

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 years 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 led 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 enterprises so far privatize are not doing well, some of them are closed and still some of them 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 one and 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 market market 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 on 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 launched its own website; called www.nepalstock.com, 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 agreement with British Company Comdaq Limited in Nov.2006 under the Asian Development Bank (ADB) Loan Assistance Project Corporate and Financial Governance (CFG) at the cost of 300 thousands US Dollars. The system has helped eliminate all possible human errors as seen in the open outcry trading procedures. Several international practices have been incorporated to make the system internationally compatible and modifications have also been made to customize the existing rules and regulations of the 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 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 pays off in the short term usually less than 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

¹Sharpe, William F, Gordon J. Alexander and Jeffery. V. Bailey, *Investments*, 5th edition. U.S.A.: Prentice Hall, p.1,1955

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

“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.”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 likelihood 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 reaping the fruits of 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 investors 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 in the different stocks by creating a

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

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

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

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

Systematic risks are risk brought 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 their returns in forms of increment in wealth i.e. capital gain/appreciation and in regular cash flow i.e. dividends with minimum risk. So risk and return dimensions and its evaluation are 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 dwindle. 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. Scrutinizing the increment of NEPSE index, Nepal Rastra Bank has blocked to give margin lending on share for few months. But the investors and

specialists are blaming the government that it has implementing the policies without sufficient study."⁵

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 the 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 institution issues shares, it creates huge demand rather than supply, but if any manufacturing and processing company/organization

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

⁶ Weston, J. Fred and Brigham Eugene F., "Essential of Management Finance", New York: The Dryden ress., P-215, 1996

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 metal, jewelries etc. They feel investment in stock is just like shooting in the 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 programs. 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 stock 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?
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 investments which are listed in NEPSE.

1. To measure and analyze the risk and return associated with the common stock of sampled companies individually.
2. To analyze the relation between risk and return of the listed companies.
3. To know the optimum portfolios of the sampled companies.
4. To provide useful suggestions to the different sector on the basis of SR and USR.

1.4 Significance of the Study

The significance 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 taken 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 2005/06 to 2010/11 A.D.
- Data and information taken from the NEPSE is based upon the Annual Report published by NEPSE in the year 2010/11. 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 data and information 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: This contains the introductory part of the 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: This is 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: This 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: This 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: This includes Summary, Conclusion and Recommendation of the study.

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 of 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 Review

2.1.1 Investment

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. Alexander and Jeffery. V. Bailey, *Investments*, 5th edition. U.S.A.: Prentice Hall,

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 all 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 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 shares include ordinary shares or common shares, preference shares or common stock and common stock provide ownership

⁹ Cheney, John M. and Moses Edward A., “*Fundamentals of Investment*, 5th ed, St. Paul: West Publishing Co., P-29”

rights to investors. Debentures or bonds provide loan capital to the company, and investors get the status of lenders.

2.1.2 Common Stock

“The study is focused on the common stock investment that’s why light is thrown on it. It is sources of long term financing and an ownership security. Common stock certificates are legal documents that evidence ownership or equality in a company that is organized as a corporation, and they are also marketable financial instruments.

Common stock is recipient of the residual income of the corporation. Through the right to vote, holders of common stock have legal control of the corporation. An element of high risk is involved with common stock investment due to its low priority of claims at liquidation. When investors buy common stock they receive certificate of ownership as a proof to their being part of the company. The certificate states the number of shares purchased and their value per share” (Bhalla, 1997:196)

Common stock holders of a corporation are its residual owners, their claim to income and asset comes after creditors and preference share holders have been paid in full. As a result, a stockholder’s return on investment is less certain than the return to lender or to preference stock holder. On the other hand, the share of the common stock can be authorized either with or without par value. The par value of the stock is merely a stated figure in the corporate charter and is of little economic significance. A company should not issue stock at a price less than par value because stock holders who bought stock for less than par value would be liable to creditors for the difference between the below price they paid and the par value (Van Horne, 1997:98). But in Nepal, as per the

provision of Nepal Company Act 2057, no common stocks are allowed to issue below par value. The par value must be either Rs. 100 or any multiple of Rs.

10. Common Stock has one important investment characteristics and is important speculative characteristics. Their investment value and average market price tend to increase regularly but persistently over the decreases as their net worth builds through the reinvestment of undistributed earnings. However, most of the time common stocks are subject to irrational and excessive price fluctuation in both directions, as most people to speculate or gamble i.e. give way to hope fear and greed.

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.

2.1.3 Risk & Return on Common Stock Investment

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 full. 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, Gary J. R. and Wert James E., “An introduction to Financial Management”, Addison Wesley-Publishing Company, Menlo Park, California, P-2, 1984

¹¹ Van Horne, 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 is the reward to the investors for bearing certain risk. Return is defined as the dividend yield plus the capital gain or 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 increase 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:-

$$\text{Return}(r) = \frac{\text{Wealth at the end of Period} - \text{Wealth at the beginning of Period}}{\text{Wealth at the beginning of Period}} \dots\dots 2.1$$

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

¹³Cheney, John M. and Moses Edward A., “*Fundamentals of Investment, 5th ed, St. Paul: West Publishing Co., P-29*”

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

¹⁵Sharpe, 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

$$\text{HPR}_t = \frac{P_{t+1} - P_t + C_{t+1}}{P_t} \dots\dots\dots 2.2$$

Where,

- HPR_t = Holding 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.

“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 one year is as

follows”¹⁷

Return = Dividend Yield + Capital gain.

$$R = \frac{DIV}{P_t} + \frac{P_{t+1} - P_t}{P_t} \dots\dots\dots 2.3$$

Where,

R = Rate of Return

$\frac{DIV}{P_t}$ = Dividend Yield (in percentage)

$\frac{P_{t+1} - P_t}{P_t}$ = Capital Gain Yield (in 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.

$$\bar{R} = \frac{[R_1 + R_2 + \dots\dots\dots + R_n]}{n} \dots\dots\dots 2.4$$

R = Average rate of return.

$R_1 + R_2 \dots\dots\dots + R_n$ = Observed rates of return in period 1,2.. .to n.

N = Total number of periods.

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

$$\text{Return}(r) = \frac{\Delta NAV_t - D_t}{NAV_{t-1}} \dots\dots\dots 2.5$$

¹⁶Cheney, John M. and Moses Edward A., “*Fundamentals of Investment, 5th edition, St. Paul: West Publishing Company, P-30*”

¹⁷Pandey, 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

$$E(r) = \sum_{t=1}^n P_t \times R_t \dots\dots\dots 2.6$$

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

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

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

investors perceive risk in many different ways. A stockholder seeks risk if company's yield is below his expectations and below the required rate. 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 rate 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, it 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 disadvantage 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:

$$\sigma(R) = \sqrt{\sum_{t=1}^n P_t (R_t - \bar{R}_t)^2} \dots\dots\dots 2.7$$

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'.

σ = 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.

$$\text{Coefficient of Variation(C.V.)} = \frac{\text{S.D.}}{\text{Expected Return}} \dots\dots\dots 2.8$$

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

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

$$\text{Total Risk} = \text{Systematic Risk} + \text{Unsystematic Risk} \dots\dots\dots 2.9$$

"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

²⁰Pandey, I.M., "Financial Management", Tata Mc. Graw Hill Publishing Company Ltd., India., P-219, 1997

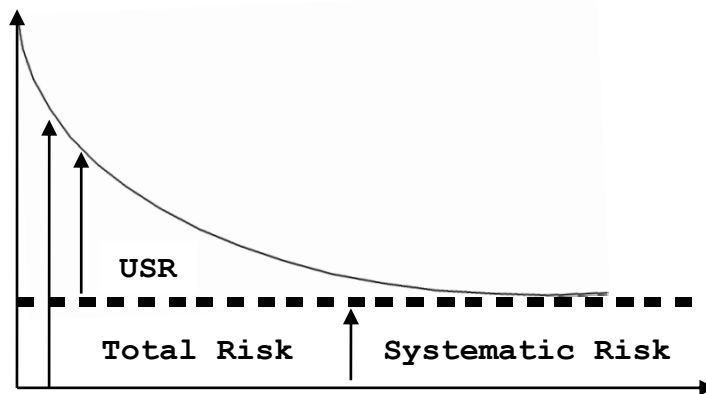
²¹Vanhome, James C. and John M. Wachwicz John M., "Fundamental of Financial Management", Prentice Hall of India Pvt. Ltd., New Delhi. P-35, 1997

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

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

Fig: 2.1 Total Systematic & Unsystematic Risk.



2.1.4 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 be 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 $\text{Var}(R)$

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

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

²²Pandey, I.M., "Financial Management", Tata Mc. Graw Hill Publishing Company Ltd., India., P-203, 1997

$$D.P. = \frac{\text{Unsystematic Risk}}{\text{Total Risk}} = \frac{\text{Var}(e)}{\text{Var}(r_i)} \dots\dots 2.10$$

The percentages of total risk that is systematic (undiversifiable 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.

$$\rho^2 = \frac{\text{Systematic Risk}}{\text{Total Risk}} \dots\dots 2.11$$

$$\therefore \rho^2 = \frac{\beta_j^2 \text{Var}(R_m)}{\text{Var}(r_j)}$$

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.

$$\beta_j = \frac{\text{Cov}_{jm}}{\sigma_m^2}$$

Where,

β_j = Index of systematic risk.

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

σ_m^2 = 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.

2.1.5 Relationship between Risk & Return

Cheney & Moses has reflected 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.

2.1.6 Portfolio

Investors rarely place their entire wealth into a single asset or investment rather they construct a portfolio or a group of investments. Therefore, it is needed to extend analysis of risk and return to include portfolio. A combination of two or more securities or assets is portfolio. Portfolio management is related to the efficient portfolio investments in financial assets. It has following two type of objectives.

Primary Objective

- ✓ To minimize risk
- ✓ To maximize return

Secondary Objective

- ✓ Regular return
- ✓ Safety of investment
- ✓ Stable income
- ✓ Tax benefit
- ✓ Appreciation of capital

The expected return on the portfolio is simply a weighted average of the expected returns of the individual securities that they are included in the portfolio. The weights are equal securities (the weight must sum up to 100% or 1). The general formula for expected return of a portfolio (\mathbf{R}_p) is as follows.

$$\bar{R}_P = \sum_{j=1}^n W_j \bar{R}_j$$

Where,

\bar{R}_P = Expected return of a portfolio

W_j = Proportion of total funds invested in security j

\bar{R}_j = Expected return for security j

n = Total no. of different securities in the portfolio

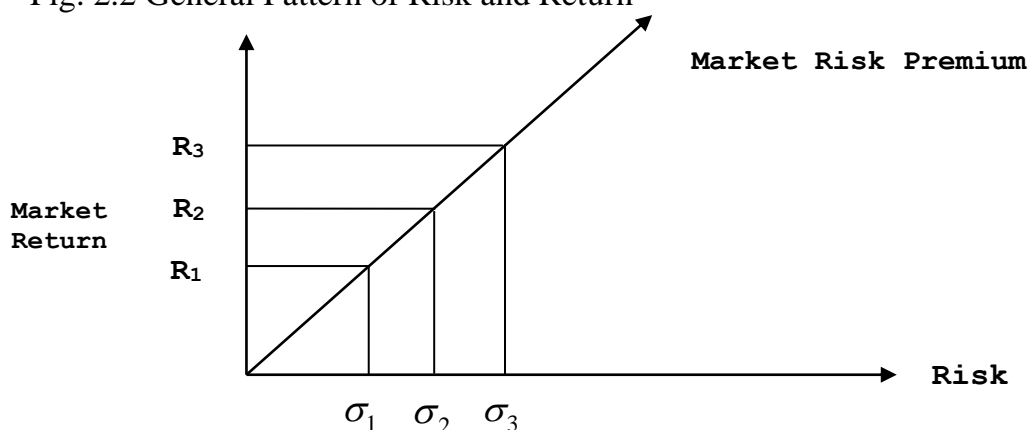
A portfolio's (or a single asset's) total risk is equal to the sum of its systematic risk and unsystematic risk. In the case of the market portfolio, there is no unsystematic or diversifiable risk, and total risk equals systematic risk. Since it is possible to eliminate all unsystematic risk through 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 naive diversification. Studies have shown that between 10 to 15 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' perceptual 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 σ_1 return is supposed to be of R_1 magnitude but when the level of risk increase from σ_1 to σ_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.

2.1.7 Capital Asset Pricing Model (CAPM)

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 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

$$E(R_i) = R_f + (\bar{R}_m - R_f)\beta_i \dots\dots\dots 2.13$$

Where,

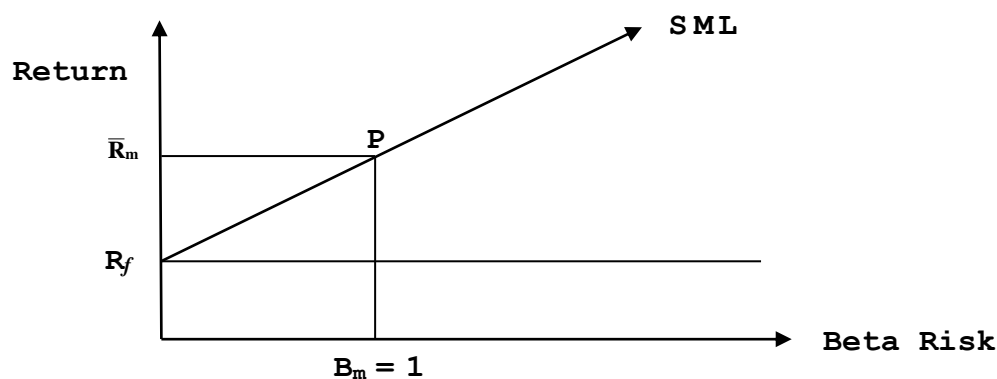
$E(R_i)$ = The expected rate of return of assets I,

R_f = The nominal risk free rate of return.

B_j = Beta co-efficient of stock i

R_m = The expected rate of return on the market portfolio

Figure 2.3: The Capital Market Line.



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 and Web Articles

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 and in the websites, 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

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

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 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.
- Better 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 Ojha²⁴ 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."

Radheshyam Pradhan, in 2003²⁵ carried out a study entitled "Stock market Behaviors on a small capital market: A case study in Nepal".

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

Pradhan gave following from his study:

1. Dividend per share and market price per share was 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

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

²⁵Mr. Radheshyam Pradhan, "Stock Market Behavior in Nepal", Buddhi Prakashan, Biratnagar, 2003, P-25

market price per share.

The Journal published on SEBON²⁶ which is related to this study has reviewed here.

Equity issuance formed a significant portion of total issues which accounted for 97% (i.e. 1728.83 mil.) 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 as it is only around 3% (i.e. 50 mil.).

The declining in the level of NEPSE Index from 963.36 in F.Y 2007/08 to 362.85 in 2010/11 shows the decreasing in confidence level of the investor's on the Financial Crisis held in 2007/08.

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. Equity transaction volume of Banking sector accounts for 51.49% of the total volume transected. Likewise while combining banking, finance and insurance sectors, the equity transaction volume in cumulating figure accounts for 78.81% of the total volume transected in F/Y 2010/11. 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.

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.

Web Articles:

One article written by Kiran Bista is entitled like this “Stock Market and Painful Investment in Nepal”. “Stock market is one of the major financial

²⁶Annual Report, SEBON 2010/11, P-41, www.sebon.gov.np

markets of the State and has its direct relationship with the State's economy. Changes in the economy have a large impact on interest rates and inflation which affects the stock or bond markets. Thus, Stock market is often observed as an indicator or the mirror of economic growth and development of the Country. Considering Nepal Stock Market as an economic indicator would be nothing but a blunder because the Nepalese Stock Market graphs little on the function of demand and supply or in the crawling development of the State but draws more on the pooling and the matching of so called big investors and other investing groups who are engaged in conducting malpractices. Stock market being a sensitive fraction of economy and a State's financial vertebral column yet can be easily influenced by market thugs for their personal benefits. But, the most disappointing scene comes to view when the Government fails to act against them or wedge loop holes, but rather observes the stock market with an unconstructive vision and labels it as a gambling house. And the Central Bank adds a little more by blindly imposing new clauses to demoralize investors and to slow down the market pace.

This unnatural and an uncommon market correction practice of NRB which has been observed in past years with a frequent change over marginal loan clauses and monetary policies specially in the bullish period clearly signifies the pessimistic outlook of the Government towards the Stock Market. Furthermore, the clinging market holds itself hard below the 500 index for several months suffocating many small investors, whereas no responsible bodies have shown its keen interest for markets recompense even by providing temporary flexibility in the clauses or by providing some other possible ways to grant a relief. Similarly, the weak management and irresponsibility of Nepal Stock Exchange and Central Bank can be observe when it blindly ignores the correlation of the primary and the secondary market as it repeatedly grants permission to offer IPO's even when the secondary market struggles in its

bearish age. If only IPO's are proffered in a systematic and a scientific way understanding the situation of secondary market then sudden drop in stock's graph can be minimized which is obligatory and a relief doer for both big and small investors”²⁷

Another article written by Surya Bahadur G.C. on volatility says like this “Modeling and forecasting volatility of capital markets has been important area of inquiry and research in financial economics with the recognition of time-varying volatility, volatility clustering, and asymmetric response of volatility to market movements. Given the anticipated growth of the Nepalese stock market and increasing interest of investors towards investment in Nepalese stock market, it is important to understand the pattern of stock market volatility. In the paper, the volatility of the Nepalese stock market is modeled using daily return series consisting of 1297 observations from July 2003 to Feb 2009 and different classes of estimators and volatility models. The results indicate that the most appropriate model for volatility modeling in Nepalese market, where no significant asymmetry in the conditional volatility of returns was captured, is GARCH(1,1). The study revealed strong evidence of time-varying volatility, a tendency of the periods of high and low volatility to cluster and a high persistence and predictability of volatility in the Nepalese stock market.”²⁸

Through the report of newspaper and web articles we can conclude that the Nepalese people are now giving interest on investing shares but in some way they are also scared of this market too. 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 & labor environment, awareness of investors

²⁷Mr.Kiran Bista, <http://www.articlesbase.com/investing-articles/stock-market-and-painful-investment-in-nepal-3413704.html>

²⁸ Surya Bahadur G.C., *The Journal of Nepalese Business Studies* Vol. V, No. 1, 2008, December Page: 76-84

and the regulations of Nepal Rastra Bank over financial institutions are the basis of increment of investors attitude towards banking sector which should increase NEPSE Index if that happens.

2.3 Review of Thesis

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 master 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.”²⁹ 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 the 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

²⁹Gopal P. Bhatta, “Assessment of the Performance of Listed Companies in Nepal” An unpublished Master Degree Thesis (T.U. Central Dept.), (1995)

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 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 Pandey³⁰ 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

³⁰Pramina Pandey “Risk and Return Analysis of Common Stock Investment” An unpublished Master Degree Thesis (T.U. Shanker Dev Campus), (2001).

return on the common stock of NLGI is maximum i.e. 65.39% the high rate of 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.

Shanker Kumar Mishra (2002)³¹ analyzed “*Risk and Return on Common Stock Investment of Commercial Banks in Nepal*” with special reference to five listed commercial banks. The major objective of this study was to promote and protect the interest of the investor by regulation the issuance sales and distribution of securities and purchases, sale or exchange of securities. He also intends to supervise and monitor the activities of the stock exchange and of other related firms carrying on securities business. In addition he tried to render contribution to the development of capital market by making securities transactions fair health, efficient and responsible.

³¹Shanker Kumar Mishra “Risk and Return Analysis on Common Stock Investment of Commercial Banks in Nepal” An unpublished Master Degree Thesis (T.U. Shanker Dev Campus), (2002).

Followings are the findings of the Study.

It was noticed that there is a positive correlation between risk and return character of the company. Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing market. Situation and the company proper regulation should be introduced so that there is more transparency in issuance, sales and distribution of the securities. Investors do not have any idea about the procedures of the securities issuance. Neither company nor the stock brokers transmit any information to the investors about the current market situation and hence it becomes difficult for common investors to invest in the securities. Both government authorities and the stock exchange regulator body should try to promote healthy practices so that the stock brokers do not give false information to the investors for their personal benefit which is a common practice in Nepal. Investors should get regular information about the systematic Risk (Beta), Return on Equity and P/E Ratio of various listed companies in some way; it is given in economic times for the companies listed in Nepal Stock Exchange. Security Exchange Board of Nepal should make this mandates that it is easier for the investors to calculate risk and return of portfolio and transparency is increased.

Lila Nath Pandey (2003)³² 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

³²Lila Nath Pandey, “A Study on Risk and Return Analysis of Common Stock Investment” An unpublished Master Degree Thesis (T.U. Central Dept.), (2003).

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.

The study performed by Buddhi Raj Tamang in the year (2003)³³ 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 the highest and that of Bank of Kathmandu is the 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 one 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 conducted a thesis in the year (2004)³⁴ 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 their data from the F/Y 1999/00 to 2003/04.

³³Buddhi Raj Tamang “Risk and Return Analysis of Commercial Banks in Nepal” An unpublished Master Degree Dissertation (T.U. Shanker Dev Campus), (2003).

³⁴Sita Sapkota “Risk and Return Analysis on Common Stock Investment” An unpublished Master Degree Dissertation (T.U. Nepal Commerce Campus), (2004).

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 the lowest 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.

“Risk and Return Analysis of listed companies” a research carried out by Mr. Mohan Purna Satyal (2005)³⁵ is also relevant to our study. The objective of his study is to analyze risk and return on 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 Lever Limited is the most risky as well as it provides more return where as Himalayan Bank is the best for risk averters as it has least C.V.

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

³⁵Mohan Purna Satyal “Risk and Return Analysis of Listed Companies” An unpublished Master Degree Thesis (T.U. Shanker Dev Campus), (2005).

Hari Prasad Neupane (2008)³⁶, in his study report “*Risk and Return Analysis of Common Stock Investment of Listed Commercial Banks*” with special reference to three listed commercial banks. The main objective of the study is to identify whether stock of selected commercial banks are overpriced, under priced and equilibrium price. To identified optimum portfolio of the banks and analyze the diversifiable and undiversifiable risk of the banks.

Major findings of the study are as follows:

- ❖ The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on common stock of NABIL is maximum (52.97%). Similarly expected return of C.S. of HBL is (29.52%) and NIBL is 37.95%
- ❖ Beta coefficient explains the sensitivity or volatility of the stock with market. Higher the beta higher the volatility in the contest, common stock of HBL is most volatile i.e. $\beta = 1.1251$ and common stock of EBL is least volatile i.e. $\beta = 0.3230$. The bank’s stock, having the beta less than beta coefficient of market (i.e. $\beta = 1$) defensive stock. We find NIBL and HBL have aggressive type of common stock. Among them most aggressive seems to be HBL with highest beta and least aggressive is EBL with the lowest beta among three bank’s common stock.
- ❖ Systematic risk cannot be diversified through creation of portfolio. It is occurred due to market factors. Unsystematic risk can be diversified through creation of portfolio. It is occurred due to internal management factors. This study shows that EBL has high proportion of unsystematic risk i.e. 77.18% which can be minimized from internal management. Whereas HBL has high proportion of systematic risk i.e. 97.49%. This cannot be minimized from internal management. C.S. of EBL is the best among these

banks due to its highest proportion unsystematic risk.

³⁶Hari Prasad Neupane “*Risk and Return Analysis of Common Stock Investment of Listed Commercial Banks*” An unpublished Master Degree Thesis (T.U. Shanker Dev Campus), (2008).

Dikpal Shrestha (2009)³⁷, in his study report “*Portfolio Analysis on Common Stock Investment of Joint Venture Banks in Nepal*” with special reference to five listed joint venture banks. The main objective of the study is to determine whether the shares of selected joint venture banks in Nepal are overpriced, underpriced or correctly priced and to identify the correlation between returns of these banks.

Major findings of the study are as follows:

- ❖ From the analysis of required rate of return and expected rate of return, it was found that NABIL, SCBL, HBL & EBL’s common stocks are under priced and NBBL’s & stocks are overpriced.
- ❖ While creating the portfolio between the two assets of all the sample banks, the optimal portfolio of NBBL and EBL gives the maximum expected return that is 62.37% whereas, the portfolio of NABIL & EBL gives the lowest expected return i.e. 3.37%. Considering the portfolio risk, the portfolio of NABIL and HBL has maximum S.D. i.e. 69.74% but the portfolio of HBL & NBBL has the lowest S.D. which is 35.79% which indicates HBL & NBBL is good to invest due to low S.D.
- ❖ Correlation between NABIL & HBL is found 0.9942, which is highest between mentioned banks under the study and the correlation of SCBL & NBBL is 0.5839 that is the lowest correlation. However, all the banks are positively correlated but they are neither perfectly correlated nor negatively correlated.
- ❖ Considering the Sharpe’s performance measure, the portfolio of HBL & NBBL has the best performance because of the highest risk premium return per unit of total risk that is 1.4015 and the portfolio of NABIL & EBL is

worst due to the lowest risk premium return per unit i.e. -0.0185.

³⁷Dikpal Shrestha, “*Portfolio Analysis on Common Stock Investment of Joint Venture Banks in Nepal*” An unpublished Master Degree Thesis (Makawanpur Multiple Campus.), (2009).

Laxmi Prasad Wagle (2010)³⁸, in his study report “*Analysis of Risk and Return on Common Stock Investment of Commercial Banks in Nepal (With References to NIBL, HBL and NABIL)*” with special reference to three listed commercial banks. The main objective of the study is to identify whether stock of selected commercial banks are overpriced, underpriced or equilibrium price, to identify optimum portfolio of the banks and analyze the diversifiable and undiversifiable risk of the banks.

Major findings of the study are as follows:

- ❖ The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on common stock of NABIL is maximum (50.72%). Similarly expected return of C.S. of HBL is (27.79%) and NIBL is (31.23%).
- ❖ Beta coefficient explains the sensitivity or volatility of the stock with market. Higher the beta higher the volatility in the contest, common stock of NABIL is most volatile i.e. $\beta = 1.8684$ and common stock of HBL is least volatile i.e. $\beta = 0.9408$. The bank’s stock, having the beta less than beta coefficient of market (i.e. $\beta = 1$) defensive stock. We find NIBL and NABIL have aggressive type of common stock. Among them most aggressive seems to be NABIL with highest beta and least aggressive is HBL with the lowest beta among three bank’s common stock.
- ❖ Systematic risk cannot be diversified through creation of portfolio. It is occurred due to market factors. Unsystematic risk can be diversified through creation of portfolio. It is occurred due to internal management factors. This study shows that NIBL has high proportion of unsystematic risk i.e. 46.64% which can be minimized from internal management.

Whereas HBL has high proportion of systematic risk i.e. 86.72%. This cannot be minimized from internal management. C.S. of NIBL is the best among these banks due to its highest proportion unsystematic risk.

2.4 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 Pandya has done analysis taking samples from 6 insurance companies only. Mr. Buddhi Raj Tamang has done the analysis taking samples from banking sectors only. Mrs. Sita Sapkota and Mohan Purna Satyal have done analysis from different sectors but they have not concentrated on risk and return analysis with market. Mr. Dikal Shrestha has done study on only Joint Venture Banks in Nepal and like-wise Mr. Laxmi Prasad Wagle has also done study on few commercial banks but comparison has not taken between the individual companies and sectors. Some of them have given emphasis on Beta Risk and Market (NEPSE) also but ignored portfolio risk. Mohan Purna Satyal has said that highly riskiest asset of NLL hives high return but he did not focus his study about systematic risk part which cannot eradicate. So, this study has conducted to fulfill the above weakness.

³⁸Laxmi Prasad Wagle, “*Analysis of Risk and Return on Common Stock Investment of Commercial Bank in Nepals*” An unpublished Master Degree Thesis (Makawanpur Multiple Campus.), (2010).

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 methods that are 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”.³⁹ 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 2005/06 to 2010/11. 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 2010/11 there are 207 companies listed in the Security Board of Nepal among the selected sectors (*Source: SEBON Annual Report 2010/11*). All of the listed companies from the selected sectors are sample for study. Ten

³⁹ Kothari, C.R. (1991), Research Methodology, Wishwa Prakashan, New Delhi.

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. 2010/11 provided by the Security Board Nepal and other various sources covering the year 2005/06 to 2010/11. 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 annual report of thesis.

3.3 Population and Sample

There are total 207 companies listed in NEPSE Ltd. by the Mid July of F/Y 2010/2011. 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 23 Commercial Banks, 18 Manufacturing and Processing Companies, 61 Development Banks, 70 Finance Companies, 4 Hotels, 4 Trading Companies, 21 Insurance Companies and 6 Other Companies at the of fiscal year 2010/11. 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 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.	Everest Bank Ltd. Katmandu	2005-2010	5
2.	Nabil Bank Ltd. Kathmandu	2005-2010	5
3.	General Finance Ltd.	2005-2010	5
4.	Mahalaxmi Finance Ltd. Birgunj	2005-2010	5
5.	Nepal Life Insurance Co. Ltd	2005-2010	5
6.	Himalayan General Insurance Co. Ltd. Ktm.	2005-2010	5
7.	Uni Lever Nepal Ltd. Hetauda	2005-2010	5
8.	Bottlers Nepal Ltd. Balaju	2005-2010	5
9.	Salt Trading Corporation Ltd. Kathmandu	2005-2010	5
10	Bishal Bazar Co. Ltd. Kathmandu	2005-2010	5

3.4 Data Collection Techniques:

Almost the data, which are necessary for the research, are collected from secondary sources. However, during the study period, informal opening survey has also been taken with the individual investor, related companies' officials, SEBON and NEPSE staffs. The information has also been collected by financial documents provided by these sampled companies, trading manuals published by NEPSE, NEPSE periodical articles, related websites and previous reports.

3.5 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.

3.5.1 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;

3.5.1.1 Financial Tools

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,

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

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,

$$ER = \frac{\sum R}{n}$$

Where ER is expected return and 'n' denotes numbers of years and means summation of returns of the years.

c) Standard Deviation (σ): 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,

$$\sigma = \sqrt{\frac{\sum (R - ER)^2}{n-1}}$$

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 of variation. It is a measure of relative risk.

Symbolically,

$$C.V_j = \frac{\sigma_j}{R_j}$$

Where $C.V_j$ = Coefficient of variation of stock J.

σ_j = Standard Deviation which measures risk.

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.

$$Cov(R_j R_m) = \frac{\sum (R_j - ER_j) (R_m - ER_m)}{n}$$

Where,

$Cov(R_j R_m)$ = Covariance between R and R_m

n = No. of periods

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,

$$ER_p = W_A ER_A + W_B ER_B$$

Where,

ER_p = Expected return on portfolio of stock A and stock B.

ER_A = Expected return on portfolio of stock A .

ER_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,

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2Cov_{AB} W_A W_B}$$

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

Cov_{AB} = Covariance between Stocks A & B.

σ_A^2 = Variance of Stock A.

σ_B^2 = Variance of Stock B.

g) Risk minimizing Portfolio (minimum variance 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,

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

and

$$W_B = 1 - W_A \quad \text{Where,}$$

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 e.g. 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,

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

Where,

A= Indicates the individual asset.

β_A = Systematic Risk of Asset A.

σ_M^2 = Variance of Market.

$Cov(R_A R_M)$ = Covariance of the individual asset return with the returns of the market portfolio.

ρ_{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, $Cov_{mm} = \sigma_M^2$) 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, comparison of required rate of return and expected rate of return gives the result whether the stock is overpriced or underpriced. For the analysis risk free rate of return is needed i.e. "R_f". Here, for the study the return on the Treasury Bills issued by Nepal Rastra Bank is taken as risk free return.

Symbolically,

$$[ER_A = R_f + \beta_A(ER_m - R_f)]$$

Where,

ER_A = Required rate of return.

R_f = Risk free rate of return.

β_A = Beta coefficient of stock A.

ER_m = Return on market.

j) 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.

$$SR = \frac{Cov(R_j R_M)}{\sigma_M}$$

Where, SR is Systematic Risk portion $Cov(R_j R_M)$ means covariance between securities j and m. σ_M refers to standard deviation of market return.

k) 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. $(P_t - P_{t-1}) / P_{t-1}$

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

$$= (216.92 - 163.35) / 163.35$$

$$= 0.3279 \text{ i.e. } 32.79\%$$

3.5.1.2 Statistical Tools : t-Test

When sample size is less than or equal to 30 and population standard deviation (σ) is not known then t-test is used to test the 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,

Symbolically,

Null Hypothesis (H_0) = $[\bar{R}_s = \bar{R}_m]$ i.e. there is no significant difference between the average return of selected companies and overall market return.

Alternative Hypothesis (H_1) = $[\bar{R}_s \neq \bar{R}_m]$ i.e. there is significant difference between the average return of selected companies and overall market return.

Test Statistics: Under null hypothesis,

$$t_{cal} = \frac{\bar{R}_s - \bar{R}_m}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Level of Significance (α): 0.05 or 5%

Degree of Freedom: $n_1 + n_2 - 2$

Critical Value: The t_{tab} . at 5% level of significance and degree of freedom for two tailed test is

Decision: Since $| t_{\text{cal}} | < t_{\text{tab}}$, at 5% level of significance for degree of freedom. So null hypothesis H_0 is accepted which means that there is no significant difference between the average return of selected companies and overall market return.

Where,

\bar{R}_s = Arithmetic Mean Return of Selected Companies.

\bar{R}_m = Arithmetic Mean Return of Market.

n_1 = First Sample Size.

n_2 = Second Sample Size.

S^2 = An unbiased estimate of the common population variance σ^2 .

t_{cal} = t-Test calculated

t_{tab} = t-Test Tabulated Value

3.6 Definition of Key Terms.

Terminologies 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. Market value in the secondary market is determined by the supply and demand factors and reflects the opinion of investors and trader concerning the values of the stock closing price. In this study closing

prices 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 between different closing prices of previous years.

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 Everest Bank Limited

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})(R_m - \bar{R}_m)$
2005/06	1379	0						
2006/07	2430	25	78.03	73.44	5393.81	76.81	4869	5124.78

2007/08	3132	10	29.30	24.72	610.85	40.85	1144	835.95
2008/09	2455	20	-20.98	-25.56	653.42	-22.24	857	748.21
2009/10	1630	30	-32.38	-36.97	1366.63	-36.23	1871	1599.07
2010/11	1094	30	-31.04	-35.63	1269.35	-24.05	966	1107.19
Total			22.93		9294.05	35.15	9706.72	9415.20

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.2

Table No. 4.2, Different Measures of Risk and Return

R_{EVE}	$S.D._{EVE}$	C.V.	Cov (EVE, R_m)	Beta (β)	$\rho(EVE, R_m)$	SR	USR	R_m	$S.D._m$
4.59%	48.20%	10.51	2353.80%	0.97	0.99	47.48%	0.42%	7.07%	49.26%

(Source : Appendix B1)

Annual return of Everest Bank (EVE) varies from -32.38% to 78.03% results in average return of 4.59% which is lower than the total risk 48.20% in terms of Standard Deviation. The percentage risk associated with its return (C.V.) is higher than 1, that means investors should have to bear the risk of Re. 10.51 to get the return of Re. 1.

The volatility measuring factor beta shows that the stock has little bit less volatility than the market since beta $0.97 <$ market beta i.e. 1. This fact clarify the stock is as aggressive as the market and would attract investors who seek for aggressive stock.

The other factors for the company are its systematic risk portion, which is very high and cover 98.50% ($SR \div S.D.$) of total risk, and its unsystematic (diversifiable) risk portion, which is 0.42%. It shows that the company has reduced its unsystematic risk portion virtually.

Positive correlation of stock with market 0.99 explains that the stock price has positive movement with the price movement in market, equal risk in terms of S.D. with that of market also describes volatile position of the company.

4.1.2 Nabil Bank Limited

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})$ $(R_m - \bar{R}_m)$
2005/06	2240	70						
2006/07	5050	85	129.24	122.67	15048.74	76.81	4869	8560.08
2007/08	5275	100	6.44	-0.13	0.02	40.85	1144	-4.47
2008/09	4899	60	-5.99	-12.56	157.71	-22.24	857	367.59
2009/10	2384	35	-50.62	-57.19	3270.73	-36.23	1871	2473.80
2010/11	1252	30	-46.22	-52.79	2787.06	-24.05	966	1640.61
Total			32.84		21264.26	35.15	9706.72	13037.61

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.4

Table No. 4.4, Different Measures of Risk and Return

R _{NBL}	S.D. _{NBL}	C.V.	Cov (NBL,R _m)	Beta (β)	ρ(NBL,R _m)	SR	USR	R _m	S.D. _m
6.57%	72.91%	11.1	3259.40%	1.34	0.91	66.17%	6.75%	7.07%	49.26%

(Source : Appendix B2)

Annual return of the Nabil Bank Limited (NBL) varies from -57.19% to 122.67% which results lower average return 6.57% than the total risk 72.91% in terms of standard deviation. The percentage risk associated with its return (C.V.) is higher than 1, that means investors should have to bear the risk of Re.

11.10 to get the return of Re. 1.

It has the 2nd highest value of risk i.e. S.D. 72.91% having 66.17% of systematic risk which is 90.75% of total risk. This indicates the stock is highly risky.

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 1, the stock is known as more volatile than the market. Sensitivity of the stock with the market is higher and stock is considered as an aggressive one. The beta of NBL is 1.34, which is higher than the market and it makes an indication that the company has more volatility in returns than market returns.

The company has low percentage of unsystematic risk that means the investors could diversify the risk just little bit.

Positive correlation of stock with the market 0.91 explains that the stock price has close movement relationship with price movement in market.

4.1.3 General Finance Limited

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})$ $(R_m - \bar{R}_m)$
2005/06	150	0						
2006/07	140	0	-6.67	-35.33	1248.25	76.81	4869	-2465.35
2007/08	140	0	0.00	-28.66	821.62	40.85	1144	-969.50
2008/09	179	0	27.86	-0.81	0.65	-22.24	857	23.61
2009/10	339	0	89.39	60.72	3687.11	-36.23	1871	-2626.55
2010/11	450	0	32.74	4.08	16.64	-24.05	966	-126.78
Total			143.32		5774.27	35.15	9706.72	-6164.56

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.6

Table No. 4.6, Different Measures of Risk and Return

R_{GFL}	$S.D._{GFL}$	C.V	Cov (GFL,Rm)	Beta (β)	$\rho_{(GFL,Rm)}$	SR	USR	R_m	$S.D._m$
28.66%	37.99%	1.33	-1541.14%	-0.64	-0.82	-31.81%	69.28%	7.07%	49.26%

(Source : Appendix B3)

The annual return of the General Finance Limited (GFL) varies from -6.67% to 89.39% and the average return of the GFL is 28.66%. It has the total risk 37.99%, which contains -31.81% systematic risks and 69.28% of unsystematic risk. That means the chance of diversification of the risk is totally 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 GFL is 1.33, which shows that investors have to take little higher risk to get the return of Re. 1.

Beta presents the stock volatility with respect to the market. The beta coefficient of GFL, which is -0.64, shows that the stock is defensive one and less volatile than the market return.

Correlation of GFL with market is -0.82 which indicates the stock price has opposite movement with price movement in market.

4.1.4 MahaLaxmi Finance Limited

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})$ $(R_m - \bar{R}_m)$
2005/06	260	10						
2006/07	260	10	3.85	-46.90	2199.81	76.81	4869	-3272.80
2007/08	1191	1.12	358.51	307.76	94715.87	40.85	1144	10409.33
2008/09	1191	0	0.00	-50.75	2575.39	-22.24	857	1485.42
2009/10	288	24	-73.80	-124.55	15513.15	-36.23	1871	5387.56
2010/11	180	7.75	-34.81	-85.56	7320.05	-24.05	966	2658.82
Total			253.74		122324.26	35.15	9706.72	16668.33

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.8

Table No. 4.8, Different Measures of Risk and Return

R _{MLF}	S.D. _{MLF}	C.V.	Cov (MLF,R _m)	Beta (β)	ρ(MLF,R _m)	SR	USR	R _m	S.D. _m
50.75%	174.84%	3.45	4167.08%	1.72	0.48	84.59%	90.28%	7.07%	49.26%

(Source : Appendix B4)

Annual return of the MahaLaxmi Finance Limited (MLF) varies from -73.80% to 358.51% which results the highest averagereturn of 50.75% among these selected companies with the highest total risk of 174.84% which is also the highest total risk among selected companies. The percentage risk associated with its return is greater than 1, it means investors should have to bear Re. 3.45 risk for the returns of Re. 1.

The volatility measuring factor beta shows that the stock has more volatility than the market since beta is 1.72, which is also the highest beta. So the stock is high risky but with high rewarding ones.

It has the highest total risk i.e. 174.84% which consists of 84.59% of 1st highest systematic risk and 90.28% of unsystematic risk. Therefore, there are huge chances of diversification of risk. Positive correlation of stock with the market $\rho(\text{MLF}, R_m)$ 0.48 explains that the stock price has positive movement with price movement in market.

4.1.5 Nepal Life Insurance Co. Ltd

Table No. 4.9, Measurement of Risk and Return of

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})$ $(R_m - \bar{R}_m)$
2005/06	427	0						
2006/07	766	0	79.39	57.97	3360.81	76.81	4869	4045.29
2007/08	1669	0	117.89	96.47	9305.79	40.85	1144	3262.78
2008/09	1295	0	-22.41	-43.83	1920.82	-22.24	857	1282.84
2009/10	850	0	-34.36	-55.78	3111.58	-36.23	1871	2412.86
2010/11	566	0	-33.41	-54.83	3006.37	-24.05	966	1703.94
Total			107.09		20705.37	35.15	9706.72	12707.71

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.10

Table No. 4.10, Different Measures of Risk and Return

R _{NLI}	S.D. _{NLI}	C.V.	Cov (NLI, R _m)	Beta (β)	$\rho(\text{NLI}, R_m)$	SR	USR	R _m	S.D. _m
21.42%	71.95%	3.36	3176.93%	1.31	0.9	64.49%	7.46%	7.07%	49.26%

(Source : Appendix B5)

Annual return of the Nepal Life Insurance Co. Ltd (NLI) varies from -34.46% to 117.89% which yields return of 21.42%. The calculation shows total risk of 71.95% , which is more than 3 times of its expected return. The higher C.V. i.e.

3.36 also indicates that the stock has high risk to get the returns of Re. 1.

Beta coefficient 1.31 of stock refers that the stock is highly volatile than the market, so the stock is aggressive stock.

The nasty fact for the company is that, its systematic risk portion is 3rd highest after MahaLaxmi Finance(1st) and Nabil Bank (2nd) which is 64.49%. But it has low diversifiable risk of 7.46% only.

Positive correlation of stock with market i.e. 0.9 explains that the stock price has very close positive movement with price movement in market.

4.1.6 Himalayan General Insurance Co. Ltd.

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})(R_m - \bar{R}_m)$
2005/06	189	0						
2006/07	300	0	58.73	53.64	2877.51	76.81	4869	3743.14
2007/08	345	0	15.00	9.91	98.25	40.85	1144	335.26
2008/09	285	5.26	-15.87	-20.95	439.09	-22.24	857	613.34
2009/10	234	0	-17.89	-22.98	528.20	-36.23	1871	994.12
2010/11	200	0	-14.53	-19.62	384.85	-24.05	966	609.65
Total			25.44		4327.90	35.15	9706.72	6295.51

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.12

Table No. 4.12, Different Measures of Risk and Return

R _{HGIC}	S.D. _{HGIC}	C.V.	Cov (HGIC,R _m)	Beta (β)	ρ(HGIC,R _m)	SR	USR	R _m	S.D. _m
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5.09%	32.89%	6.47	1573.88%	0.65	0.97	31.95%	0.94%	7.07%	49.26%
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(Source : Appendix B6)

When making an observation to annual return of HGIC, it varies from -17.89% to 58.53% and it has positive return only in two fiscal years.

Average risk associated with the common stock of this company in the form of standard deviation is 32.89%. The C.V. 6.47, which indicates the percentage risk associated with the returns is much higher than 1.

The volatility measuring factor beta shows that the stock has about half less volatile than the market since beta 0.65 is less than the market beta 1.

The company has 31.95% of systematic risk and 0.94% of unsystematic risk. This means the investors cannot diversify the unsystematic risk more enough because it is already diversified.

Positive correlation of stock with market 0.97 explains that the stock price has positive movement with price movement in market.

4.1.7 UniLever Nepal Limited

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$\frac{(R - \bar{R})}{(R_m - \bar{R}_m)}$
2005/06	2500	400						
2006/07	3400	250	46.00	21.95	481.70	76.81	4869	1531.49
2007/08	4100	275	28.68	4.62	21.38	40.85	1144	156.40
2008/09	4250	325	11.59	-12.47	155.43	-22.24	857	364.92
2009/10	4149	325	5.27	-18.78	352.76	-36.23	1871	812.42
2010/11	4781	560	28.73	4.68	21.88	-24.05	966	-145.36

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation

(C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.14

Table No. 4.14, Different Measures of Risk and Return

R_{ULL}	$S.D_{ULL}$	C.V.	Cov (ULL,Rm)	Beta (β)	$\rho(ULL,Rm)$	SR	USR	R_m	$S.D_m$
24.05%	16.07%	0.67	679.97%	0.28	0.86	13.80%	2.27%	7.07%	49.26%

(Source : Appendix B7)

The annual return of the UniLeverNepal Limited varies from 5.27% to 46% and it has average return of 24.05%.

Average risk associated with this company's stock in the form of standard deviation is 16.07% which includes systematic risk of 13.80% and unsystematic risk of only 2.27%. Here unsystematic risk is too little so we can't reduce it for more diversification.

Beta coefficient which is 0.28 shows that the stock is defensive and would attract the investors with low risk preferences.

Correlation of UniLever Nepal with market is nearly perfect correlated i.e. 0.86 which indicates the movement of stock price is highly affected by movement of price in market.

4.1.8 Bottlers Nepal Limited Balaju

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

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (Rm) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R})(R_m - \bar{R}_m)$
2005/06	500	0						
2006/07	500	0	0.00	-37.40	1398.76	76.81	4869	-2609.75

2007/08	700	0	40.00	2.60	6.76	40.85	1144	87.94
2008/09	700	0	0.00	-37.40	1398.76	-22.24	857	1094.71
2009/10	700	0	0.00	-37.40	1398.76	-36.23	1871	1617.76
2010/11	1729	0	147.00	109.60	12012.16	-24.05	966	-3405.98
Total			187.00		16215.20	35.15	9706.72	-3215.33

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.16

Table No. 4.16, Different Measures of Risk and Return

R_{BNL}	S.D. _{BNL}	C.V.	Cov (BNL,R _m)	Beta (β)	ρ (BNL,R _m)	SR	USR	R _m	S.D. _m
37.40%	63.67%	1.7	-803.83%	-0.33	-0.26	-16.32%	79.99%	7.07%	49.26%

(Source : Appendix B8)

Average return of Botters Nepal Limited Balaju (BNL) varies from 40% to 147% which results 37.40% of average return where 63.67% of total risk is associated. The percentage risk associated with its return is more than 1, this means investors should have to bear 1.7 risk for the return of Re. 1.

Since beta coefficient is less than one i.e. -0.33. It shows that the stock is very defensive and would go in reverse direction of market.

As we can see stock has no systematic risk of -16.32% but has high degree of unsystematic risk of 79.99%. Hence, BNL can reduce unsystematic risk portion to the greater extent. Negative correlation of stock with the market i.e. -0.26 explains that the stock price has negative movement with price movement in market. Greater risk in terms of S.D. than that of market also describes the not good position of the company.

4.1.9 Salt Trading Co. Ltd

Table No. 4.17, Measurement of Risk and Return of

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$(R - \bar{R}) / (R_m - \bar{R}_m)$
2005/06	316	20						
2006/07	325	20	9.18	5.55	30.75	76.81	4869	386.93
2007/08	331	20	8.00	4.37	19.08	40.85	1144	147.73
2008/09	346	10	7.55	3.92	15.37	-22.24	857	-114.76
2009/10	307	5	-9.83	-13.46	181.14	-36.23	1871	582.17
2010/11	307	10	3.26	-0.37	0.14	-24.05	966	11.65
Total			18.16		246.48	35.15	9706.72	1013.72

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.18

Table No. 4.18, Different Measures of Risk and Return

R _{STC}	S.D. _{STC}	C.V.	Cov (STC,R _m)	Beta (β)	$\rho(\text{STC}, R_m)$	SR	USR	R _m	S.D. _m
3.63%	7.85%	2.16	253.43%	0.10	0.66	5.14%	2.71%	7.07%	49.26%

(Source : Appendix B9)

When doing an observation to annual returns of the Salt Trading Co. (STC), it varies from -9.83% to 9.18% and the five year historical average return is 3.63%.

The standard deviation, which measures the total risk on stock investment, is 7.85% and this exceeds the average return which is also indicated by higher C.V. of 2.16.

Since, beta coefficient $\beta = 0.10$ which shows that the stock is very less volatile

than market. So the stock of STC can be called a defensive stock.

The positive correlation of stock with market returns i.e. 0.66 shows that movement of price in the market will lead a change in price of stock in the direction of the market.

4.1.10 Bishal Bazar Co. Ltd

Table No. 4.19, Measurement of Risk and Return of

Years	Closing Price	Cash DPS	Return (R) %	$(R - \bar{R})$	$(R - \bar{R})^2$	Market Return (R _m) %	$(R_m - \bar{R}_m)^2$	$\frac{(R - \bar{R})}{(R_m - \bar{R}_m)}$
2005/06	2400	90						
2006/07	2400	100	4.17	-1.47	2.17	76.81	4869	-102.85
2007/08	2201	20	-7.46	-13.10	171.58	40.85	1144	-443.05
2008/09	3264	50	50.57	44.93	2018.46	-22.24	857	-1315.04
2009/10	3100	10	-4.72	-10.36	107.30	-36.23	1871	448.08
2010/11	2655	0	-14.35	-20.00	399.82	-24.05	966	621.39
Total			28.20		2699.34	35.15	9706.72	-791.47

(Source : www.nepalstock.com NEPSE)

Rate of Return (R), Standard Deviation (Sigma), Coefficient of Variation (C.V.), Covariance of return, Correlation between stock and market return are presented in Table 4.20

Table No. 4.20, Different Measures of Risk and Return

R _{BBC}	S.D. _{BBC}	C.V.	Cov (BBC,R _m)	Beta (β)	ρ(BBC,R _m)	SR	USR	R _m	S.D. _m
5.64%	25.98%	4.61	-197.87%	-0.08	-0.15	-4.02%	29.99%	7.07%	49.26%

(Source : Appendix B10)

Annual return of the Bishal Bazar Co. Ltd. (BBC) varies from -14.35% to 50.57% which yields only 5.64% average return. The calculation shows

25.98% of total risk which is more than 4 times of its average return. The higher C.V. i.e. 4.61 also indicates that the stock has high risk of Re 4.61 to get the returns of Re. 1.

Beta coefficient -0.08 of the stock refers the indication that the stock is less volatile than the market does, so the stock is a defensive stock. The surprising fact for the company is that, its systematic risk is in negative percentage i.e. -4.02% but it has healthy portion of unsystematic risk of 29.99%. Therefore, BBC should have reduced its diversifiable risk to 0%.

Negative correlation (-0.15) 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 of risk and return table of the selected companies are presented below.

Table 4.21 Average Return, Total Risk, C.V., Beta, SR and USR of Selected Listed Companies.

S.N.	Name List	\bar{R}	σ	B	C.V.	SR	USR
1	Everest Bank	4.59%	48.20%	0.97	10.51	47.48%	0.42%

2	Nabil Bank Ltd.	6.57%	72.91%	1.34	11.1	66.17%	6.75%
3	General Finance	28.66%	37.99%	-0.64	1.33	-31.81%	69.28%
4	MahaLaxmi Finance	50.75%	174.84%	1.72	3.45	84.59%	90.28%
5	Nepal Life Insurance	21.42%	71.95%	1.31	3.36	64.49%	7.46%
6	Himalayan Insurance	5.09%	32.89%	0.65	6.47	31.95%	0.94%
7	UniLever Ltd.	24.05%	16.07%	0.28	0.67	13.80%	2.27%
8	Bottlers Nepal, Balaju	37.40%	63.67%	-0.33	1.7	-16.32%	79.99%
9	Salt Trading Co.	3.63%	7.85%	0.1	2.16	5.14%	2.71%
10	Bishal Bazar Trading	5.64%	25.98%	-0.08	4.61	-4.02%	29.99%

(Source :
Appendix
B)

Now sector wise average of historical returns, standard deviations, betas, C.V., systematic risk and unsystematic risk of 5 selected sectors are shown in the table 4.22

Table no. 4.22 Sector-wise average of different measures of risk and return of selected companies.

Sector	\bar{R}	σ	β	C.V.	SR	USR
Banking	5.58%	60.56%	1.155	10.81	56.83%	3.59%
Finance	39.70%	106.42%	0.54	2.39	26.39%	79.78%
Insurance	13.26%	52.42%	0.98	4.92	48.22%	4.2%
Manufacturing	30.73%	39.87%	-0.025	1.185	-1.26%	41.13%
Trading	4.64%	16.92%	0.01	3.385	0.56%	16.35%
Total	93.91%	276.19%	2.66	22.69	130.74%	145.05%

(Source :
Appendix
B)

Average of annual historical return, standard deviation, beta, C.V., systematic risk and unsystematic risk of 5 selected sectors are shown in Table 4.23

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

Average of	Values
Average of Historical Return	$93.91 \div 5 = 18.78\%$
Average of Standard Deviation	$276.19 \div 5 = 55.24\%$
Average of Beta	$2.66 \div 5 = 0.532$

Average of Coefficient of Variation	$22.69 \div 5 = 4.54$
Average of Systematic Risk	$130.74 \div 5 = 26.15\%$
Average of Unsystematic Risk	$145.05 \div 5 = 29.01\%$

The return to investors from a stock mostly refers the sum of dividend received i.e. (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 are also taken into consideration as analyzing the degree of risk.

Table 4.21 reflects average Historical Returns, C.V., Beta, S.D. and portion of SR and USR. The table shows MLF has the greatest value of average return i.e. 50.75% which is much more than the average of all average return. Salt Trading Co. is the company having the least average return among all selected

companies which is 3.63% and much less than average of companies. Only five companies have higher average return than the average of all.

They are GFL, MLF, NLI, ULL & BNL and rest of all five are below the average. But none of them have negative average return.

Among the selected banks NBL has higher average return i.e. 5.57% than EVE i.e. 4.59% while the average return from banking sector is 5.58%. The MFL, 50.75%, has also higher average return than GFL, 28.66%, with the average return of financial sector, 39.70%, and this financial sector has the 1st highest average return among all sectors. Among the insurance companies NLI, 21.42% has higher average return than HGIC, 5.09%, with the average return of insurance sector, 13.26%. Among the manufacturing companies BNL, 37.40% has much higher average return than ULL, 24.05%. The average return of ULL and BNL produced average of 30.73% which is the 2nd highest average return in sector-area. Among the trading companies BBC, 5.64%, has higher value of average return than STC, 3.63%, which produced the average return of 4.64%.

The above table 4.21 shows that MLF has the highest total risk among of all companies i.e. 174.84% which is not only greater than the average risk of companies but also greater than its average return. STC has the least total risk of 7.85% and average return among the companies. Among these selected companies four have higher degree of total risk than the average risk, 55.24%, of all; they are NBL, 72.91%, MLF, 174.84%, NLI, 71.95%, & BNL, 63.67%, and rest of six companies are EVE, 48.20%, GFL, 37.99%, HGIC, 32.89%, ULL, 16.07%, STC, 7.85%, & BBC, 25.98%, have lower degree of total risk than the average risk.

If we compare the total risk of the companies within a sector, NBL has higher risk, 72.91%, than the EVE, 48.20%. MFL has higher risk, 174.84%, with higher return, 50.75%, than GFL. The investment in NLI has more risk with high return than the investment in HGIC. BNL has higher risky value i.e. 63.67% than ULL. Between the two trading companies BBC has higher risky value, 25.98%, than STC, 7.85%. Among the selected sectors finance is the

highest riskier sector and trading is the lowest riskier sector. C.V. refers the percentage risk associated with investment to get the return of Re. 1 when taking the table 4.21 into reference, NBL has the highest value of C.V., 11.1, which indicates very high degree of risk, ULL has the lowest value of C.V., 0.67. Four companies EVE, 10.51, NBL, 11.1, HGIC, 6.47, BBC, 4.61, have higher C.V. than the average C.V, 4.54, which is calculated in table 4.23. Companies having lower C.V. than the average C.V., 4.54, are GFL, 1.33, MFL, 3.45, NLI, 3.36, ULL, 0.67, BNL, 1.7, &STC, 2.16. From the above calculation it is found that banking sector has the highest C.V. of 10.81 (Table no. 4.22) while manufacturing sector has the lowest C.V. of 1.185. NBL has slightly higher C.V., 11.1, than EVE, 10.51, GFL has lower C.V., 1.33, than MLF, 3.45. HGIC has higher C.V., 6.47, than NLI, 3.36. BNL has more than 2 times higher C.V. than ULL. STC has lower C.V, 2.16, than BBC, 4.61. Among all none of the selected companies have negative C.V.

Another risk measuring factor is Beta and it is the measurement of volatility and variability of the stock returns. Beta is always compared with market volatility, which has the value of always 1. If the value of stock beta is less than 1, the stock is less volatile than the market. If the beta of the 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 0.532. Stock of MLF is the most volatile than all companies, which has the highest value of beta i.e. 1.72. Stock of GFL has less volatility of all, which has the least beta value of -0.64. Five companies have higher value of beta than the average beta i.e. 0.532 (Table 4.23), they are EVE, 0.97, NBL, 1.34, MLF, 1.72, NLI, 1.31, & HGIC, 0.65. Half of the remaining companies getting lower values of beta than the average value of beta, 0.532, are GFL, -0.64, ULL, 0.28, BNL, -0.33, STC, 0.10 & BBC, -0.08.

If we make the comparison in sector-wise, the return of banking sector has the highest volatility with beta of 1.155 (Table no. 4.22), while the manufacturing sector has the lowest beta with -0.025.

Among the banks, NBL, 1.34, is more volatile than EVE, 0.97, in finance companies MLF, 1.72, is highly volatile than GFL, -0.64. Stock of HGIC, 0.65, is much less volatile than the stock of NLI, 1.31. And ULL, 0.28, and STC, 0.10, more volatile than BNL, -0.33, and BBC, -0.08, respectively.

Risk associated with stock can be divided into systematic and unsystematic risk factors. Systematic risk can't be diversified whereas unsystematic risk can be diversified by well management and using other tools. Stock of MLF has the highest SR value i.e. 84.59% and GFL has the lowest SR value i.e. -31.81%. Five companies have higher value of SR than the average SR, 26.15%, (Table no. 4.23) and they are EVE, 47.48%, NBL, 66.17%, MLF, 84.59%, NLI, 64.59%, & HGIC, 31.95%. Other half companies have lower value of SR than the average SR, 26.15%, are GFL, -31.81%, ULL, 13.80%, BNL, -16.32%, STC, 5.14%, & BBC, -4.02%. If we make comparison among the five sectors, we can find banking sector has the highest systematic risk, 56.83%, and manufacturing sector has the lowest systematic risk, -1.26%.

Among banks, NBL has higher degree of SR, 66.17%, than EVE, 47.48%. In finance sector MLF has the highest SR, 84.59%, than GFL, -31.81%. HGIC has lower SR, 31.95%, than NLI, 64.49%. Between comparison of manufacturing and trading companies, ULL, 13.80%, has higher SR than BNL, -16.32% and STC, 5.14%, has more SR than BBC, -4.02%, 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 minimize the aggregate risk, which provides convenience and safety to investors. In this part of the study portfolio risk and return for each two companies are calculated and analyzed. The weights required to make a portfolio is calculated by using Risk Minimizing Weight (minimum variance) 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 understand which two companies are the best for the risk minimization motive. The best portfolio return of the 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 the table 4.24.

Table 4.24 Matrix Showing Portfolio Return Between Each Two Selected Companies.

Companies	EVE	NBL	GFL	MLF	NLI	HGIC	ULL	BNL	STC	BBC
EVE	4.59%									
NBL	2.54%	6.57%								

GFL	18.23%	21.59%	28.66%							
MLF	2.91%	11.57%	31.57%	50.75%						
NLI	-1.90%	14.28%	26.29%	11.80%	21.42%					
HGIC	5.99%	4.09%	15.89%	4.36%	0.33%	5.09%				
ULL	29.84%	27.14%	25.35%	23.61%	24.39%	32.81%	24.05%			
BNL	17.65%	23.45%	31.06%	38.98%	30.20%	13.72%	24.19%	37.40%		
STC	3.55%	3.45%	7.82%	2.69%	2.57%	3.49%	0.26%	3.90%	3.63%	
BBC	5.38%	5.72%	13.27%	7.68%	8.21%	5.42%	18.02%	13.21%	3.62%	5.64%

(Source: Appendix C & D)

Table 4.25 Matrix Showing Portfolio Risk between Each Two Selected Companies.

Companies	EVE	NBL	GFL	MLF	NLI	HGIC	ULL	BNL	STC	BBC
EVE	48.20%									
NBL	35.87%	72.91%								
GFL	14.26%	18.45%	37.99%							
MLF	47.84%	69.99%	24.55%	174.84%						
NLI	45.65%	65.87%	16.86%	59.38%	71.95%					
HGIC	14.61%	16.16%	13.00%	32.78%	29.37%	32.89%				
ULL	12.00%	11.90%	6.60%	15.82%	13.89%	12.92%	16.07%			
BNL	31.23%	36.63%	31.79%	59.71%	41.89%	25.04%	16.06%	63.67%		
STC	6.83%	6.57%	1.87%	7.06%	6.72%	7.33%	7.59%	7.83%	7.85%	
BBC	21.89%	25.27%	20.61%	24.65%	22.32%	18.81%	11.33%	17.53%	7.85%	25.95%

(Source: Appendix C & D)

Table 4.26 Correlation Matrix showing between Selected Companies.

Companies	EVE	NBL	GFL	MLF	NLI	HGIC	ULL	BNL	STC	BBC
EVE	1									
NBL	0.95	1								
GFL	-0.77	-0.72	1							
MLF	0.39	0.13	-0.57	1						
NLI	0.85	0.65	-0.77	0.81	1					
HGIC	0.99	0.96	-0.73	0.27	0.78	1				
ULL	0.83	0.78	-0.83	0.26	0.66	0.86	1			
BNL	-0.35	-0.42	-0.06	-0.01	-0.23	-0.3	0.21	1		
STC	0.61	0.62	-0.96	0.47	0.59	0.56	0.68	0.06	1	

BBC	-0.1	0.12	-0.08	-0.18	-0.22	-0.15	-0.33	-0.52	0.32	1
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(Source: Appendix C & D)

Presented all the values of correlation are calculated by the formula of correlation coefficient mentioned in Chapter 3. The relationship between risk and return of the 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 them whether their direction and degree is similar or different, if it is similar then how much similar and if it is different then how much different. The calculation of correlation coefficient is primly aimed to ease the portfolio analysis. Because the decision of investment on a portfolio of two negatively correlated securities helps to decrease the level of the risk up to some extent, it also assists to increase portfolio return for the investors.

From the table 4.25, it comes to know that the values of correlation coefficient varied between -1 to +1. But in real the world there is no existence of perfectly positive (+) and perfectly negative (-1) correlation between two variables (securities).The portfolio return between EVE and NBL is 2.54% which is 2nd lowest return of EVE with rest of all companies with the portfolio risk of 35.87% and the correlation of 0.95. Though it has reduced the average risk 60.56% to 35.87% which we think it is still in the sky and has to come on the land surface. Hence, only risk seeker investors would invest their money into these stocks because there is only 2.54% of return to the investors.

The portfolio return of EVE with GFL is 18.23% and it is the 2nd highest return above all with portfolio risk of 14.26% and correlation coefficient of -0.77. Investors having portfolio of EVE and GFL, can earn good returns on their investment because its C.V. is less than 1.

The Portfolio return of EVE with MLF and NLI are 2.91% & -1.90% with portfolio risk of 47.84%, 45.65% and correlation of 0.39 & 0.85 respectively. The lowest portfolio return of EVE is with NLI i.e. -1.90%. With HGIC, EVE yields 5.99% return with 14.61% of portfolio risk and 0.99 of correlation.

The highest return of EVE is with ULL i.e. 29.84% of portfolio return. Which has only 12% of portfolio risk and 0.83 of correlation. This is the best portfolio diversification investors having stocks of EVE and ULL and if investors have only EVE stocks then they should maximize their return and minimize the risk with holding new stocks of ULL.

The portfolio return EVE & BNL yields 17.65% which has negative correlation of -0.35 and risk of 31.23%. This type of negative correlated portfolio is good for investors because they provide better returns while one sector finds difficulty to move on the other sector is uninfluenced with it. The portfolios of EVE with STC and BBC yield with 3.55% & 5.38%, portfolio risk with 6.83% & 21.89% and correlation with 0.61 & -0.1 respectively. The portfolio return between NBL & GFL is 21.59%, which is the 3rd highest return in this NBL's category, and risk is 18.45% with negative correlation of -0.72. Likewise, the portfolio return between NBL & MLF is 11.57% and portfolio risk is 69.99% which is the highest risk with the correlation of 0.13. NBL & GFL seems a good combination whereas NBL & MLF has six times greater risk of its return. NBL has positive correlations with NLI & GHIC of 0.65 & 0.96 respectively. But NBL with NLI provides 14.28% of return and 65.87% of risk whereas NBL with GHIC provides only 4.09% of return and 16.16% of portfolio risk. The best combination of NBL stocks are with ULL stocks, because they yield the highest return of 27.14% in NBL's category. It has risk of 11.90% with 0.78 of correlation.

The portfolio return between NBL & BNL is the 2nd highest return i.e. 23.45% which has huge amount of portfolio risk i.e. 36.63% but has negative correlation of -0.42. NBL with STC & BBC don't yield good returns compared with others. NBL with STC & BBC provide only 3.45% & 5.72% of return and portfolio risks are 6.57%, 25.27% while correlations are 0.62, 0.12 respectively.

In the finance sector the portfolio return with the combination of GFL & MFL is 31.57%, which is the maximum return of GFL's category, with risk of 24.55% and correlation is -0.57. Both finance stocks (GFL & MFL) have average risk of 106.42%, but its portfolio has managed to reduce its risk 106.42% to 24.55% which is tremendously job done by the combination. Therefore, this combination of stocks is very profitable for investors.

The next combination of GFL is with NLI & HGIC. Calculating the portfolios between finance stock with insurance stocks we have got very good returns. They are 26.29% & 15.89% in return, 16.86% & 13% in risk and finally -0.77 & -0.73 in correlation respectively. Even more good combination of GFL we have found is with manufacturing companies' stocks i.e. with ULL & BNL. The portfolio combination of GFL with ULL & BNL yield with 25.35% & 31.06% in returns, 6.6% & 31.79% in risk and -0.83 & -0.06 in correlation respectively. One interesting fact we have found is GFL has negative correlation with all companies. Moving forward with trading companies, GFL with STC & BBC provide return of 7.82% & 13.27%, Risk of 1.87% (which is the lowest) & 20.61% and correlation of -0.96 & -0.08 respectively.

The portfolio return of combination of MLF & NLI is 11.80% with high degree of risk i.e. 59.38%, which is the 2nd highest portfolio risk in MLF category, and it has correlation of 0.81. The portfolio return of MLF & HGIC is 4.36% with

the risk of 32.78% and correlation of 0.27. The combination between MLF & ULL yields portfolio return of 23.61% with risk of 15.82% & correlation of 0.26. This portfolio combination has a healthy return considering both risk and correlation measures. The highest return in this MLF category is between MLF & BNL. This portfolio provides yield of 30.20% which has risk factor of 59.71% which we conclude the highest risk too and has correlation coefficient of -0.01. MLF with the last two companies STC & BBC has portfolio return of 2.69% & 7.68%, risk of 7.06% & 20.61% and correlation coefficient of 0.47 & -0.18 respectively. Among all in these MLF portfolio category, only ULL & BNL are suitable to make an investment.

Coming to the Insurance sector first we have NLI. The portfolio return between NLI & HGIC is only 0.33% which is a very shocking outcome being both Insurance companies they have less than 1% of portfolio return. It has portfolio risk of 29.37% with correlation of 0.78. Though it has reduced the total risk with the portfolio i.e. 52.42% (Table no. 4.22) to 29.37%, return has reduced way below. The combination of NLI with manufacturing companies i.e. ULL & BNL provides yield of 24.39% & 30.20%, which are the best returns in this category, with portfolio risk of 13.89% & 41.89% and correlation of 0.66 & -0.23 respectively. Combining with trading sector NLI provides yield of 2.57% & 8.21%, risk of 6.72% & 22.32% and correlation of 0.59 & -0.22 with STC & BBC respectively.

The portfolio investment of HGIC with ULL & BNL gives investors the return of 32.81% & 13.72%, with ULL it has the highest return on this HGIC category, with risk of 12.92% & 25.04% and correlation of 0.86 & -0.30 respectively. Investors holding HGIC stocks should diversify with ULL stocks because it provides maximum return in minimum risk. While combining HGIC with trading companies i.e. STC & BBC it has mediocre returns of 3.49% &

5.42%, risk of 7.33% & 18.81% with correlation of 0.56 & -0.15 respectively.

In the manufacturing sector, the portfolio investment between ULL & BNL, ULL & STC and ULL & BBC provide the return of 24.19%, 0.26% and 18.02% with risk of 16.06%, 7.59% and 11.33% with correlation of 0.21, 0.68 and -0.33. But the highest return of ULL is 32.81% with HGIC. So far in this portfolio return calculation ULL has most healthy return while combining with other sectors' companies.

The portfolio combination of BNL with STC yields only 3.90%. Though it has very low return, it is not the least return that it provides. The total risk of this combination is about 7.83%, which is also not bad one, and has correlation coefficient of 0.06. Likewise, the portfolio return between BNL & BBC is 13.21% which has risk factor of 17.53% with correlation of -0.52. The negative correlation coefficient of BNL with BBC shows that there is profitable opportunity for investment but it has also higher portfolio risk than its portfolio return.

The last portfolio combination is STC with BBC. Both are trading companies and its portfolio has yield of 3.62% with risk of 7.85% and correlation of 0.32. It has C.V. more than 1, therefore it is also a risky investment for investors.

From the above analysis more than half of the portfolio combinations have positive correlation coefficient i.e. 55.56%. The correlation is not only positive but also in some of the cases there are higher degree of risks than the average and there are also some cases which have negative correlation but even higher degree of risk than some other positively correlated portfolios. However, there are also some companies, which have negative correlation coefficient with minimum degree of risk. Besides this their analysis also shows that the two companies' is helpful to decrease the level of risk up to some extent,

one sector's average risk can be reduced to minimum level with combining other sectors' stocks. But we have observed that in one portfolio return is in negative form, which can't be considered as beneficial from the investors' point of view. At the end it can be said that, if the investors are able to analyze the effect of portfolio on risk and return characteristics properly, that time they will be able to get good returns by decreasing the level of risk up to some extent but it is necessary for all investors to have a sound finance and investment background knowledge with well informed of daily market news.

4.4 Comparison with Market:

4.4.1 Market Risk and Return

When acquiring information or data about the all publicly traded stocks in Nepal, there is only one source for this and it is NEPSE Index. The overall market is represented on a single place. The market return, its Standard Deviation and Coefficient of Variation are calculated below.

Table 4.27 Rate of Returns, Standard Deviation and Coefficient of Variation of the Market.

Year	NEPSE Index (NI)	$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$	$(R_m - \bar{R}_m)$	$(R_m - \bar{R}_m)^2$
2005/06	386.83			
2006/07	683.95	0.768	0.697	0.461
2007/08	963.36	0.409	0.338	0.114
2008/09	749.10	-0.222	-0.293	0.086
2009/10	477.73	-0.362	-0.433	0.187
2010/11	362.85	-0.240	-0.311	0.097

	$\sum R_m$	0.353		$\sum (R_m - \bar{R}_m)^2 = \mathbf{0.945}$
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$$1. \text{ Market Return } (\bar{R}_m) = \frac{\sum R_m}{n} = \frac{0.353}{5} = 0.0703$$

$$2. \text{ Standard Deviation } (\sigma_m) = \sqrt{\frac{\sum (R_m - \bar{R}_m)^2}{n-1}} = \sqrt{\frac{0.945}{5-1}} = 0.492$$

$$3. \text{ Coefficient of Variation (C.V.)} = \frac{\sigma_m}{\bar{R}_m} = \frac{0.486}{0.071} = 6.845$$

Here the market return is 7.03%, risk is 49.20% and coefficient of variation is 6.845.

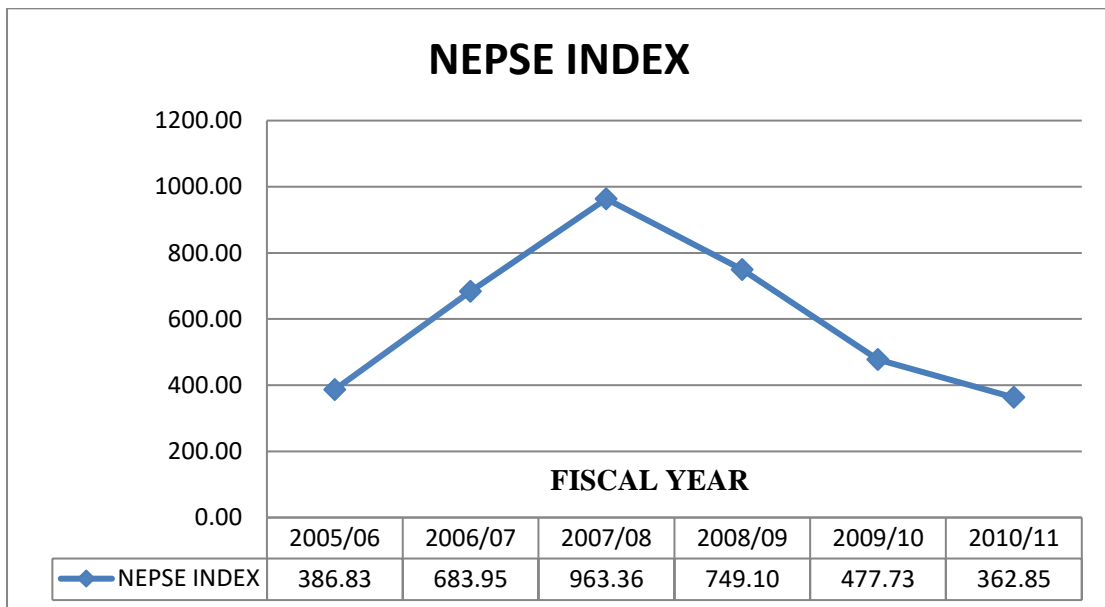


Fig. 4.1 NEPSE Index Movement during 2005/06 to 2010/11

From the above diagram we can clearly see the pattern of movement of the NEPSE Index throughout the years. NEPSE index is ascending from the year 2005/06 to 2007/08 but afterward year 2007/08 it loses its increasing trend and then starts to fall as speed as it had risen. Due to the recession or we can say Financial Crisis happed in 2007/08 stock market lost its grip and this it again came back where it had started. After that financial crisis NEPSE in fiscal year 2010/11 has gone even below than in fiscal year 2005/06. However, NEPSE is above 400 points in these days (2011/12).

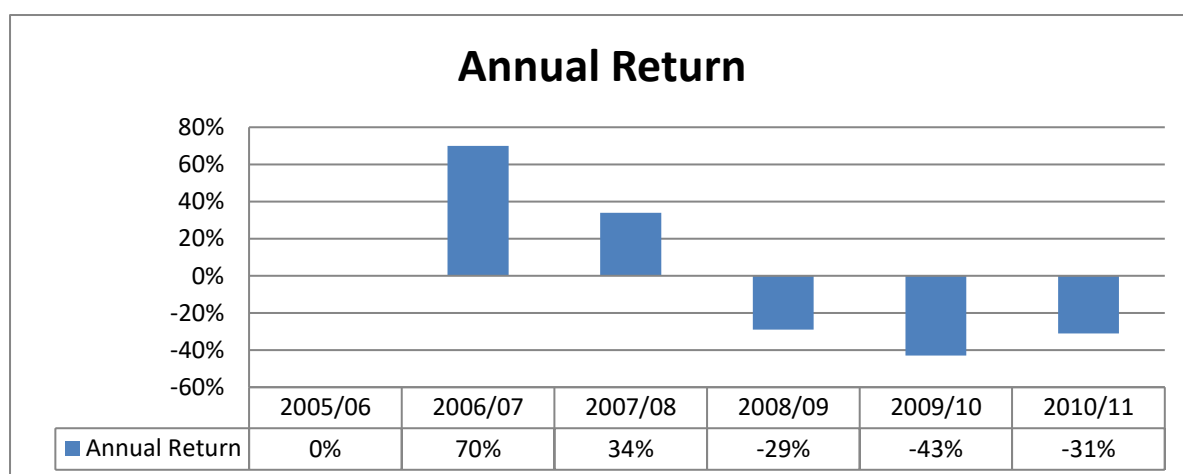


Fig. 4.2 Market Return Movement

From the above diagram, we can see clearly market returns which are some of in positive percentage and some of in negative percentage. For those investors who invested their money on the stock market in the period of 2005/06 to 2007/08 they were benefited by their stocks with huge yields. However, after 2007/08 the market started to be bearish and stock market went into negative yield as our last three bars are prone to downward.

4.4.2 Testing of Hypothesis

The hypothesis is based on the test of significance of difference of mean (t-test). Here we are testing returns from sampled stock group and Market Return are whether difference or not. For this, Historical Average Return, S.D. and C.V. are calculated in the following table.

Table 4.28 Average Return, S.D. and C.V. Calculation of the Selected Companies.

S.N.	Name of Company	R_s	$(R_s - \bar{R}_s)$	$(R_s - \bar{R}_s)^2$
1	Everest Bank Ltd.	4.59%	-14.19	201.36
2	Nabil Bank Ltd.	6.57%	-12.21	149.08
3	General Finance Ltd.	28.66%	9.88	97.61
4	Maha Laxmi Finance Ltd.	50.75%	31.97	1022.08
5	Nepal Life Insurance Ltd.	21.42%	2.64	6.97
6	Himalayan General Insurance Co. Ltd.	5.09%	-13.69	187.42
7	Unilever Nepal Ltd.	24.05%	5.27	27.77
8	Bottlers Nepal Ltd	37.40%	18.62	346.70
9	Salt Trading Co. Ltd.	3.63%	-15.15	229.52
10	Bishal Bazar Co. Ltd.	5.64%	-13.14	172.66
	Total	187.80		2441.18

$$1. \text{ Market Return } (\bar{R}_s) = \frac{\sum R_s}{n} = \frac{187.80}{10} = 18.78\%$$

$$2. \text{ Standard Deviation } (\sigma_s) = \sqrt{\frac{\sum (R_s - \bar{R}_s)^2}{n-1}} = \sqrt{\frac{2441.18}{5-1}} = 24.70\%$$

$$3. \text{ Coefficient of Variation (C.V.)} = \frac{\sigma_s}{\bar{R}_s} = \frac{24.70}{18.78} = 1.315$$

We have,

$$\text{Stock Mean } (\bar{R}_s) = 18.78$$

$$\text{Market Mean } (\bar{R}_m) = 7.03$$

$$\text{S.D. of Stock } (S_1) = 24.70$$

$$\text{S.D. of Market } (S_2) = 49.26$$

$$\text{Stock Sample Size } (n_1) = 10$$

$$\text{Market Sample Size } (n_2) = 5$$

$$\text{Estimated Variance of Population } (S^2) = \frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2 - 2}$$

$$= \frac{10 \times 24.70^2 + 5 \times 49.26^2}{10 + 5 - 2} = 1402.59$$

Null Hypothesis (H_0) = $[\bar{R}_s = \bar{R}_m]$ i.e. there is no significant difference between the average return of selected companies and overall market return.

Alternative Hypothesis (H_1) = $[\bar{R}_s \neq \bar{R}_m]$ i.e. there is significant difference between the average return of selected companies and overall market return.

Test Statistics: Under null hypothesis,

$$t_{cal} = \frac{\bar{R}_s - \bar{R}_m}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$= \frac{18.78 - 7.03}{\sqrt{1402.59 \left(\frac{1}{10} + \frac{1}{5} \right)}}$$

$$= 0.573$$

Level of Significance (α): 0.05 or 5%

Degree of Freedom: $n_1 + n_2 - 2 = 10 + 5 - 2 = 13$

Critical Value: The t_{tab} .at 5% level of significance and 13 degree of freedom for two tailed test is 2.16

Decision: Since $|t_{\text{cal}}| < t_{\text{tab}}$., at 5% level of significance for 13 degree of freedom. So null hypothesis H_0 is accepted which means that there is no 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 equal to the market return.

4.5 Major Findings

The major findings from “An analysis of risk and return on common stock investment in Nepal (Some Listed Companies in NEPSE from Five Sectors)” can be summarized as follows.

- The return is the income received on a stock investment which is usually expressed in percentage. The average historical return from the listed companies is 18.78%. All the selected companies have positive average return. The highest average return is from BNL, whereas the lowest average return is from STC. There are only 5 companies above the average return. Sector-wise comparison shows that finance sector

has the highest average return than average of all which can be considered as better return, while trading sector has the lowest average return. The manufacturing sector has provided 2nd highest average return.

- Risk is the variability of returns which is measured in terms of Standard Deviation. The average total risk of selected companies is 55.24%. Only 4 companies are above the average risk and rests of all are below the average. As per the degree of total risk MLF is the riskiest whereas STC is the lowest risky company to invest in. Among the selected sector Finance, Banking & Insurance have the highest total risk and Trading has the lowest risk.
- The average value of C.V. for selected companies is 4.54. The highest value of C.V. is 11.10 which is NBL and the lowest is 0.67 for ULL. Sector-wise comparison shows that Banking has the highest C.V. value of 10.81 and Manufacturing sector has the lowest C.V. value. It shows that manufacturing sector is the least risky sector.
- Beta coefficient explains the sensitivity or volatility of the stock with the market and higher the beta higher the volatility. The highest value of beta (i.e. degree of SR) for the selected companies is of MLF i.e. 1.72 and the lowest is -0.64 for GFL. The average value of the beta is 0.532. All 7 selected companies have beta less than 1 except NBL, MLF & NLI. So except these 3 companies' stock, all 7 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. Hence, among the five sector stocks, stocks of banking sector have the highest market sensitivity for stocks and manufacturing

stocks have the lowest market sensitivity.

- Systematic risk cannot be diversified through creation of portfolio. It is occurred due to market factors. Unsystematic risk can be diversified through creation of portfolio. The average of SR and USR for selected companies are 26.15% and 29.01% respectively. The highest value of SR is 84.59% for MLF and the lowest value is -31.81% for GFL. Likewise, the highest value of USR is 90.28% for MLF and EVE has the lowest USR of 0.42%. The finance sector can minimize the risk by well management, whereas banking sector can't do this from the view of USR. From the view of SR, banking sector has the highest risk which is influenced by market factors and it can't be reduced, whereas manufacturing sector has less SR of -1.26%.
- To compare with market portfolio risk return, hypothesis test has been set. This hypothesis is based on t-Test. The conclusion is, there isn't significant difference between the average return and overall market return. That means there is similarity between stock risk-return & market return.
- Hypothesis test is done to check whether there is significant difference between Stock returns and Market returns. And the test ends with accepting Null Hypothesis (H_0). Hence, there is no significance difference between stock return and market return.

Effects of Stock Portfolios:

- The returns of majority number of selected companies have positive correlation with the returns of other companies. The portfolio having

correlation less than 1 or negative helps to decrease the level of the risk. So it is beneficial to make portfolio between these companies however, portfolio of EVE with NLI yields in negative return of -1.90%.

- The sets of EVE & GFL, EVE & BNL, EVE & BBC, NBL & GFL, NBL & BNL, GFL & MLF, GFL & NLI, GFL & HGIC, GFL & ULL, GFL & BNL, GFL & STC, GFL & BBC, MLF & BNL, MLF & BBC, NLI & BNL, NLI & BBC, HGIC & BNL, HGIC & BBC, ULL & BBC and BNL & BBC are negatively correlated but they have positive portfolio returns. Negatively correlated portfolios are good for well diversification. Some companies have higher degree and some have lower degree of positive portfolio return along with high or low degree of portfolio risk. Because of having negative correlation values, it is possible to decrease the level of risk up to some extent.
- There is only 1 portfolio (i.e. EVE with NLI) whose value is negative and it is a bad portfolio to invest in. Among 45 sets of portfolios combination only 9 combinations have portfolio returns more than 25%, only 9 portfolios combinations have portfolio return between 15% to 25% and rest of all have the portfolio return less than 15%.
- 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 the highest between portfolio ULL and HGIC. So, comparatively these two companies are the best to make the portfolio among others.
- The overall effect of portfolio on risk and return shows mixed results. It means the portfolio helps to increase the returns in some case but in some cases it has also decreased the return up to negative level. But in

other hand, nearly in all cases it has helped to decrease the level of risk up to some extent.

- The manufacturing sector has higher return than other sectors. Trading sector has lower return.
- The beta coefficient in this section of market sensitivity analysis, which is measured the index of systematic risk. It may be used for the ranking the systematic risk of different assets. Beta coefficient of different companies showed one or more than one is aggressive i.e. NBL, MLF & NLI and others are defensive assets.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

This chapter refers to the presentation of abstract of the whole study and intended to highlight the findings we acquired 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.

Finance is mainly concerned with the efficient flow of funds. An investor tries to provoke highest rate of return bearing lower level of risk. To trade of between risk and return, financial market plays vital role. Stock market one of the parts of capital markets has the greatest attraction not only for the professional or institutional investors but also for the individual or private investors. Financial market classified as money market and capital market transit the fund from surplus unit to deficit unit. Although Nepalese financial market is not developed much financial securities are highly demanded compared to its supply.

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 securities through diversification of risks.

Capital market facilitates risk sharing among those who demand risk avoidance and those who supply it. There is market price of risk just as there is a market price for 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, war, natural calamities etc. The investors willingly offer more capital at higher rate of return. Whereas the users of capital always show their readiness to use more capital at lower rate. Common stock is a source of raising the capital fund, which is considered to be riskier and lifeblood of capital market. Since common stock carries the partnership interest 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 the 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 relationship between risk and return is described by investor's perceptions about risk and their demand for compensation. No investors will like to invest in risky assets unless s/he is assured of adequate compensation for the acceptance of risk. Hence, risk plays a central role in the analysis of investment taking decision about proper investment decision process, analysis of

securities, identification of overpriced, under priced securities making appropriate investment strategies as well as construction of efficient portfolio. Return, Risk and time are the elements of investment. It is the investor's required risk premium that establishes a link between risk and return, in a market dominated by rational investors, higher risk will command by rational premium and the tradeoff between the two assumes a liner relationship between risk and risk premium.

Common stock is the most risky security and life blood of the stock market. Because of higher expected return on investment in common stock of a corporate from neither ensures on annual return nor ensure the return of principal. Therefore, investment in the common stock is paid only if the firm makes on operating profit after tax preference dividend. Common stock has attracted more investors in Nepal. Rush in the primary market during the primary issue is one of the examples. But private investors play a vital role in economic development of the nation by mobilizing the disposed capital in different from the society.

The main objectives of the study are to analyze the risk and return on common stock investment of Ten different companies' stock from Five different sectors, to examine the relationship among the returns of the sample companies and to determine the effects of portfolio diversification on risk and return.

Data of selected companies are used from 2005/06 to 2010/11 for this research. This research is based on the secondary data. Risk and return of sample companies are analyzed with the help of covariance with market, beta of the stock and correlation with market. Systematic risk and unsystematic risk are calculated to find out gender of risks. Various portfolio set are developed having positive and negative correlation to each other. Investment alternatives were selected among those all portfolio sets using Markowitz portfolio (two

assets portfolio) selection model with the help of minimum variance portfolio selection method. Moreover Tables, graphs and diagrams are used to present the data and results more clearly. Both quantitative and qualitative analysis have been performed by using statistical tools. Secondary data are collected from the NEPSE, SEBON and other related websites. Other subjective types of information are collected through the books, journals, magazines, websites etc. Findings of analysis are summarized and conclusion is drawn as follows:

S.N.	Name List	\bar{R}	σ	β	C.V.	SR	USR
1	Everest Bank	4.59%	48.20%	0.97	10.51	47.48%	0.42%
2	Nabil Bank	6.57%	72.91%	1.34	11.1	66.17%	6.75%
3	General Finance	28.66%	37.99%	-0.64	1.33	-31.81%	69.28%
4	Maha Laxmi Finance	50.75%	174.84%	1.72	3.45	84.59%	90.28%
5	Nepal Life Insurance	21.42%	71.95%	1.31	3.36	64.49%	7.46%
6	Himalayan Insurance	5.09%	32.89%	0.65	6.47	31.95%	0.94%
7	UniLever Ltd.	24.05%	16.07%	0.28	0.67	13.80%	2.27%
8	Bottlers Nepal Balaju	37.40%	63.67%	-0.33	1.7	-16.32%	79.99%
9	Salt Trading Co.	3.63%	7.85%	0.1	2.16	5.14%	2.71%
10	Bishal Bazar Trading	5.64%	25.98%	-0.08	4.61	-4.02%	29.99%

(Source: Appendix B)

5.2 Conclusion

Every investment has uncertainties. Uncertainties make future return risky. The sources of uncertainty that contribute to investment risk may be interest rate risk, purchasing power risk, Bull-Bear market risk, default risk, liquidity risk callability risk, political risk, industry risk, unsystematic risk, systematic risk or other risk. So risk is defined as the variability of the returns of a period. The variability of returns from those that are expressed is defined as risk. That future rupees or reward for today's investment is called the return. Generally, investor expects higher return by taking lower risk. The uncertainty is the

major risk to investor in stock market investment. A risk-return tradeoff is related to the preferences of the investors. The expected return from any investment proposal will be linked in a fundamental relationship to the degree of risk in the proposal. In order to be acceptable, a higher-risk proposal must offer a higher forecasted return than a lower-risk proposal.

Being this study concerned with risk and return analysis, here risk is defined as the variability of the return of a period. The investments are riskier if the variability of the returns is higher. An investment involves the sacrifice of current rupees for future rupees or reward, that future rupees or reward is called return. It includes both current income (dividend) and capital gains or losses that arise due to the increase or decrease on the price of the securities.

Though several studies have already been conducted in Nepal to evaluate the risk and return on common stock investment of some companies, most of the studies of risk and return on common stock investment have not included many different sectors of Nepal and comparative study between them on the basis of risk and return associated with them. This study is based on 10 sample companies listed on NEPSE, 2 companies from each sector which are Banking, Finance, Insurance, Manufacturing and trading respectively. The financial statements of these sample companies are available for at least three years of study period has been selected as the sample of study.

From the study it is concluded that all the sampled companies, which are under study, are very much risk with fluctuated rate of return except Uni Lever Company Ltd. From the findings of the different sectors beta coefficient of sampled companies GFL, BNL, ULL, STC and BBC are less volatile but other are much volatile. Commercial Banks have very low average returns with respect of their Standard Deviation and have higher C.V. too. From manufacturing sector ULL provides the best average return according to the

C.V. value i.e. 0.67. MLF has the most highest Standard Deviation as well as most highest SR and USR among sampled companies i.e. 174.84%, 84.59% & 90.28% respectively. While testing hypothesis inequality of the returns on sampled companies and the market, we have found Null Hypothesis (H_0) is accepted i.e. there is no significant difference between Stock Return and Market Return. Finally portfolio of MLF and BNL has the most highest portfolio return of 38.98% likewise portfolio of GFL & STC has the lowest portfolio risk of 1.87% which is tremendously reduced from 37.99% (only GFL's) to 1.87% (while combined).

5.3 Recommendations

The recommendations based on major findings are offered as follows:

- ❖ Investors who want high return should invest in GFL, MLF, NLI, ULL and BNL, irrespective of risk.
- ❖ Risk-averse investors (investors who don't want to take higher risk) should invest in ULL and GFL.
- ❖ The investors who like to bear less risk in term of CV and beta should choose ULL, GFL and BNL respectively to invest owing to its less CV and beta than others' stock.
- ❖ The companies GFL, MLF, BNL and BBC have higher unsystematic risk in comparison to others, so they should try to minimize the risk with proper management.
- ❖ There is positive relationship between risks and returns therefore the investors should select riskier company to get higher return and less risky company to get lower return.

- ❖ To form a portfolio investors should select those companies' stocks that are negatively correlated in their pairs. In this way investors have a risk minimized portfolio that will compensate with good returns.
- ❖ Investors, who want high portfolio return, should invest between the companies EVE & ULL, NBL & ULL, GFL & MFL, GFL & NLI, GFL & ULL, GFL & BNL, MFL & BNL, NLI & BNL and HGIC & ULL which have portfolio return more than 25%, irrespective of portfolio risk.
- ❖ The portfolio return is negative between EVE and NLI and less than 1% between ULL & STC. Therefore the investors should not select these companies for portfolio.
- ❖ Risk-averse investors should make the portfolio of companies ULL with EVE, NBL, GFL, MFL, NLI, BNL and BBC.
- ❖ To suggest these five different sectors on the basis of SR & USR we can say that SR is out of companies' hands, so economic conditions should be favorable to reduce SR by implementing better policies by the government. However, in the case of USR companies can definitely control it by identifying and taking corrective actions like, management problem, labor dispute, supply chain etc. Hence, companies having higher USR like GFL, MFL BNL & BBC must reduce their USR by implementing above mentioned matters.
- ❖ Analysis of personal risk, attitude, needs and requirements will be helpful before making an investment in stock market. Investors should make several discussions with stock holder before reaching at the decision. Investors should make their decision on the basis of reliable information rather than the imagination and rumor.

- ❖ Normally it is believed that the share price of bank and financial institutions always increase and there is benefit for every time. But in reality it is not true one. The price of a share/stock may decrease or increase due to many reasons and factors 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 the market, economic and non-economic factors affecting the market.
- ❖ NEPSE needs to initiate and develop different programs for private investors such as investors meeting and seminars indifferent subjective matters like “Trading Rules and Regulation” etc. Though these days NEPSE have opened its branches outside valley, they haven’t delegated full authority to do transaction of stock exchange. They need to take decision according to their head office. So, every branch should be authorized for the every decision related to investors that all the investors will be benefited outside the valley.
- ❖ Still greater potential is latent in Banking, Finance, Insurance, Manufacturing and Trading business, so focusing these sectors to provide information, training, study, booklets, journals, news and bulletins should be active on regular basis.
- ❖ The corporate firm should disclose their actual financial conditions so that insisted investors may analyze their performance and able to make decision whether to invest on their stock or not. Value of assets and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.
- ❖ 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.

- ❖ 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. Hence investors must deliberate about it.
- ❖ Listing is not popular in all sectors. So, all sectors should be equally encouraged.
- ❖ Although there is chance of more return than that of expected, there is also a chance of heavy loss because stock market investment is a risky investment. So investors must be well aware of this fact and must be able to visualize and analyze the whole things.
- ❖ Investors' 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 policies of Nepalese 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 problems, threatening to the investors of Nepal must be eradicated.

BIBLIOGRAPHY

Books :

Bhalla, V. K. (1997), “*Investment Management*”, New Delhi: Prentice Hall of

India.

Cherry, John M. and Moses Edward A., (1990) “*Fundamentals of*

Investment, San Francisco”.

Francis, Jack Clark (1992), “*Financial Management and Policy*”, New Delhi:

Prentice Hall of India Pvt. Ltd.

Grewal, S.S. (1995), “*The Thinking Investors*”, New Delhi: Vision Books.

Hampton, John J., “*Financial Decision Making*”, New Delhi: Prentice Hall of

India Pvt. Ltd.

Henderson, Glenn V., Gary J. R. and Wert James E. (1984), “*An Introduction*

to Financial Management”, Menlo Park, California, Addison Wesley-

Publishing Company.

Kerlinger, E.N. (1986), “*Foundation of Behavior Research*”, New-Delhi, Holt,

Rimehart and Wiston.

Kothari, C.R., (1991), “*Research Methodology*”, New-Delhi, Wishwa

Prakashan.

Prasanna, Chandra. “*The Investment Game*”, India, Tata Mc. Graw Hill
Publishing Company Ltd.

Sharma, P. K. and Chaudhary, A. K. (2002), “*Statistical and
Methods*”,

Kathmandu : Khanal Books Prakashan.

**Sharpe, William F, Alexander Gordon J. and Bailey Jeffery V.,
(1999)**

“*Investment*”, New Delhi, Prentice Hall of India Pvt. Ltd.

**Sharpe, William F, Alexander Gordon J. and Bailey Jeffery V.,
(1995),**

“*Investment*”, *Ed. 8th*, New Delhi, Prentice Hall of India Ltd.

Sprecher, C. Ronald (1987) “*Essential of Investments*”, New York,
Boston

Houghton Mifflin.

Vanhorne, James C. (2000), “*Financial Management and Policy*”, New
Delhi:

Prentice Hall of India Pvt. Ltd.

Vanhorne, James C. and John M. Wachwicz John M. (1997),
“*Fundamental of*

Financial Management”, New Delhi, Prentice Hall of India Pvt.
Ltd.

Weston, J. Fred and Brigham Eugene F. (1996), “*Essential of
Managerial*

Finance”, New York, The Dryden Press.

Wolf, Howard K. and Pant P.R. (2000), “*Social Science Research and*

Thesis

Writing”, Kathmandu, Buddha Academic Enterprises Pvt. Ltd.

Journals :

Ball, Ray (1978), “*Anomalies in Relationship Between Securities yields and yield*

Surrogates” The Journal of Financial Economics, vol.-6:103-126.

Banz, Rolf (1981), “*The Relationship between Returns and Market value of*

common stocks”: The Journal of Financial Economics vol.-9:3-18.

Banz, Rolf and William Breen (1986) “*Sample Dependent Result using accounting and Market Data: Some Evidence*”. The Journal of Finance,

vol.-41.

Basu, Sanjoy (1983), “*The Relationship between Earnings Yield Market Value*

and Return for NYSE Common Stocks”, Future Evidence. The Journal of

Financial Economics, vol.-12:129-156.

Black, Fischer (1972) “*Capital Market Equilibrium with Restricted Borrowing*”

The Journal of Business, vol.-45:444-455.

Cook, Thomas and Rozeff Michael. (1984) “*Size and Quantitative analysis: one*

Effect or Two?” The Journal of Financial and Quantitative Analysis,

vol.-19-:449-466.

Davis, James L. (Dec 1994), “*The Cross-Section of Realized Stock Returns*” The

Journal of Finance, vol.-49:1579-1593.

Elton, Edwin J. (1999), “*Expected Return, Realized Returns and Assets Pricing*

Tests”. Journal of Finance, vol.Liv. (4). 1100.

Jaganathan, Ravi and Znenyu Wang (March 1996), “*The Conditional CAPM*

and the Cross-Section of Expected Returns” The Journal of Finance,

vol.-51:53.

Lakniosk, Josef and Shapiro Alan (1986) “*Systematic Risk, Total Risk and Size*

as Determinants of Stock Market Return” The Journal of Banking and

Finance, vol.-10:115-132.

Manandhar, K.D. (1998) “*A Study of Dividend Policy and Value of The Firm in*

Small Stock Market: A Case of Nepal”, Management Dynamics A Journal on

Management & Economics vol.-8:15-20.

Mare, Reinganum (1981), “*Miss-specification of Capital Assets Pricing*”. The

Journal of Financial Economics vol.-9:19-46.

Ojha Khagendra, (2000), “*Arthik Mancha*” Weekly, Kathmandu, Shidhi Media

Pvt., Ltd., P-25.

Pradhan, Radheshyam, (2003), “*Stock Market Behavior in Nepal*”, A
Economic

Journal, Biratnagar, Buddhi Prakashan, P-25.

Shrestha, M.K. (1998), “*Management Dynamics*”, A Journal on
Management &

Economics vol.-6:10.

Verma, P. C. (Oct-Dec. 1994), “*Financial Behavior of Jute Industry in
India*”.

The Indian Economic Journal, vol.-42:125-137.

Thesis :

Bhatta, Gopal P. (1995) “*Assessment of the Performance of Listed
Companies in*

Nepal” An unpublished Master Degree Thesis (T.U. Central Dept.)

Ghimire, Shree Ram (2000) “*A Study on Financial Performance of
Finance*

Companies”, An unpublished Master Degree Dissertation. (T.U.,
Central

Dept.)

Gurung, Damber Bahadur, “*Risk and Return Analysis of Portfolio
Investment on*

Common Stock of Manufacturing and Processing Companies” An
unpublished Master Degree Dissertation. (T.U. Nepal Commerce
Campus).

Mishra , Shanker Kumar (2002) “*Risk and Return Analysis on*

Common Stock

Investment of Commercial Banks in Nepal” An unpublished Master Degree

Thesis (T.U. Shanker Dev Campus).

Neupane, Hari Prasad (2008) “*Risk and Return Analysis of Common Stock*

Investment of Listed Commercial Banks” An unpublished Master Degree

Thesis (T.U. Shanker Dev Campus).

Neupane, Puskar (2001), “*Prospects of Finance Companies in Nepal*” An

unpublished Master Degree Dissertation. (T.U., Shanker Dev Campus).

Pandey, Lila Nath (2003) “*A Study on Risk and Return Analysis of Common Stock*

Investment” An unpublished Master Degree Thesis (T.U. Central Dept.).

Sapkota, Sita (2004) “*Risk and Return Analysis on Common Stock Investment*”

An unpublished Master Degree Dessertation (T.U. Nepal Commerce Campus).

Satyal, Mohan Purna (2005) “*Risk and Return Analysis of Listed Companies*”

An unpublished Master Degree Thesis (T.U. Shanker Dev Campus).

Shrestha, Dikpal (2009) *“Portfolio Analysis on Common Stock Investment of*

Joint Venture Banks in Nepal” An unpublished Master Degree Thesis

(Makawanpur Multiple Campus).

Tamang , Buddhi Raj (2003) *“Risk and Return Analysis of Commercial Banks in*

Nepal” An unpublished Master Degree Dissertation (T.U. Shanker Dev

Campus).

Wagle, Laxmi Prasad (2010) *“Analysis of Risk and Return on Common Stock*

Investment of Commercial Banks in Nepal” An unpublished Master Degree

Thesis (Makawanpur Multiple Campus.)

Reports :

Baral, K.J. (1999) *“Securities Market in Nepal”* A Research Report, faculty of

Management, T.U. Kirtipur. P:2.

Security Board Nepal (2009/10), Annual Report.

Security Board Nepal (2010/2011), Annual Report Fiscal Year.

Newspaper/Magazine/Web Articles :

Bahadur, Surya G.C. , *“The Journal of Nepalese*

Business Studies“ Vol. V, No. 1,

2008, December Page: 76-84

Bista, Kiran (2011)

“<http://www.articlesbase.com/investing-articles/stock-market-and-painful-investment-in-nepal-3413704.html>”

Ghimire, Atma Ram (Jan-2002), “*Gloom in the Share Market*”, New Business

Age

Ghimire, Atma Ram (June-2001), “*Nepal Share Market on Investor’s Prospective*”, Business Age.

Gorkha Patra National Daily (Aug-15, 2004) “*Weekly Share Analysis*”.

Gupta, L. C. and Chaudhary Utpal K. (Jan 29 - Feb 4, 2000) “*Return on Indian*

Equities” Economic and Political Weekly, Vol.-35:357-364.

Nepal Samachar Patra Daily (July 20, 2008) “*NEPSE feri ek hajar najik*”.

Pokharel, Nawaraj (Oct-Nov 1999), “*Stock Market Doing Pretty Well*” Business Age.

Pradhan, Rahe-Shyam (1993) “*Stock Market Behavior in Small Capital Market:*

A Case Study in Nepal”, The Nepalese Management Review, Vol-9:23.

Trop, Smith Dan (Jan-Feb., 1997), “*Relief from Double Taxation of Dividend*

Income". Horvand Business Review.

Websites :

www.nepalsharemarket.com

www.nepalstock.com

www.sebon.gov.np

Appendix

**Calculation of Yearly Return, Expected Return & S.D.
of Selected Listed Company and Market (NEPSE).**

Everest Bank					
Year	Closing Price	DPS	$R_e = \frac{DPS + (P_t - P_{t-1})}{P_{t-1}}$ (%)	NEPSE Points (NEP)	$R_m = \frac{(NEP_t - NEP_{t-1})}{NEP_{t-1}}$ (%)
2005/06	1379	0	-	386.83	-
2006/07	2430	25	78.03	683.95	76.81
2007/08	3132	10	29.30	963.36	40.38
2008/09	2455	20	-20.98	749.1	-22.22
2009/10	1630	30	-32.38	477.73	-36.11
2010/11	1094	30	-31.04	362.85	-24.22
Total			22.93		35.15

$$\text{Average Return on Market } (R_m) = \frac{\sum R}{n} = \frac{35.15}{5} = 7.03 \%$$

$$\text{Standard Deviation of Market } (\sigma_m) = \sqrt{\frac{\sum (R_m - ER_m)^2}{n-1}} = \sqrt{\frac{9706.72}{5-1}} = 49.26 \%$$

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

Appendix-A

Everest Bank Ltd. & Market

Everest Bank						Market	
Year	Closing Price	DPS	Return (R_{EVE}) (%)	$(R_{EVE} - ER)$	$(R_{EVE} - ER)^2$	NEPSE Points (NEP)	Market Return (R_m) (%)
2005/06	1379	0				386.83	
2006/07	2430	25	78.03	73.44	5393.81	683.95	76.81

2007/08	3132	10	29.30	24.72	610.85	963.36	40.85
2008/09	2455	20	-20.98	-25.56	653.42	749.1	-22.2
2009/10	1630	30	-32.38	-36.97	1366.63	477.73	-36.2
2010/11	1094	30	-31.04	-35.63	1269.35	362.85	-24.0
Total			22.93		9294.05		35.15

$$\begin{aligned}
\text{Stock Return (ER)} &= \frac{\sum R_{EVE}}{n} \\
&= 4.59 \% \\
\text{Standard Deviation (S.D.) } (\sigma_{EVE}) &= \sqrt{\frac{\sum (R_{EVE} - ER)^2}{n-1}} \\
&= 48.20 \% \\
\text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{EVE}}{ER_{EVE}} \\
&= 10.51 \\
\text{Co-Variance with Market } Cov(R_{EVE}, R_m) &= \frac{\sum (R_{EVE} - ER)(R_m - ER_m)}{n-1} = 2353.80 \% \\
\text{Correlation with Market Return } (\rho_{EVE,M}) &= \frac{Cov(R_{EVE}, R_m)}{\sigma_{EVE} \sigma_m} \\
&= 0.99 \\
\text{Beta Co-efficient } (\beta) &= \frac{Cov(R_{EVE}, R_m)}{\sigma_m^2} \\
&= 0.97 \\
\text{Systematic Risk (SR)} &= \beta \times \sigma_m \\
&= 47.48 \% \\
\text{Unsystematic Risk (USR)} &= (\text{S.D.} - \text{SR}) \\
&= 0.42 \%
\end{aligned}$$

Appendix-B (1)

Nabil Bank Ltd. & Market

Nabil Bank							
Year	Closing Price	DPS	Return (R_{NBL}) (%)	($R_{NBL}-ER$)	($R_{NBL}-ER$) ²	NEPSE Points(NEP)	MarketR (R_m) (%)
2005/06	2240	70				386.83	
2006/07	5050	85	129.24	122.67	15048.74	683.95	76.81
2007/08	5275	100	6.44	-0.13	0.02	963.36	40.85
2008/09	4899	60	-5.99	-12.56	157.71	749.1	-22.24
2009/10	2384	35	-50.62	-57.19	3270.73	477.73	-36.24
2010/11	1252	30	-46.22	-52.79	2787.06	362.85	-24.02
Total			32.84		21264.26		35.15

$$\begin{aligned} \text{Stock Return (ER)} &= \frac{\sum R_{NBL}}{n} \\ &= 6.57 \% \\ \text{Standard Deviation (S.D.) } (\sigma_{NBL}) &= \sqrt{\frac{\sum (R_{NBL} - ER)^2}{n-1}} \\ &= 72.91 \% \\ \text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{NBL}}{ER_{NBL}} \\ &= 11.10 \\ \text{Co-Variance with Market } Cov(R_{NBL}, R_m) &= \frac{\sum (R_{NBL} - ER)(R_m - ER_m)}{n-1} = 3259.40 \% \\ \text{Correlation with Market Return } (\rho_{NBL,M}) &= \frac{Cov(R_{NBL}, R_m)}{\sigma_{NBL} \sigma_m} \\ &= 0.91 \\ \text{Beta Co-efficient } (\beta) &= \frac{Cov(R_{NBL}, R_m)}{\sigma_m^2} \\ &= 1.34 \\ \text{Systematic Risk (SR)} &= \beta \times \sigma_m \\ &= 66.17 \% \\ \text{Unsystematic Risk (USR)} &= (\text{S.D.} - \text{SR}) \\ &= 6.75 \% \end{aligned}$$

Appendix-B (2)

General Finance Ltd. & Market

General Finance							
Year	Closing Price	DPS	Return (R_{GFL}) (%)	($R_{GFL}-ER$)	($R_{GFL}-ER$) ²	NEPSE Points(NEP)	MarketR (R_m) (%)

2005/06	150	0				386.83	
2006/07	140	0	-6.67	-35.33	1248.25	683.95	76.81
2007/08	140	0	0.00	-28.66	821.62	963.36	40.85
2008/09	179	0	27.86	-0.81	0.65	749.1	-22.22
2009/10	339	0	89.39	60.72	3687.11	477.73	-36.22
2010/11	450	0	32.74	4.08	16.64	362.85	-24.02
Total			143.32		5774.27		35.15

$$\text{Stock Return (ER)} = \frac{\sum R_{GFL}}{n} = 28.66\%$$

$$\text{Standard Deviation (S.D.) } (\sigma_{GFL}) = \sqrt{\frac{\sum (R_{GFL} - ER)^2}{n-1}} = 37.99\%$$

$$\text{Co-efficient of Variation (C.V.)} = \frac{\sigma_{GFL}}{ER_{GFL}} = 1.33$$

$$\text{Co-Variance with Market } Cov(R_{GFL}, R_m) = \frac{\sum (R_{GFL} - ER)(R_m - ER_m)}{n-1} = -1541.14\%$$

$$\text{Correlation with Market Return } (\rho_{GFL,M}) = \frac{Cov(R_{GFL}, R_m)}{\sigma_{GFL} \sigma_m} = -0.82$$

$$\text{Beta Co-efficient } (\beta) = \frac{Cov(R_{GFL}, R_m)}{\sigma_m^2} = -0.64$$

$$\text{Systematic Risk (SR)} = \beta \times \sigma_m = -31.81\%$$

$$\text{Unsystematic Risk (USR)} = (\text{S.D.} - \text{SR}) = 69.28\%$$

Appendix-B (3)

MahaLaxmi Finance Ltd.&Market

MahaLaxmi Finance							
Year	Closing Price	DPS	Return (R _{MLF}) (%)	(R _{MLF} -ER)	(R _{MLF} -ER) ²	NEPSE Points(NEP)	MarketR (R _m) (%)
2005/06	260	10				386.83	
2006/07	260	10	3.85	-46.90	2199.81	683.95	76.81
2007/08	1191	1.12	358.51	307.76	94715.87	963.36	40.85
2008/09	1191	0	0.00	-50.75	2575.39	749.1	-22.22

2009/10	288	24	-73.80	-124.55	15513.15	477.73	-36.2
2010/11	180	7.75	-34.81	-85.56	7320.05	362.85	-24.0
Total			253.74		122324.26		35.15

$$\begin{aligned} \text{Stock Return (ER)} &= \frac{\sum R_{MLF}}{n} \\ &= 50.75 \% \\ \text{Standard Deviation (S.D.) } (\sigma_{MLF}) &= \sqrt{\frac{\sum (R_{MLF} - ER)^2}{n-1}} \\ &= 174.84 \% \\ \text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{MLF}}{ER_{MLF}} \\ &= 3.45 \\ \text{Co-Variance with Market } Cov(R_{MLF}, R_m) &= \frac{\sum (R_{MLF} - ER)(R_m - ER_m)}{n-1} = 4167.08 \% \\ \text{Correlation with Market Return } (\rho_{MLF,M}) &= \frac{Cov(R_{MLF}, R_m)}{\sigma_{MLF} \sigma_m} \\ &= 0.48 \\ \text{Beta Co-efficient } (\beta) &= \frac{Cov(R_{MLF}, R_m)}{\sigma_m^2} \\ &= 1.72 \\ \text{Systematic Risk (SR)} &= \beta \times \sigma_m \\ &= 84.59 \% \\ \text{Unsystematic Risk (USR)} &= (\text{S.D.} - \text{SR}) \\ &= 90.28 \% \end{aligned}$$

Appendix-B (4)

Nepal Life Insurance Co. Ltd & Market

Nepal Life Insurance							
Year	Closing Price	DPS	Return (R _{NLI}) (%)	(R _{NLI} -ER)	(R _{NLI} -ER) ²	NEPSE Points (NEP)	Market Return (R _m) (%)
2005/06	427	0				386.83	
2006/07	766	0	79.39	57.97	3360.81	683.95	76.81
2007/08	1669	0	117.89	96.47	9305.79	963.36	40.85
2008/09	1295	0	-22.41	-43.83	1920.82	749.1	-22.2
2009/10	850	0	-34.36	-55.78	3111.58	477.73	-36.2
2010/11	566	0	-33.41	-54.83	3006.37	362.85	-24.0
Total			107.09		20705.37		35.15

$$\begin{aligned}
\text{Stock Return (ER)} &= \frac{\sum R_{NLI}}{n} \\
&= 21.42 \% \\
\text{Standard Deviation (S.D.) } (\sigma_{NLI}) &= \sqrt{\frac{\sum (R_{NLI} - ER)^2}{n-1}} \\
&= 71.95 \% \\
\text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{NLI}}{ER_{NLI}} \\
&= 3.36 \\
\text{Co-Variance with Market } Cov(R_{NLI}, R_m) &= \frac{\sum (R_{NLI} - ER) (R_m - ER_m)}{n-1} = 3176.93 \% \\
\text{Correlation with Market Return } (\rho_{NLI,M}) &= \frac{Cov(R_{NLI}, R_m)}{\sigma_{NLI} \sigma_m} \\
&= 0.90 \\
\text{Beta Co-efficient } (\beta) &= \frac{Cov(R_{NLI}, R_m)}{\sigma_m^2} \\
&= 1.31 \\
\text{Systematic Risk (SR)} &= \beta \times \sigma_m \\
&= 64.49 \% \\
\text{Unsystematic Risk (USR)} &= (\text{S.D.} - \text{SR}) \\
&= 7.46 \%
\end{aligned}$$

Appendix-B (5)

Himalayan General Insurance Co. Ltd. & Market

Himalayan General Insurance							
Year	Closing Price	DPS	Return (R _{HGIC}) (%)	(R _{HGIC} -ER)	(R _{HGIC} -ER) ²	NEPSE Points (NEP)	Market Return (R _m) (%)
2005/06	189	0				386.83	
2006/07	300	0	58.73	53.64	2877.51	683.95	76.81
2007/08	345	0	15.00	9.91	98.25	963.36	40.85
2008/09	285	5.26	-15.87	-20.95	439.09	749.1	-22.22
2009/10	234	0	-17.89	-22.98	528.20	477.73	-36.22
2010/11	200	0	-14.53	-19.62	384.85	362.85	-24.02
Total			25.44		4327.90		35.15

$$\begin{aligned}
\text{Stock Return (ER)} &= \frac{\sum R_{HGIC}}{n} \\
&= 5.09 \%
\end{aligned}$$

$$\begin{aligned} \text{Standard Deviation (S.D.) } (\sigma_{HGIC}) &= \sqrt{\frac{\sum (R_{HGIC} - ER)^2}{n-1}} \\ &= 32.89 \% \\ \text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{HGIC}}{ER_{HGIC}} \\ &= 6.47 \\ \text{Co-Variance with Market } Cov(R_{HGIC}, R_m) &= \\ \frac{\sum (R_{HGIC} - ER) (R_m - ER_m)}{n-1} &= 1573.88 \% \\ \text{Correlation with Market Return } (\rho_{HGIC,M}) &= \frac{Cov(R_{HGIC}, R_m)}{\sigma_{HGIC} \sigma_m} \\ &= 0.97 \\ \text{Beta Co-efficient } (\beta) &= \frac{Cov(R_{HGIC}, R_m)}{\sigma_m^2} \\ &= 0.65 \\ \text{Systematic Risk (SR)} &= \beta \times \sigma_m \\ &= 31.95 \% \\ \text{Unsystematic Risk (USR)} &= (\text{S.D.} - \text{SR}) \\ &= 0.94 \% \end{aligned}$$

Appendix-B (6)

Unilever Ltd. & Market

UniLever Limited							
Year	Closing Price	DPS	Return (R _{ULL}) (%)	(R _{ULL} -ER)	(R _{ULL} -ER) ²	NEPSE Points(NEP)	MarketR (R _m) (%)
2005/06	2500	400				386.83	
2006/07	3400	250	46.00	21.95	481.70	683.95	76.81
2007/08	4100	275	28.68	4.62	21.38	963.36	40.85
2008/09	4250	325	11.59	-12.47	155.43	749.1	-22.24
2009/10	4149	325	5.27	-18.78	352.76	477.73	-36.24
2010/11	4781	560	28.73	4.68	21.88	362.85	-24.00
Total			120.26		1033.14		35.15

$$\begin{aligned} \text{Stock Return (ER)} &= \frac{\sum R_{ULL}}{n} \\ &= 24.05 \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation (S.D.) } (\sigma_{ULL}) &= \sqrt{\frac{\sum (R_{ULL} - ER)^2}{n-1}} \\ &= 16.07 \% \end{aligned}$$

$$\begin{aligned} \text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{ULL}}{ER_{ULL}} \\ &= 0.67 \\ \text{Co-Variance with Market } Cov(R_{ULL}, R_m) &= \frac{\sum (R_{ULL} - ER) (R_m - ER_m)}{n-1} = 679.97 \% \\ \text{Correlation with Market Return } (\rho_{ULL,M}) &= \frac{Cov(R_{ULL}, R_m)}{\sigma_{ULL} \sigma_m} \\ &= 0.86 \\ \text{Beta Co-efficient } (\beta) &= \frac{Cov(R_{ULL}, R_m)}{\sigma_m^2} \\ &= 0.28 \\ \text{Systematic Risk (SR)} &= \beta \times \sigma_m \\ &= 13.80 \% \\ \text{Unsystematic Risk (USR)} &= (\text{S.D.} - \text{SR}) \\ &= 2.27 \% \end{aligned}$$

Appendix-B (7)

Bottlers Nepal Ltd. Balaju & Market

Bottlers Nepal Ltd. Balaju							
Year	Closing Price	DPS	Return (R_{BNL}) (%)	$(R_{BNL} - ER)$	$(R_{BNL} - ER)^2$	NEPSE Points (NEP)	Market Return (R_m) (%)
2005/06	500	0				386.83	
2006/07	500	0	0.00	-37.40	1398.76	683.95	76.81
2007/08	700	0	40.00	2.60	6.76	963.36	40.85
2008/09	700	0	0.00	-37.40	1398.76	749.1	-22.22
2009/10	700	0	0.00	-37.40	1398.76	477.73	-36.22
2010/11	1729	0	147.00	109.60	12012.16	362.85	-24.00
Total			187.00		16215.20		35.15

$$\begin{aligned} \text{Stock Return } (ER) &= \frac{\sum R_{BNL}}{n} \\ &= 37.40 \% \\ \text{Standard Deviation (S.D.) } (\sigma_{BNL}) &= \sqrt{\frac{\sum (R_{BNL} - ER)^2}{n-1}} \\ &= 63.67 \% \\ \text{Co-efficient of Variation (C.V.)} &= \frac{\sigma_{BNL}}{ER_{BNL}} \\ &= 1.70 \\ \text{Co-Variance with Market } Cov(R_{BNL}, R_m) &= \end{aligned}$$

$$\frac{\sum (R_{BNL} - ER) (R_m - ER_m)}{n-1} = -803.83 \%$$

$$\text{Correlation with Market Return } (\rho_{BNL,M}) = \frac{\text{Cov}(R_{BNL}, R_m)}{\sigma_{BNL} \sigma_m} = -0.26$$

$$\text{Beta Co-efficient } (\beta) = \frac{\text{Cov}(R_{BNL}, R_m)}{\sigma_m^2} = -0.33$$

$$\text{Systematic Risk (SR)} = \beta \times \sigma_m = -16.32 \%$$

$$\text{Unsystematic Risk (USR)} = (\text{S.D.} - \text{SR}) = 79.99 \%$$

Appendix-B (8)

Salt Trading Company Ltd. & Market

Salt Trading Company							
Year	Closing Price	DPS	Return (R_{STC}) (%)	$(R_{STC}-ER)$	$(R_{STC}-ER)^2$	NEPSE Points (NEP)	Market Return (R_m) (%)
2005/06	316	20				386.83	
2006/07	325	20	9.18	5.55	30.75	683.95	76.81
2007/08	331	20	8.00	4.37	19.08	963.36	40.85
2008/09	346	10	7.55	3.92	15.37	749.1	-22.24
2009/10	307	5	-9.83	-13.46	181.14	477.73	-36.22
2010/11	307	10	3.26	-0.37	0.14	362.85	-24.00
Total			18.16		246.48		35.15

$$\text{Stock Return } (ER) = \frac{\sum R_{STC}}{n} = 3.63 \%$$

$$\text{Standard Deviation (S.D.) } (\sigma_{STC}) = \sqrt{\frac{\sum (R_{STC} - ER)^2}{n-1}} = 7.85 \%$$

$$\text{Co-efficient of Variation (C.V.)} = \frac{\sigma_{STC}}{ER_{STC}} = 2.16$$

$$\text{Co-Variance with Market } \text{Cov}(R_{STC}, R_m) = \frac{\sum (R_{STC} - ER) (R_m - ER_m)}{n-1} = 253.43 \%$$

$$\text{Correlation with Market Return } (\rho_{STC,M}) = \frac{\text{Cov}(R_{STC}, R_m)}{\sigma_{STC} \sigma_m}$$

$$= 0.66$$

$$\text{Beta Co-efficient } (\beta) = \frac{\text{Cov}(R_{STC}, R_m)}{\sigma_m^2}$$

$$= 0.10$$

$$\text{Systematic Risk (SR)} = \beta \times \sigma_m$$

$$= 5.14 \%$$

$$\text{Unsystematic Risk (USR)} = (\text{S.D.} - \text{SR})$$

$$= 2.71 \%$$

Appendix-B (9)

Bishal Bazar Company Ltd. & Market

Bishal Bazar Company							
Year	Closing Price	DPS	Return (R_{BBC}) (%)	($R_{BBC}-ER$)	($R_{BBC}-ER$) ²	NEPSE Points(NEP)	MarketR (R_m) (%)
2005/06	2400	90				386.83	
2006/07	2400	100	4.17	-1.47	2.17	683.95	76.81
2007/08	2201	20	-7.46	-13.10	171.58	963.36	40.85
2008/09	3264	50	50.57	44.93	2018.46	749.1	-22.24
2009/10	3100	10	-4.72	-10.36	107.30	477.73	-36.21
2010/11	2655	0	-14.35	-20.00	399.82	362.85	-24.01
Total			28.20		2699.34		35.15

$$\text{Stock Return } (ER) = \frac{\sum R_{BBC}}{n}$$

$$= 5.64 \%$$

$$\text{Standard Deviation (S.D.) } (\sigma_{BBC}) = \sqrt{\frac{\sum (R_{BBC} - ER)^2}{n-1}}$$

$$= 25.98 \%$$

$$\text{Co-efficient of Variation (C.V.)} = \frac{\sigma_{BBC}}{ER_{BBC}}$$

$$= 4.61$$

$$\text{Co-Variance with Market } \text{Cov}(R_{BBC}, R_m) = \frac{\sum (R_{BBC} - ER)(R_m - ER_m)}{n-1} = -197.87 \%$$

$$\text{Correlation with Market Return } (\rho_{BBC,M}) = \frac{\text{Cov}(R_{BBC}, R_m)}{\sigma_{BBC} \sigma_m}$$

$$= -0.15$$

$$\text{Beta Co-efficient } (\beta) = \frac{\text{Cov}(R_{BBC}, R_m)}{\sigma_m^2}$$

$$= -0.08$$

$$\text{Systematic Risk (SR)} = \beta \times \sigma_m$$

$$= -4.02 \%$$

$$\text{Unsystematic Risk (USR)} = (\text{S.D.} - \text{SR})$$

$$= 29.99 \%$$

Appendix-B (10)

**Calculation of Stock Return, S.D., Cov., Correlⁿ,
Risk Minimizing Weight, Portfolio Risk & Return
between Everest Bank Ltd.& Uni Lever Company Ltd.**

EVE						ULL					
Year	Closing Price	DP S	Return (R _{EVE}) (%)	(R _{EVE} - ER)	(R _{EVE} - ER) ²	Closing Price	DP S	Return (R _{ULL}) (%)	(R _{ULL} - ER)	(R _{ULL} - ER) ²	(R _{EVE} - ER) x (R _{ULL} - ER)
2005/06	2400	90				386.83					
2006/07	2400	100	4.17	-1.47	2.17	683.95	76.81	69.78	4869.18		-102.85
2007/08	2201	20	-7.46	13.10	171.58	963.36	40.85	33.82	1143.99		-443.05
2008/09	3264	50	50.57	44.93	2018.46	749.1	22.24	29.27	856.75		-1315.04
2009/10	3100	10	-4.72	10.36	107.30	477.73	36.23	43.26	1871.05		448.08
2010/11	2655	0	14.35	20.00	399.82	362.85	24.05	31.08	965.75		621.39
Total			28.20		2699.34		35.15		9706.72		-791.47

$$1. \text{ Stock Return } (ER_{EVE}) = \frac{\sum R_{EVE}}{n}$$

$$= 4.59 \%$$

$$2. \text{ Stock Return } (ER_{ULL}) = \frac{\sum R_{ULL}}{n}$$

$$= 24.05 \%$$

$$3. \text{ Standard Deviation (S.D.) } (\sigma_{EVE}) = \sqrt{\frac{\sum (R_{EVE} - ER)^2}{n-1}} = 48.20 \%$$

$$4. \text{ Standard Deviation (S.D.) } (\sigma_{ULL}) = \sqrt{\frac{\sum (R_{ULL} - ER)^2}{n-1}} = 16.07 \%$$

$$5. \text{ Co-Variance [} Cov(R_{EVE}, R_{ULL}) \text{]} = \frac{\sum (R_{EVE} - ER)(R_{ULL} - ER_{ULL})}{n-1} = 643.13 \%$$

$$6. \text{ Correlation } (\rho_{EVE,ULL}) = \frac{Cov(R_{EVE}, R_{ULL})}{\sigma_{EVE} \sigma_{ULL}} = 0.83$$

$$7. \text{ The Portfolio Risk Minimizing Weight for EVE } (W_{EVE}) = \frac{\sigma_{ULL}^2 - Cov_{EVE,ULL}}{\sigma_{EVE}^2 + \sigma_{ULL}^2 - 2Cov_{EVE,ULL}} = -0.30$$

$$8. \text{ The Portfolio Risk Minimizing Weight for ULL } = 1 - W_{EVE} = 1 - (-0.30) = 1.30$$

$$9. \text{ Portfolio Risk } (\sigma_p) = \sqrt{W_{EVE}^2 \sigma_{EVE}^2 + W_{ULL}^2 \sigma_{ULL}^2 + 2Cov_{EVE,ULL} \cdot W_{EVE} \cdot W_{ULL}} = 12.00$$

$$10. \text{ Portfolio Return } (R_p) = W_{EVE} \times R_{EVE} + W_{ULL} \times R_{ULL} = 29.84 \%$$

∴ Others are also calculated as same processes above

S. No.	Name of Selected Company	FY 2005/06				FY 2006/07				FY 2007/08			
		HP	LP	CP	D PS	HP	LP	CP	D PS	HP	LP	CP	D PS
1	EVE	14 10	80 0	13 79	0	24 30	11 00	24 30	25	31 95	18 04	31 32	10
2	NBL	23 00	15 00	22 40	70	50 50	20 25	50 50	85	67 00	34 10	52 75	10 0
3	GFL	15 0	14 0	15 0	0	15 2	14 0	14 0	0	14 0	14 0	14 0	0
4	MLF	27 0	26 0	26 0	10	37 2	25 0	26 0	10	12 40	39 0	11 91	1.1 2
5	NLI	40 0	37 0	42 7	0	10 00	42 7	76 6	0	22 72	80 4	16 69	0
6	HGIC	21 5	17 1	18 9	0	30 0	19 8	30 0	0	34 8	31 5	34 5	0
7	ULL	25 00	16 30	25 00	40 0	34 50	25 10	34 00	25 0	41 31	33 50	41 00	27 5
8	BNL	50 0	50 0	50 0	0	50 0	50 0	50 0	0	72 3	70 0	70 0	0
9	STC	31 6	31 5	31 6	20	32 5	31 6	32 5	20	33 1	33 1	33 1	20
10	BBC	24 00	20 00	24 00	90	25 75	24 00	24 00	10 0	27 54	20 00	22 01	20

S. No.	Name of Selected Company	FY 2008/09				FY 2009/10				FY 2010/11			
		HP	LP	CP	D PS	HP	LP	CP	D PS	HP	LP	CP	D PS
1	EVE	36 72	18 55	24 55	20	27 03	10 71	16 30	30	15 98	78 1	10 94	30
2	NBL	64 00	30 50	48 99	60	52 40	16 65	23 84	35	23 37	79 0	12 52	30
3	GFL	17 9	14 2	17 9	0	37 5	12 5	33 9	0	45 0	16 4	45 0	0
4	MLF	11 91	11 91	11 91	0	34 3	28 8	28 8	24	28 8	17 9	18 0	7.7 5
5	NLI	20 10	10 15	12 95	0	12 95	85 0	85 0	0	83 3	55 8	56 6	0
6	HGIC	37	28	28	5.2	28	22	23	0	23	19	20	0

		5	5	5	6	0	6	4		4	8	0	
7	ULL	44 52	37 23	42 50	32 5	43 46	40 68	41 49	32 5	61 20	42 31	47 81	56 0
8	BNL	74 2	71 4	70 0	0	70 0	70 0	70 0	0	19 09	71 3	17 29	0
9	STC	34 6	33 1	34 6	10	34 6	30 1	30 7	5	31 3	30 7	30 7	10
10	BBC	32 64	21 57	32 64	50	32 00	26 95	31 00	10	31 60	26 55	26 55	0

(Source: www.nepalstock.com 2005/06 to 2010/11)

- HP = Higher Price of Share for The Year.
LP = Lower Price of Share for The Year.
CP = Closing Price of Share for The Year.
DPS = Dividend Per Share.

Appendix D