher than the portfolio risk. But among the portfolio the difference between risk and return is highest between portfolio NBL and BBCL. So, comparatively these two companies are the best to make the portfolio among others.

5. The overall effect of portfolio on risk and return shows mixed results. It means the portfolio helps to increase the returns in some cases but in some cases it has also decreased the return up to negative level. But in other hand, nearly in all cased it has helped to decrease the level of risk up to some extent.

6. The banking, finance has return higher than other sectors. Insurance sectors have return less than others.

7. The beta coefficient in this section of market sensitivity analysis, which measured the index of systematic risk. It may to used for the ranking the systematic risk of different assets. Beta coefficient of different companies showed one is aggressive i.e. NBL and others are defensive assets.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary and Conclusion

This chapter refers to the presentation of abstract of the whole study and intended to highlight the findings availed from studying the risk and return of listed companies from different sectors. Recommendation and conclusion for the investors and particular companies have also been made at a time.

The development in the field of financial management has led to the application of several new concepts and models to deal with various issues of corporate financial management. This time Risk and Return is getting considerable attention in Financial Management.

The relationship between risk and return is described by the precipitation of investors, about risk and their demand for compensation. No investors would like to invest in risky assets unless he is assured of adequate compensation for the acceptance of risk. Hence risk plays the control role when analyzing the investments. Generally investors expects two kinds of returns on stock investment, they are, dividend and capital gain from price appreciation of stock. Rational investors consciously examine the behavior of stock returns and ultimate risk associated with it and they invest their fund in an efficient portfolio from which they can realize higher return with lower risk. But in Nepalese context most of the investors are found investing their funds in single security rather than making investment in portfolio of security through diversification of risk.

Capital market facilitates risk sharing among these two-demand risk avoidance and those who supply it. There is market price of risk just as there is a market price of anything else. In other words, it can be said that the rate of return on investment is functions of many factors including the real cost of money, inflation, risk etc. The investors willingly offer more capital at higher rate of return. Whereas users of capital always show their readiness to use more capital at lower rate. Common stock is a source of raising the capital, which is considered to be riskier and lifeblood of capital market. Since common stock carries the partnership in proprietorship of an

organization, it has last priority for claim on liquidation. Hence investment in common stock of an organization is riskier than the others. Corporate firm neither insures the annual return, nor insures the return of principal. Therefore investment in common stock is very sensitive on the ground of the risk. A dividend to common stock is paid only if firm makes an operating profit after tax and preferable dividends. The company can return the principal in case of liquidation only to the extent of residual assets after satisfying to all its creditors and preference shareholders. Besides this investors have to sacrifice the opportunity return of their investment in common stocks which could be earned by investing somewhere else.

The study mainly focused on evaluating risk and returns associated with common stock investment of listed companies, from five different sectors, in Nepal. Other specific objectives are:

1. Overall comparative study of selected listed companies in terms of risk and return.
2. To measure and analyze the risk and return associated with the common stock of listed companies individually.
3. To analyze the relation between risk and return of the listed companies.
4. To examine the relation among the returns of the listed companies.
5. To determine the effect of portfolio on risk and return.

Though several studies have already been conducted in Nepal to evaluate the risk and return on common stock investment of some companies. Still there lacks study of risk and return on common stock investment of ten listed companies from different sectors and the comparative study between them on the basis of risk and return associated with them. This study is based on small samples of ten listed companies two from each banking, finance, insurance, trading and manufacturing whose financial statement are available for at least three years of study period has been selected as the sample of study.

In the process of this study various statistical as well as financial tools are got in to use for the accomplishment of the study. The statistical tools are used to calculate values of annual return, expected return, standard deviation, coefficient of variation, portfolio risk, portfolio return, correlation between stock and market return and correlation between stock return of different selected companies. Whereas financial tools used to get the value of *Beta,* S.R. and U.S.R portion, and risk minimizing weight etc. properties of portfolio is also formed on the basis of expected return and different measures of risk.

5.2 Recommendations

The recommendations based on major findings are offered as follows:

1. Investors who want high return should invest in SCBL, NBL, YFL, MFL, ULL and BBCL, irrespective of risk.
2. Risk-averse investors (investors, who don't want to take higher risk) should invest in YFL and MFL.
3. The investors who like to bear less risk in term of CV and beta should choose YFL, MFL, SCBL and NBL respectively to invest owing to its less CV and beta than others' stock. But due to negative return the investment on NeICL is not recommended instead of negative value of CV.
4. The companies NBL,SCBL and BNBL have higher unsystematic risk in comparison to others, so they should try to minimize the risk with proper management.
5. There is positive relationship between risks and return therefore the investors should select riskier company to get higher return and less risky company to get lower return.
6. Investors, who want high portfolio return, should invest between the companies SCBL and NBL, SCBL and BBCL, SCBL and ULL, NBL and YFL, NBL and MFL, NBL and BBCL which have portfolio return more than 30 %, irrespective of portfolio risk.

7. The portfolio return is negative between the investment combination in SCBL and BNBL, NBL and NeICL, YFL and NeICL, YFL and BNBL, MFL and NeICL, NeICL and HGIC NeICL and STCL, NeICL and BNBL. Therefore the investors should not select these companies (especially with insurance companies) for portfolio.

8. Risk-averse investors should make the portfolio of companies SCBL with NBL, YFL, STCL, BBBCL and NBL with YFL, MFL, BBCL, ULL and YFL with ULL.

9. Investors have to focus their mind both on risk and return. Before thinking about higher return they also have to think about the risk associated with the return. In the context of Nepal all investors don't use to make proper analysis before the common stock investment of any sectors, they are use to invest blindly due to influence factors like family member, friends, society etc. So, to make them conscious and for the secured investment, information about stocks, companies, its financial position, environment must flow frequently through different media.

10. Normally it is believed that the share price of bank and financial institutions always increase and there is every time benefit. But in reality it is not true. The price of share may decreases due to many reasons and factor affecting the stock market. Especially the political factors risk free rate of return, demand and supply of share etc. So before investing on the stocks of any companies, investors must have to think about the condition of market, the economic and non-economic factors affecting the market.

11. Foreign portfolio investment should be welcomed and government must arrange or make essential policies and environment for that.

12. Modern electronic system and provisions should be used by Nepal Stock Exchange.

13. Stock Exchange and broker facility should expand outside the capital also.

14. Brokers should be encouraged to generate their business from outside the Kathmandu valley and they should suggest the investors to make suitable portfolios.

15. Still greater potential is latent in Banking, Insurance, Finance, Manufacturing and Trading business, so focusing these sectors to provide information, training, study, booklets, journals, news, bulletins should be make active on regular basis.

16. Only bank and finance companies are directly regulating and monitoring by Nepal Rastra Bank. Bima Samiti regulates the insurance companies. But other sectors are not directly regulated and monitored by any mechanism. So, the regulating and monitoring systems for the listed companies should be implemented properly.

17. Investors must concern about the systematic risk of common stock. Sometimes stock having less total risk may have more systematic risk it can't be diversified away. Investor must care about it.

18. The perfect analysis of any business required the adequate data and information. So, all the listed companies as well as the companies, which have not listed in Nepal Stock Exchange, should avail the financial statement and other information more than five years.

19. Listing is not popular in all sectors. So, all sectors should be equally encouraged.

20. Investor's having limitation for investment for investment because there are limited industries. People have not more alternative for investment. The economic condition of a country is heavily depended on the policy of government. Therefore there should be alternative for investment so that the people may invest more on securities and for investment on security trend increment so government must manage the environment, infrastructure for the establishment of companies. The internal conflict of political sector, labor problem, threatening to the investors must be eradicated.

Calculation of Yearly Return of Selected Listed Company & Yearly Return, Expected Return & S.D. of Market.

Nabil Bank				MARKET			
Year	Closing Price	DPS	R= $\frac{DPS + P_t - P_{t-1}}{P_{t-1}}$	NEPSE Points	Rm($NEPSEP_T$-$NEPSEP_{T-1}$	(Rm-ERm)	(Rm-ERm)2
2003/04	735	30		356.04	..		
2004/05	735	50	6.80	333.36	-22.68	-76.09	5789.69
2005/06	474	65	-26.66	350.54	17.18	-36.23	1312.61
2006/07	1505	70	232.28	415.17	64.63	11.22	125.89
2007/08	2240	85	55.49	515.33	100.16	46.75	2185.56
2008/09	5050	100	129.91	623.09	107.56	54.35	2953.92
			397.82		267.05		12367.67

Expected Return on Market(ERm) $= \frac{R}{n}$ $= \frac{267.05}{5}$ = 53.41

Standard Deviation of Market(σm) $X\sqrt{\frac{[R - ER]^2}{n-1}}$ $X\sqrt{\frac{12367.67}{5-1}}$ = 55.61

:Yearly Return of other Selected Companies are calculated same above.

Standard Chartered Bank Ltd. & Market

SCBL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	1550	100				356.04				
2004/05	1640	285	24.19	-31.06	964.72	333.36	-22.68	-76.09	5789.69	2363.36
2005/06	940	110	-35.98	-91.23	8322.91	350.54	17.18	-36.23	1312.61	3305.26
2006/07	2345	120	162.23	106.98	11444.72	415.17	64.63	11.22	125.89	1200.32
2007/08	3775	150	67.38	12.13	147.14	515.33	100.16	46.75	2185.56	567.08
2008/09	5900	80	58.41	2.89	8.35	623.09	107.56	54.35	2953.92	157.07
			276.23		20887.84		267.05		12367.67	759.09

Expected Return (ER) $= \frac{R}{n}$ = 55.25

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 72.26

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 1.31

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = 1898.27

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = 0.472

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = 0.614

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = 34.135

Unsystematic Risk (USR = (S.D. - SR) = 38.12

Annex - B (1)

Nabil Bank Ltd. & Market

Nabil Bank Ltd.						MARKET				
Year	Closing Price	DPS	Return , (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	735	30	---	---		356.04				
2004/05	735	50	6.80	-72.77	5295.47	333.36	-22.68	-76.09	5789.69	5537.07
2005/06	474	65	-26.66	-106.23	11284.81	350.54	17.18	-36.23	1312.61	3848.71
2006/07	1505	70	232.28	152.71	23320.34	415.17	64.63	11.22	125.89	1713.41
2007/08	2240	85	55.49	-24.08	579.85	515.33	100.16	46.75	2185.56	-1125.74
2008/09	5050	100	129.91	50.34	2534.12	623.09	107.56	54.35	2953.92	2735.98
			397.82		43014.59		267.05		12367.67	12709.43

Expected Return (ER) $= \frac{R}{n}$ = 79.57

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 103.69

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 1.30

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = 3177.36

YFL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	176	43.2	---	---		356.04				
2004/05	190	27.5	23.58	14.31	204.78	333.36	-22.68	-76.09	5789.69	-1088.85
2005/06	191	10	5.8	-3.47	12.04	350.54	17.18	-36.23	1312.61	125.72
2006/07	210	0	9.94	0.67	0.45	415.17	64.63	11.22	125.89	7.52
2007/08	220	0	4.76	-4.51	20.34	515.33	100.16	46.75	2185.56	-210.84
2008/09	225	0	2.27	-7.0	49.0	623.09	107.56	54.35	2953.92	-380.45
					286.61		267.05		12367.67	-1546.90

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R,Rm)}{\pm R.\pm m}$ = 0.56

Beta Co-efficient (β) $= \frac{COV(R,Rm)}{\pm m^2}$ = 1.02

Systematic Risk (SR) $= \frac{COV(R,Rm)}{\pm m}$ = 57.14

Unsystematic Risk (USR = (S.D. - SR) = 46.55

Annex - B (2)

Yeti Finance Company Ltd. & Market

Expected Return (ER) $= \frac{R}{n}$ = 9.27

Standard Deviation(σ)	$X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$	= 8.46
Co-efficient of Variation(CV)	$= \frac{\pm R}{ER}$	= 0.913
Co-Variance With Market	$= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$	= -386.52
Correlation With Market return ($P_{R,m}$)	$= \frac{COV(R, Rm)}{\pm R . \pm m}$	= -0.822
Beta Co-efficient (β)	$= \frac{COV(R, Rm)}{\pm m^2}$	= -0.125
Systematic Risk (SR)	$= \frac{COV(R, Rm)}{\pm m}$	= -6.951
Unsystematic Risk (USR	= (S.D. - SR)	= 15.411

Annex - B (3)

Mahalaxmi Finance Company Ltd. & Market

MFL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	220	25	--	--	--	356.04				
2004/05	245	20	20.45	0.18	0.032	333.36	-22.68	-76.09	5789.69	-13.70
2005/06	270	10	14.29	5.98	35.76	350.54	17.18	-36.23	1312.61	-216.66
2006/07	264	30	8.89	-11.38	129.50	415.17	64.63	11.22	125.89	127.68
2007/08	260	20	6.06	-14.21	201.92	515.33	100.16	46.75	2185.56	664.32
2008/09	372	22.33	51.67	31.40	985.36	623.09	107.56	54.35	2953.92	1706.59
			101.36				267.05		12367.67	2268.23

Expected Return (ER) $= \frac{R}{n}$ = 20.27

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 18.39

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 0.907

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = 567.06

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = 0.554

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = 0.183

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = 10.20

Unsystematic Risk (USR = (S.D. - SR) = 8.19

NECO Insurance Company Ltd. & Market

NECO Insurance						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	181	10	--	--		356.04				
2004/05	130	0	-28.18	-33.69	1135.02	333.36	-22.68	-76.09	5789.69	2563.47
2005/06	112	0	-13.85	-19.36	374.81	350.54	17.18	-36.23	1312.61	701.41
2006/07	110	0	-1.79	-7.30	53.29	415.17	64.63	11.22	125.89	-81.91
2007/08	90	0	-18.18	-23.69	561.22	515.33	100.16	46.75	2185.56	-1107.51
2008/09	121	0	34.44	28.93	836.94	623.09	107.56	54.35	2953.92	1572.35
			-27.56		2961.28		267.05		12367.67	3647.81

Expected Return (ER) $= \frac{R}{n}$ = -5.51

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 27.21

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = -4.94

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = 911.95

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = 0.603

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = 0.295

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = 16.40

Unsystematic Risk (USR = (S.D. - SR) = 10.81

Annex - B (5)

Himalayan General Insurance Company Ltd. & Market

HGIC						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	285	15	--	--	--	356.04				
2004/05	190	0	-33.33	-38.70	1497.69	333.36	-22.68	-76.09	5789.69	2944.68
2005/06	175	0	-7.89	-13.26	175.83	350.54	17.18	-36.23	1312.61	480.41
2006/07	205	0	17.14	11.77	138.53	415.17	64.63	11.22	125.89	132.06
2007/08	189	0	-7.80	-13.17	173.45	515.33	100.16	46.75	2185.56	-615.70
2008/09	300	5.79	58.73	53.36	2847.29	623.09	107.56	54.35	2953.92	2900.12
					4832.79		267.05		12367.67	5841.57

Expected Return (ER) $= \frac{R}{n}$ = 5.37

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z ER]^2}{n-1}}$ = 34.76

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 6.47

Co-Variance With Market $= \frac{(R \, Z ER)(Rm \, Z ERm)}{n \, Z 1}$ = 1460.39

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = 0.756

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = 0.472

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = 26.26

Unsystematic Risk (USR = (S.D. - SR) = 8.50

Annex - B (6)

Uni Lever Ltd. & Market

ULL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	2000	55	--	--	--	356.04				
2004/05	1130	90	-39.00	-64.64	4178.33	333.36	-22.68	-76.09	5789.69	4918.46
2005/06	1400	120	34.51	8.87	78.68	350.54	17.18	-36.23	1312.61	-321.36
2006/07	1631	130	25.79	0.15	0.023	415.17	64.63	11.22	125.89	1.68
2007/08	2500	150	62.48	36.84	1357.19	515.33	100.16	46.75	2185.56	1722.27
2008/09	3400	210	44.40	18.76	351.94	623.09	107.56	54.35	2953.92	1019.61
			128.18		5966.16		267.05		12367.67	7340.66

Expected Return (ER) $= \frac{R}{n}$ = 25.64

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 38.62

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 1.51

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = 1835.16

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = 0.85

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = 0.59

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = 33.00

Unsystematic Risk (USR = (S.D. - SR) = 5.62

Annex - B (7)

Bottlers Nepal Ltd. (Balaju) & Market

BNBL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	600	10	--			356.04				
2004/05	700	32.7	22.12	20.99	440.58	333.36	-22.68	-76.09	5789.69	-1597.13
2005/06	554	5	-20.14	-21.27	452.41	350.54	17.18	-36.23	1312.61	770.61
2006/07	635	18	17.87	16.74	280.23	415.17	64.63	11.22	125.89	187.82
2007/08	500	13	-19.21	-20.34	413.72	515.33	100.16	46.75	2185.56	-950.90
2008/09	500	25	5	3.87	14.98	623.09	107.56	54.35	2953.92	210.33
			5.64		1601.92		267.05		12367.67	-1379.27

Expected Return (ER) $= \frac{R}{n}$ = 1.13

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 20.01

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 17.70

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = -344.82

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = -0.31

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = -0.11

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = -6.2

Unsystematic Risk (USR = (S.D. - SR) = 26.21

Annex - B (8)

Bishal Bazaar Company Ltd. & Market

BBCL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	1700	50				356.04				
2004/05	1405	75	-12.94	-28.55	815.10	333.36	-22.68	-76.09	5789.69	2172.37
2005/06	1400	85	5.69	-9.92	98.41	350.54	17.18	-36.23	1312.61	359.40
2006/07	1930	90	44.29	28.68	822.54	415.17	64.63	11.22	125.89	321.79
2007/08	2400	100	29.53	13.92	193.77	515.33	100.16	46.75	2185.56	650.76
2008/09	2575	100	11.46	-4.15	17.22	623.09	107.56	54.35	2953.92	-225.55
			78.03				267.05		12367.67	3278.77

Expected Return (ER) $= \frac{R}{n}$ = 15.61

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z ER]^2}{n-1}}$ = 22.06

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 1.41

Co-Variance With Market $= \frac{(R \, Z ER)(Rm \, Z ERm)}{n \, Z 1}$ = 819.69

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R, Rm)}{\pm R . \pm m}$ = 0.668

Beta Co-efficient (β) $= \frac{COV(R, Rm)}{\pm m^2}$ = -0.256

Systematic Risk (SR) $= \frac{COV(R, Rm)}{\pm m}$ = 14.74

Unsystematic Risk (USR = (S.D. - SR) = 7.32

Annex - B (9)

Salt Trading Corporation Ltd. & Market

STCL						MARKET				
Year	Closing Price	DPS	Return (R)	(R-ER)	$(R-ER)^2$	NEPSE Points	Market Return (Rm)	(Rm-ERm)	$(Rm-ERm)^2$	(R-ER) (Rm-ERm)
2003/04	330	25.02				356.04				
2004/05	300	10	-6.06	-11.30	127.69	333.36	-22.68	-76.09	5789.69	859.82
2005/06	315	20	11.67	-6.43	41.34	350.54	17.18	-36.23	1312.61	232.96
2006/07	315	12	3.81	-1.43	2.04	415.17	64.63	11.22	125.89	16.04
2007/08	316	20	6.67	1.43	2.04	515.33	100.16	46.75	2185.56	66.85
2008/09	325	23	10.13	4.89	23.91	623.09	107.56	54.35	2953.92	265.77
			26.22		197.02		267.05		12367.67	1441.44

Expected Return (ER) $= \frac{R}{n}$ = 5.24

Standard Deviation(σ) $X\sqrt{\frac{[R \, Z \, ER]^2}{n-1}}$ = 7.02

Co-efficient of Variation(CV) $= \frac{\pm R}{ER}$ = 1.34

Co-Variance With Market $= \frac{(R \, Z \, ER)(Rm \, Z \, ERm)}{n \, Z 1}$ = 360.36

Correlation With Market return ($P_{R,m}$) $= \frac{COV(R,Rm)}{\pm R.\pm m}$ = 0.923

Beta Co-efficient (β) $= \frac{COV(R,Rm)}{\pm m^2}$ = 0.117

Systematic Risk (SR) $= \frac{COV(R,Rm)}{\pm m}$ = 6.480

Unsystematic Risk (USR = (S.D. - SR) = 0.54

Annex - B (10)

Calculation of ER, S.D.,COV, Correl^{n},Risk Minimizing Weight, Portfolio Risk & Return
Standard Charted Bank Ltd. & Himalayan General Insurance Company Ltd

SCBL						HGIC					
Year	Closing Price	DPS	Return (Ri)	(Ri-ERi)	$(Ri-ERi)^2$	Closing Price	DPS	Return (Rj)	(Rj-ERj)	$(Rj-ERj)^2$	(Ri-ERi) (Rj-ERj)
2003/04	1550	100				285	15	--	--		
2004/05	1640	285	24.19	-31.06	964.72	190	0	-33.33	-38.70	1497.69	1202.80
2005/06	940	110	-35.98	-91.23	8322.91	175	0	-7.89	-13.26	175.83	1209.71
2006/07	2345	120	162.23	106.98	11444.72	205	0	17.14	11.77	138.53	1259.15
2007/08	3775	150	67.38	12.13	147.14	189	0	-7.80	-13.17	173.45	-159.75
2008/09	5900	80	58.41	2.89	8.35	300	5.79	58.73	53.36	2847.29	154.21
					20887.84			26.85		4832.79	3666.12

1.Expected Return (ER_{SCBL}) $= \frac{R}{n}$ = 55.25

2.Expected Return (ER_{HGIC}) $= \frac{R}{n}$ = 5.37

3.Standard Deviation (σ_{SCBL}) $X\sqrt{\frac{[R\,Z\,ER]^2}{n-1}}$ = 72.26

4.Standard Deviation (σ_{HGIC}) $X\sqrt{\frac{[R \, Z ER]^2}{n-1}}$ = 34.76

Cont...

5.Co-Variance($COV_{SCBL,HGIC}$) $= \frac{(Ri \, Z ERi)(Rj \, Z ERj)}{n \, Z 1}$

$= \frac{3666.12}{5 \, Z 1}$

= 916.53

6.Correlation($P_{SCBL,HGIC}$) $= \frac{COV(Ri, Rj)}{\pm i . \pm j}$

$= \frac{916.53}{72.26 X 34.76}$

= 0.36

7.The Portfolio Minimizing Weight For SCBL $= \frac{\pm j^2 \, Z \, ° ij . \pm i . \pm j}{\pm j^2 \, \Gamma \pm j^2 \, Z \, ° ij . \pm i . \pm j}$

$= \frac{291.73}{4596.71}$

= 0.06

8.The Portfolio Minimizing Weight For HGIC = 1-wi =1-0.06

= 0.94

9.Portfolio Risk (σp) $= \sqrt{wi^2 . \pm i^2 \, \Gamma \, wj^2 . \pm j^2 \, Z 2 \pm i . \pm j . ° ij . wi . wj}$

$= \sqrt{0.06^2 x 72.26^2 \, \Gamma \, 0.94^2 x 34.76^2 \, Z 2 x 72.26 x 34.76 x 0.36 x 0.06 x 0.94}$

= 31.73

10.Portfolio Return (Rp) $= \sqrt{wi . ERi \, \Gamma \, wj . ERj}$

$= \sqrt{0.6 x 5.37 \, \Gamma \, 0.94 x 72.26}$

= 22.75

:Others are also calculated as same above.

Annex-C

S. No.	Name of Finance Company	FY 2003/04				FY 2004/05				FY2005/06			
		HP	LP	CP	DPS	HP	LP	CP	DPS	HP	LP	CP	DPS
1	SCBL	2100	1000	1550	100	1760	1380	1640	285	942	745	940	110
2	Nabil BL	1500	465	735	30	875	700	735	50	430	420	474	65
3	HGIC	310	235	285	15	205	175	190	0	190	165	175	0
4	NeICL	300	180	181	10	180	120	130	0	130	110	112	0
5	YFL	210	170	176	43.2	245	190	190	27.5	201	185	191	10
6	MFL	220	210	220	25	280	245	260	20	270	250	270	10
7	ULL	3325	2100	2000	55	1635	1350	1130	90	1400	1186	1400	120
8	BNBL	731	500	600	10	700	500	700	32.7	554	300	554	5
9	BBCL	1900	1700	1700	50	1500	1400	1405	75	1575	1400	1400	85
10	STCL	360	300	330	25.02	315	300	300	10	315	300	315	20

S. No.	Name of Finance Company	FY 2006/07				FY 2007/08				FY 2008/09			
		HP	LP	CP	DPS	HP	LP	CP	DPS	HP	LP	CP	DPS
1	SCBL	2350	1553	2345	120	3775	2200	3775	150	5900	3058	5900	80
2	Nabil BL	1515	1000	1505	70	2300	1500	2240	85	5050	2025	5050	100
3	HGIC	207	170	205	0	215	171	189	0	300	198	300	5.79
4	NeICL	112	95	110	0	105	87	90	0	128	86	121	0
5	YFL	225	191	210	0	220	210	220	0	231	210	225	0
6	MFL	280	220	264	30	280	248	260	20	372	250	372	22.33
7	ULL	1635	1350	1631	130	2500	1630	2500	150	3450	2510	3400	210
8	BNBL	635	581	635	18	500	500	500	13	500	350	500	25
9	BBCL	1942	1400	1930	90	2400	2000	2400	100	2575	2400	2575	100
10	STCL	315	315	315	12	316	315	316	20	325	316	325	23

(Source:www.nepalstock.com)

Annex D

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