RISK AND RETURN OF FINANCIAL COMPANIES

By
ROHIT REGMI
Shanker Dev Campus
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RECOMMENDATION

This is to certify that the Thesis

Submitted by:

ROHIT REGMI

Entitled:

RISK AND RETURN OF FINANCIAL COMPANIES

has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

…………………..…..……   …………………………..………   ………………………………….

Prof. Snehalata Kafle   **Prof. Bishweshor Man Shrestha**   **Prof. Dr. Kamal Deep Dhakal**

(Thesis Supervisor)   **(Head, Research Department)**   **(Campus Chief)**

…………………..…..……

Pitri Raj Adhikari

(Thesis Supervisor)

VIVA-VOCE SHEET

We have conducted the viva –voce of the thesis presented

By

ROHIT REGMI

Entitled:

RISK AND RETURN OF FINANCIAL COMPANIES

And found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for the degree of

Master of Business Studies (MBS)

<u>Viva-Voce Committee</u>

Head, Research Department ………….………….…………

Member (Thesis Supervisor) ………….………….…………

Member (Thesis Supervisor) ………….………….…………

Member (External Expert) ………….………….…………

DECLARATION

I hereby declare that the work reported in this thesis entitled "**Risk and Return of Financial Companies"** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master's Degree in Business Study (M.B.S.) under the supervision of **Prof. Snehalata Kafle** and **Pitri Raj Adhikari** of Shanker Dev Campus.

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Rohit Regmi

Shanker Dev Campus

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ABBREVIATION

Ace Finance Company Ltd.	:	ACFCL
Annapurna Finance Company Ltd.	:	ANFCL
Citizen investment Trust	:	CIT
Kathmandu Finance Ltd.	:	KAFAL
Narayani Finance Limited	:	NAFIL
National Finance Co .Ltd	:	NAFAL
Nepal Housing and Merchant Finance Ltd	:	NHMFAL
Nepal Share Market and Finance Company Ltd.	:	NSMFCL
People finance Limited	:	PEFAL
Samjhana Finance Company Limited	:	SAFCL

SeBon   :   Security Board of Nepal

CHAPTER-I

INTRODUCTION

1.1 General Background

Finance companies are newly emerged institutions in Nepal. Financial sector is the dynamic part of economy and that collects unused funds and mobilizes it in needed areas that are very important for trade, industry and commerce. In Nepal, finance companies do extend intermediate credit to individual and business firm as quickly and easily as possible. They can be registered only as public limited companies as per the Finance Company Act, 1985. Finance companies are registered with the Registrar of Company, Government of Nepal and license for operation is generated by Nepal Rastra Bank.

Basically, finance companies perform a wide variety of functions depending upon the most of their specializations. They obtain most of their funds in large quantities by borrowing directly from other financial capital market. They perform to act as the main lending organization. They also provide the loan for leasing finance, housing finance and hire purchase.

During the 2040 years, there were not any financial institutions to operate the financial transaction. These financial transactions had been operating by the two commercial banks, Nepal Bank Limited and Rastriya Banijya Bank. In the following decade, finance companies were introduced to accomplish the capital market in Nepal. Nepal Housing Development Finance Company was first finance company in Nepal, which was established on behalf of Government of Nepal. Then after Nepal Finance and Saving Company was established on behalf of public people. In this way, finance companies were established.

As of mid January 2008, there were 79 finance companies in operation throughout the country. Out of these, 53 finance companies were listed in NEPSE. Each and every managerial decision making is based on financial analysis. It covers the acquisition, utilization, control and administration of funds. Managerial finance is an exciting and dynamic area of study and its importance to the long run success of today's business is

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unquestioned. Virtually, all individual and organization earns or raise money and invest money. Finance is concerned with the process of institution, market and instrument involved in the transfer of money among and between individual business organization and government. The field of finance is broad and dynamic. It directly affects the lives of every person and every organization. The finance is concerned with the conversion of capital fund to meet the financial need of business organization. Financial management leads to the decision making most skillfully. Finance has become an important branch of any economy of which share market is a leading sector. In a short period, the field of finance has developed considerably. Securities raise fund in capital market certainty help to expand the national economy (Mishra, 2002:2*)*.

Even in least developed countries like Nepal, stock market became one of the important parts of the national economy. A security market is a place where people buy and sell financial instrument. Stock market is a financial that probably has greater glamour and is perhaps the least understood. Some observers consider it as a legalized heaven for the gambling and many investors consider stock market investing as a game in which sole purpose is picking winners.

There are different types of securities such as Treasury bill, long-term government bonds, long-term corporate bond, preferred stock, common stock etc. Among these, this study concerns in common stock. So, hence first of all we have to know about the common stock and its related subject matter. Common stock holders are owner of the company. Collectively, they own the company and ultimate risk is associated with their ownership. So, the common stock is the risky security. But here the question arises that what is risk? Risk is the variability of the return. Risk can be defined as the chance that some unfavorable event will occur. It is investor wants to back higher return to invest in common stock, but their expected return may or may not be in realities. This uncertainty is the major risk for investors in stock market investment. According to J. Jordan and Donald E .Fisher, "An investment is the commitment of funds made in the expectation of some positive rate of return. If the investment is properly undertaken, the return will be commensurate with the risk the investor assumes. In simple sense, investment means

sacrifice of current fund for future cash flows." Here, future cash flows means return and future is uncertain. The return on the investment is as any change in market price of share (MPS) plus dividend and it is usually expressed in the percentage.

Generally, investors are risk averse. They always seek higher risk return for more risk as the risk premium. So, the primary problems of the investment are to identify the security which has low risk and high return. How ever, return cannot increase substantially; risk can be reduced by diversification of funds in different stock making a portfolio. Well diversification can eliminate the risk; which is associated with change in return in the market a whole, cannot avoid by the diversification.

1.2 Statement of the Problem

Lack of information and knowledge is a great problem faced by individual investor who are being manipulated and exploited by the financial institution and other market intermediaries to such an extent that investing in common stock is intolerable hazardous. Investors' attitudes and perception plays a vital role in rational decision, which is influenced by the knowledge and access to the data required for analysis.

In the beginning of the 1990 decade, profit of the finance companies was increased so that their market value per share (MPS) was also high. But at end of that decade, their profit and the MPS were decreased. Due to strict rules and regulations by Nepal Rastra bank, the scopes of operation of finance companies are also limited. Hence, most of the investors realize high risk to invest in this field.

Investors can be classified into three categories on the basis of risk and return. First type of investors are risk lover investor who become ready to face high risk in the hope of high return. The second type of investors are risk avoider investor who try to avoid facing high risk and become ready to be satisfied in low return. The third types of investor come along in between these two investor. They are ready to bear medium risk and have medium return. These are the three type of institutional investor. The study has examined whether these investor are aware about the portfolio management of the institutions they

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are investing or not. How effectively the financial institutions are mobilizing their investment and whether return that investor get back is sufficient or not in compare to the risk they are bearing. It is not necessary that the investor who bears high risk have high return. The investor may bear high risk and have relatively low return or vice-versa (Mishra, 2002:2).

Government policy also does not create favorable and proper investment situations to encourage the investors to invest in this field. Plan and policies are not implemented for this purpose. There is no any strong commitment of the policy makers and government for increasing public investment.

Potential investors feel more risk to invest in common stock that it really has the risk. Accurate information and unbiased analysis are essential for their confidence towards the stock investment. Therefore, unavailability of a simple and clear way or techniques to analyze risk and return of individual stock and portfolio are being the major weakness of increasing stock investment and stock market as well.

The major problems of the study are:
- How do investors get consensus about the magnitude of risk?
- How can one make higher return through lower risk?
- What should be the compensation for bearing risk?
- What are the criteria that the stock they are holding will give them a favorable return?
- How can one construct efficient portfolio?

1.3 Objective of the Study

The main objective of the study is to analyze the risk, return and other relevant variable of common stock investment of Nepalese finance companies that helping making decision about investment on securities of the companies.

The major objectives of the study are as follows:
- To examine the risk and return on common stock of individual finance company.

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) To evaluate that the stock of selected companies are overpriced, under priced or correctly priced.

) To find and evaluate the optimum portfolio.

) To examine the performance of Nepalese financial companies under study of profitability

1.4 Significance of the Study

The main target of the study is potential investor who wants to invest in security but repeal by imagining of unreal risk. Therefore, the study is more significant for exploring and increasing of stock investment. It is not only used as partial fulfillment of TU course of Master in business studies, but it will also provide little contribution to Nepal stock market development.

1.5 Limitation of the Study

The following are the limitation of the study:

) Data published from various sources differ from the figures published by NEPSE and respective finance companies. How ever, in this study annual report of relevant companies is taken in to account as the basic sources of data.

) The study only focus on the analysis of risk and return associated with common stock investment of selected finance companies. The finding of the study in based on the performance 10 listed companies for the period of seven years starting from fiscal year 2002/03 to 2009/10.

) The main objective of the study is to fulfill the partial requirement of masters in business study course TU Nepal. So, the study can not cover all the dimension of the subject and can not penetrate the extreme depth of it. As a research student the study will be unbiased but resource and time period is limited.

1.6 Organization of the Study

The study is divided into five chapters.

Chapter I: Is the introduction part of the study and includes the introduction and general backgrounds, statement of problem, objectives of the study, significance of the study and limitation of the study.

Chapter II: Review of literature includes the review of previous research on the same field, especially from some relevant books, journals, unpublished thesis and Research gap.

Chapter III: Research methodology includes the research design, data collection procedure, tools for analysis and presentation.

Chapter IV: Data presentation and analysis part; it is the main body of research. It includes data analysis; the risk and return of each finance companies and interpretation are also made. Industry wise comparison in terms of risk and return and portfolio of common stocks and major findings are also presented in this chapter.

Chapter V: Summary, conclusion and recommendation are presented in this chapter. Finally, Includes Bibliography and Appendix.

CHAPTER- II
LITERATURE REVIEW

The primary concern of this study is to focus on risk and return characteristics of common stock of finance companies. This chapter deals with the theoretical aspect of the topic on "Risk and return analysis of common stock investment" in analytical and descriptive manner. Regarding the review of literature various books. Journals and articled, some research reports related with this topic have been reviewed.

"The purpose of reviewing the literature to develop some expertise in one's area to see what new contribution can e made and to receive some ideas for developing a research designs. The previous studies can not be ignored because they provide the foundation to the present study. The present study is simply the continuity in the research design" (Wolf and Panta, 1999:30).

2.1 Conceptual Review
In this study some relevant books are studied. Since this topic is mainly focused on risk and return as common stock investment a finance company. Hence the researcher has deal with accordingly which area as follows.

2.1.1 Concept of Investment on Common Stock
"Investment in its broadest sense means the sacrifice of current dollars for future dollars. Two Different attributed are generally involved time and risk. The reward comes later, if at all and the magnitude is generally uncertain" (Francis, 1997: 101).

The investment process describes how an investors goes about making decision with regard to what marketable securities to invest in, how extensive the investment should be, and when the investment should be made. The formal investment process includes.

1. Set Investment Policy

It involves determining the investor's objectives and the amount of his or her investable wealth. Investment objective should be stated in term of both risk and return.

2. Perform Security Analysis

It involves examining several individual securities or group of security with in the broad categories of financial assets previously identified.

3. Construct a Portfolio

The third step in the investment process portfolio construction involved identifying those specific assets in which to invest, as well as determining the proportions of the investors wealth to put in to each one. Here the issue of selectivity timing and diversification need to be addressed by the investor.

4 Revise the Portfolio

Portfolio revision concerns the periodic repetition of the previous three steps. That is, overtime the investor may change his or her investment objectives which in turn may cause the currently held portfolio to be less than optimal.

5. Evaluate the Performance of the Portfolio

It involved determining periodically how the portfolio performed. In term not only the return earned but also the risk experienced by the investor (Sharpe; 2002: 11-14).

2.1.2 Common Stock

"Common stock represents equity or an ownership position in a corporation. It is a residual claim, in the sense that creditors and preferred shareholder must be paid as scheduled before common stockholder can receive any payment. In bankruptcy, common stock holders are in the principle entitled only to any value remaining after all claimants have been satisfied. Thus, risk is the highest with common stock and so must be in expected return, when investors buy common stock, they receive certificate of there being

part owners of the company. The certificate states the number of shares purchased and their par value" (Bhalla, 2004: 154).

"The true owners of the business firms are the common stockholders, who invest their money in the firm only because of their expectation of future returns. A common stock holder is sometimes referred to as a residual owner since in essence he or she receives what is left after other claims on the firm's income and assets have been satisfied. As a result of this generally uncertain position, the common stockholder expects to be compensated with adequate divided and ultimately capita gains" (Lawrence, 1985:210).

Common stock holders are entitled certain right, which are as follows.
- Control through voting right
- Preemptive right
- Limited liability
- Right to income and distribution of additional shares
- Residual right

Common Stock Values

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

Par Value

The face value of one stock established at the time the stock is initially issue known as par value. Generally common stock carry Rs100 par value.

Book Value

The sum of the cumulative R/E and other entries such as common stock and capital contribution in excess of par value under stock holder's equity is the book value of the equity.

Market Value

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

2.1.3 Security Market

A security market can be defined as a mechanism for bringing together buyers and sellers of financial assets. In order to, facilitate trading. It means the market where the securities are treated. Security market can be distinguished in to.

- 〕 Primary and secondary market
- 〕 Money and Capital Market

Primary Market

Security offered for the first time to the general public through the primary securities market. The issuer may be a brand new company. It is also known as New Issue Market (NIM).

Secondary Market

"The secondary market is not keeping pace with the growth of the primary market. This is mainly due to lack of the needed efforts on the concerned authority to devise suitable package of measure to encourage the growth of broker network in the country's growing stock exchange″ (Shrestha, 1992: 18).

Money Market

Money market is also called short term financial market which is the set of supplying short term debt or working capital needed for industries, business or incorporated etc. The instruments of money market are inter-bank deposited, government securities, banker's acceptance, certificate of deposited and commercial papers issued by non financial institutions.

Capital Market

Capital Market is the market where the transaction of long term finance is made. The fund collected in this market are raised and traded by long term financial instrument such as equities and bonds.

2.1.4 Return on Common stock

Single period Measure of Return

The investment return is defined as the after tax increase in the value of the initial investment. The increase in value can come from to sources direct cash payment to the investor or an increase in the market value of the investment relative to the original purchase price. The rate of return over the holding period, or HPR is computed as in

$$HPR \; X \; \frac{Ending \;\; price \; Z \; beginning \;\; price \; \Gamma \; Cash \; receipt}{Beginning \;\; price}$$

Annualized Holding Period Return

"Holding period return measure mentioned above is useful with an investment horizon of one year or less. For longer periods, it is better to calculate rate of return as an investment yield. The yield calculation is present value based and this considers the time value of money" (Van Horne and Wachowicz, 1997: 90).

HPR are reported as an annual equivalent is possible measure of Annualized HPR might be the average of several HPR such as:

$$HPR = \frac{\overset{1}{\underset{t \, X1}{(HPR_t)}}}{n}$$

However, the simple arithmetic averaging ignores the compounding effects that results if the first period return is re invested. In addition, the result of an arithmetic average retune can be distorted if there is large difference in the rate of returns across time periods. Annualized rate of return is calculated.

Annual rate and return $(R) = (1 + H \; PR)^{1/n} - 1$

Required Rate of Return

"When setting the required rate of return on an Investment, an investor must consider the real rate of return, expected inflation and risk. Because consumption is foregone today, the investor is entitled to a rate of return that compensated for this deferred consumption

since the investor expects to receive an increase in the real goods purchase later, and assuming for the moment, zero inflation and risk, the required rate could equal to the real rate of return, in which case it would represent the pure time value of money. The capital markets determine this real based upon the supply of money to be invested relative to the demand for borrowed money" (Chency and Moses, 1995: 33).The required rate of Return is the minimum rate of return that an investor expects from his/her investment in risky assets. It is the function of real rate of return and risk. The required rte of return is the return on risk free assets.

The required rate of Return using CAPM

Required Rate of Return $(K) = Rf + (Rm - Rf) \beta_j$

Expected Rate of Return

If an investment is to be made, the expected rate of return or the expected holding period return, should be equal to or greater than the required rate of return for that investment. The expected rate of return is based upon the expected cash receipt [e.g. divided an interest] over the holding period and the expected ending or selling price. The expected rate of return is unknown future return. The investor has forecast possible outcomes each based upon a possible state of the economic. Each economic state will result in a different expected rate of return. Subjective probabilities are assigned to each out come. The overall expected rate of return, E (HPR) can be calculated as a weighted average of the three forecasts.

$$E\ (HPR) = \sum_{t\,X1}^{n} Pj \mid HPRj$$

2.1.5   Stock Valuation

"Financial manager use different analytical techniques for valuing common stock. The stockholder expects regular earnings in the form of dividends and capital gain by upward movement of the stock price. To maximize the stock price stock valuation model can be

used as important tools mainly three basic model are used to value of stock" (Pike and Neale, 1996:21).

S.No.	Model	Valuation Model
1	NAVM	$NW = TA - (CL + LTD)$
2	DVM	$P0 = \sum_{t=1}^{n} \dfrac{D1}{1 + ke}$
3	EVM	$P0 = \text{P'E ratio} \times \text{EPS}$

Source: Pike and Neale, 1996: 76

Where,

NAVM = Net Assets Value Model   CL   = Current liabilities

DVM = Dividend value model   LTD = Long Term Debt

EVM = Earning Valuation Model   PO   = Value of stock today

NW   = Net worth D_1 = Expected Divided in year 1

TA   = Total Assets   Ke   = Cost of Capital

P/E   = Price Earning Ratio   EPS = Earning Per share

2.1.6 Risk on Common Stock

Risk, in simple word, is an uncertainty. Risk and uncertainties are the facts of life so to the common stock holder. Technically, their meanings are different. Risk, simply in Investment, means a chance of happening some unfavorable event or danger of losing some value. Risk suggests that a decision maker knows the possible consequences of a decision and their relative livelihoods at the times he makes decision.

"The practice is to translate the uncertainty into a mathematical value which represents the uncertainty into a mathematical value which represent the best estimate of all uncertainty value but risk is treated differently. Although risk arises from uncertainty, its magnitude depends upon the degree of variability in uncertain cash flows; it is measured in terms of standard deviation. In project analysis the project risk indicated of the probability of return being less than the expected value higher the probability of such loss or less return, higher the project risk" (Pradhan, 1992: 244).

Basically risk is the possibility or chance of meeting danger or suffering loss. "There may be investors who behave somewhat differently. Theoretically, we expect three distinct behaviors of investors: (I) to bear more risk (ii) to avoid risk and (iii) to be indifferent to risk. A particular behavior depends upon whether the utility of wealth to an individual investor increased, decreased or remains unchanged as wealth increase. In reality, rational investors do not assume more and more risk just for the sake of increasing little more wealth as the size of their wealth increased. The following figure illustrated utility functions for three types of behaviors" (Pradhan, 1992: 262).

Figure 2.1
Risk Function

Risk Function

"Some of sources of uncertainty that contribute to risk of investment are cited below" (Franus; 1997:3).

Interest Rate Risk

Interest rate risk is potential variability of return caused by changed in the market interest rate. If market interest rates rise, then investment's values and market price will fall and vice versa. The variability of return that results is interest rate risk. This interest rate risk affects the price of bond and stock etc.

Purchasing Power Risk

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

Bull-Bear Market Risk

Bull bear risk arise from the variability in market return resulting from alternating bull and bear market forces. When a security index arises fairly consistently from a low point, called a though, for a period of time, this upward trend is called a bull market. The bull market ends when the market Index reached a peak and starts a downward trend. The period during which the market declined to the next through is called a bear market.

Management Risk

Though many top executives earn princely salaries, occupy luxuries offices and wield enormous power within their organization, they are mortal a capable of making a mistake or a poor decision. Furthermore errors made by business managers can harm those who invested in their firm forecasting management errors is difficult work that may not be worth the effort and, as a result, impacts a needlessly skepticism with informed insight as they endeavor to analyze subjective management risks.

Default Risk

Default risk is that portion of an investments total risk that results from changed in the financial integrity of the investment.

Liquidity Risk

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

Call ability Risk

That portion of a securities total variability of return that derives from the possibility that the issue may be called is the call ability risk. Call ability risk commands a risk premium that comes in the form of a slightly higher that average rate of return. This additional return should increase as the risk that the issue will be called increases.

Convertibility Risk

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

Political Risk

Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the efforts of various groups to improve their relative positions increasing the variability of return from the affected assets.

Industry Risk

An industry may be viewed as a group of companies that complete with each other to market a homogeneous product. Industry risk is that portion of an investments total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and or quotas on the products produced by an industry, product or industry related taxes, industry wide labor union problems, environmental restrictions. Raw materials availability and similar factors interact and affect all the firms in an industry simultaneously.

2.1.7 Relationship between Risk and Return

The relationship between risk and return is described by investor perception about risk and their demand for compensation. Those investors who can tolerate higher level of risk should be regarded with higher level of return. This statement is supported by the most empirical studies of historical risk return relationship. No investors like to invest in risky security unless he is assured of adequate compensation for the assumption of risk. Therefore, it is the investors required risk premium that establishes a link between risk and return. In a market dominated by rational investors, higher risk will command higher premiums, the trade off between the two assumes a liners relationship between risk and risk premium.

"The observe different in both the levels and variability of the rates of return across securities are indicative of the underlying risk return relation in the market" (Lorie, Dodd and Kempto, 1983:3).

Generally, there is a positive relationship between rate of return and risk. It means an investor can usually attain more return by selecting dominant assets that involve more risk. While it is not always true that a riskier asset will pay. A higher average rate of return, it is usually. The reason is that investors are risk averse. As a result, high risk assets most offer investors high return to induce them to make this riskier investment. Naturally, investors are likely to prefer more return and less risk. It means investors will not choose an investment that guarantee less return when investment promising higher return in the same level of risk class is readily available.

Risk and Return relationship can be shown by following:

Figure: 2.2

Risk and Return Relationship

2.1.8 Statistical Measure of Risk

The parameter of return distribution is a measure of dispersion of variability around expected return. The basic and conventional measure of dispersion is the standard deviation. For normally distributed returns, the mean and the variance of the distribution well describe the investment performance and support in right way valuing risky investment.

"The measurement of risk has always been a subject for debate. This disagreement stamps primarily from the various was investors perceive risk" (Chency and Moses, 1992:40).

The standard deviation can be expressed mathematically as :

$$\exists(R) = \sqrt{\sum_{A X l}^{N} Pi \bullet Ri \ Z \overline{Ri}'^{\,2}}$$

Where,

$\exists$ = standard deviation of the distribution

Ri = Rate of Return on I stock

RI =Expected rate of return of I stock Pi = Probability of I stock

A return distribution standard deviations turns out to be rather versatile risk measure. It can serve a san absolute measure of return variability the higher the standard deviation can sometimes be misleading in comparing   the risk or uncertainty surrounding alternatives. However, to adjust for the size or scale problem the standard deviation can be divided by the expected return to compute the coefficient of variation.

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

Where,

$\exists$ = Standard Deviation

R = Expected rate of return

"If the rate of return should increase as the risk increases, the C.V provided a quick summary of the relative trade off between expected return and risk" (Chency and Moses, 1992:41).

Thus, the coefficient of variation is a measure of relative dispersion measure of risk "per unit of expected return. The larger the CV, the larger the relative risk of the investment, coefficient of variation is the ratio of the standard deviation of a distribution to the mean of that distribution which is the measure of relative risk " (Van Horne and Wach Owicz, 1996:94).

2.1.9   Portfolio

Simply, a portfolio is a combined of investment assets. The portfolio is the holding of securities and investment in financial assets i.e. bond, stock etc. Portfolio management is related to the efficient portfolio investment in financial assets. The portfolio may contain one security, but in general, it will contain several securities. Portfolio investment in two different assets can reduce risk than the investment in single assets.

"The expected return of a portfolio depends on the expected return of security and amounts invested in each security in the portfolio" (Bhalla, 2000:427).

Objectives of Portfolio
Primary Objectives
- To maximize return
- To minimize risk

Secondary Objectives
- Regular return
- Stable income
- Appreciation of Capital
- Ever liquidity
- Easy marketability
- Tax benefit

"Portfolio theory shows how an investor can reach his optimal portfolio position, originally proposed by Hary M. Markowitz is based on the assumption that the utility of the investor is a function of two fact ors mean return and variance of its square root, the standard deviation of return. Hence it is also refereed as the mean variance portfolio theory or two parameter portfolio theory" (Chandra, 1996: 101).

2.1.9.1 Portfolio Return

The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The relative market values of the securities in the portfolio are used as weights. The weights are equal security (the weight must sum to 100%). In symbol, the general rule for calculating the expected return on a portfolio consisting N securities is:

$$\overline{RP} = \sum_{t=1}^{N} Wt \, Rt$$

Where,

$\overline{RP}$ = The expected return of the portfolio

Rt = The expect return of security

Wt = The proportion or weight of two funds invested in security.

N = Total no of different securities in the portfolio.

2.1.9.2 Portfolio Risk

The degree to which the assets return more together is measured by the covariance or correlation coefficient. The correlation however has no effect on the portfolio expected return. Correlation between security returns complicated the calculation of portfolio standard deviation by forcing to calculate the covariance between return for every possible pair wise combination of securities in the portfolio.

The portfolio standard deviation can be calculated mathematically as follows.

$$\dagger P \, X \sqrt{\sum_{t=1}^{N} \sum_{j=1}^{N} Wi \, wj \, CoVij}$$

Where,

N = total no. of different securities in the portfolio

Wi = Proportion or total fund invested in securities I

Wj = Proportion or total fund invested in securities j

Covij = Covariance between possible return for securities I and j

2.1.9.3 Systematic and Unsystematic Risk

Systematic risk has its own source factors that affect all marketable assets and thus cannot be diversified away. The sources of systematic risk are market pervasive. The measure of systematic risk permits an investor to evaluate an assets required rate of return relative to the systematic risk of the stock. Unsystematic risk can be reduced through diversification. The relationship among total risk, systematic risk and unsystematic risk are shown below.

Total risk= Systematic risk+ unsystematic risk

Or, ∃j = (∃j) | (Pjm) + (∃j) (1-Pjm)

or, ∃ = B² | Var (rn) + var (e)

In this equation pjm is the correlation coefficient between the return of given stock (j) and the return on market portfolio.

The beta coefficient is an index of systematic risk. Beta can be used for a ranking of the systematic risk of assets. An asset with B=1 is moderate asset because market portfolio and assets return is equal. An asset with BΨ1 is an aggressive asset because it is more volatile than the market portfolio if an asset has a BΦ1, the asset is defensive assets and the response of the asset will be less than of the market.

Figure 2.3

Relationship between S.D of Portfolio and Number of

Securities in Portfolio

"Systematic risk refers to that portion of total variability in return caused by factor affecting the price of all securities. Economic, political and sociological changes are sources of systematic risk. Their effect is to cause prices of nearly all individual common stocks and or all individual bonds to move together in the same manner" (Fisher and Jorden, 2002:70).

"The uncertainly surrounding the ability of the issuer to make payments on securities seems from two sources. (1) The operating environment (2) The financing of the firm. These risks are referred to as business risk and financial risk, respectively. They are strictly a functions of the operating conditions of the firm and the way in which it choose to finance its operations our intention here will be directed to the broad aspect and implications of Business and financial risk" (Fisher and Ronaid, 2002: 74).

2.1.10 Capital Assets Pricing Model (CAPM)

This model was developed by William Sharpe and John Linther in the 1960's and it has important implications for finance ever since. While other model also attempt to capture market behavior, the capital assets pricing model is simple in concept and has real world applicability.

"CAPM is a model that describes the relationship between risk and expected return. In this model a security expected return is the risk free or return plus a premium base on the systematic risk of the security".

CAPM is

$$Kj = Rf + (Rm - Rf)\ \beta j$$

Where,

Kj = the required rate of return for stockj

Rf = the risk free rate

Rm = the expected return for the market portfolio

βj = The beta coefficient for stock j

Here, "beta (β) is an index of systematic risk. It measures the sensitivity of a stock's returns to change in return on the market portfolio. The beta of a portfolio is simply a weighted average of the individual stock betas in the portfolio" (Van Horne, 1996: 101).

"The key assumptions of CAPM thus presented may be summarized as follows

) No transaction costs, taxes or indivisibilities.

) All market participants (firm and investors) are automatic competitors

) Single investment period, uncertain world.

Investor make investment decision on the basis of portfolio expected return and standard deviation of return.

Expectations are homogeneous. A risk free asset exists, available to all borrowing and lending" (Jacob and Pehit, 1984: 321).

"The CAPM is represented mathematically the formula below

$$E\ (j) = Rf + [Rm - Rf)\ \beta j$$

βj is the independent variable represents the systematic risk of the jth assets that determines the dependent variable E (rj) the expected rate of return for the jth assets. The CAPM intercepts the vertical axis at the risk less rate Rf and the quantity E (rm- rf) is the

slope of the CAPM. The risk less interest rate Rf is the appropriate rate of return for assets with zero risk in the CAPM " (Francis, 1997:101).

The graphical version of CAPM is called the security market line, which shows the relation between beta and required rate of return. The security market line clearly, shows that return is the increasing function, in fact a linearly increasing function of risk. Furthermore, it is only market risk that affects return. The investor receives no added return for bearing diversifiable risk. Stocks that are overpriced lie below the SML stocks that are under priced be above the SML. The diagramed 2.4 shows the security market line overpriced and under priced stocks.

Figure 2.4

The capital Assets Pricing Model

(*Source: Francis; 1997: 276*)

A vertical line in the figure 2.4 shows a risk class for systematic risk. The CAPM relates an expected return to each of the systematic risk. These expected returns can be interpreted as the appropriate discount rates, as the cost of capital, or as equilibrium rate of return that investors expected for that amount of systematic risk. In the figure, U and O are not in equilibrium on the CAPM. Assets U are undervalued and therefore desirable to own the assets. The price of U will rise in the market as more investors purchase it. When price goes up of assets U its return falls. When U's return falls to the return consistent with its betas on the SML, equilibrium is attained. The asset is overvalued. Investors will attempt to sell O, and therefore puts the down ward pressure on O' s price. When the return on assets O increase to the rate that is consistent with the beta risk level given by the SML, equilibrium will be achieved and down ward price pressure will lease.

Hence, the CAPM or SML is relationship in which the expected rate of return of the individual assets is a function of that asset is a linear function of that assets systematic risk as represented by beta (B), symbolically. According to Sharpe and Litner (CAPM)

study: the greater the beta of a security the greater the risk and the greater the expected return required the lower the beta, the lower will be the risk.

2.1.11 Construct the optimal Portfolio

The desirability of any security is directly related to it's excess return to beta ratio (Ri - Rf)/Bj where Ri is the expected return on security i, RF is the return on a riskless assets, and Bj is the expected change in the rate of return on security; associated with a 1 percent change in the market return. If securities are ranked by excess return to beta (from highest to lowest) the ranking represent the desirability of any security's inclusion in a portfolio. The number of securities selected depends on a unique cut off rate such that all securities with higher ratio (Ri - Rf) will be included and all securities with lower rates excluded.

To determine which securities are included in the optimum portfolio, the following step are necessary.

i.   Calculate the "excess return to beta" ratio for each security under review and from highest to lowest.

ii. The optimum portfolio consists of investing in all securities for which (Ri - Rf) /Bj is greater than a particular cut off point C* (Bhalla, 2004).

2.2 Reviews from Journal and Articles

2.2.1 Foreign Context

A financial economics is defined by Smith (1996) as "The Application of Economic Theory to financial markets."It is a large body of theory including such as well known models as "Modern portfolio Theory" of Markowitz (1952). The capital assets pricing model of Sharpe (1964), The efficient market Hypothesis of Samuelsson (1965) and fama (1965), and the option pricing model of black and scholes (1973). Although these model are all included in institute of faculty education Ltd (1996), their acceptance or use is controversial" (Bhusc, 1997: 421).

"Investor's whether they are individual or institutions such as pension funds mutual funds endowments hold portfolio that is they hold a collection of different securities. Much of the innovation in investment research over the past 40 years has been the development of

a theory of portfolio management and this module is principally an introduction to these new methods. It will answer the basic question what rate of return will investors demand to hold a risky security in their portfolio? (Gowtzmann, 1999: 26)

"Returns management appears predictable to an econometrician appear to deviate from the CAPM, but investor can neither perceive no exploit this predictability. Return may also appear excessively volatile even though prices react efficiently to cash flow news" (The Journal of Finance, 2002: 1113).

Return is the main objective of investment and any investors want to make more money in the future. The main measurement toll of benefit which is received from a security is the rate of return.

"The investor return is a measure of growth in wealth resulting from that investment. This growth measure is expressed in percentage forms to make it comparable across large and small investors. Stock return may be riskier or more volatile, but this concept is a difficult one to express simply. To do so, we borrow a concept from statistics, called standard deviation. It as single measure, allowing us to quantity asset return by risk, and it also provides the basis for investor decision about portfolio choice" (Goetz man, 1999:27).

Among all securities, common stock is the riskier security. Table 2.2 makers it clearer. Table 2.2 monthly market return from 1st Jan 1990 to 31st March 2001.

Table 2.2

Empirical Measures of Risk and Return in the

South African Markets

	Equity	**Gilt's**	**Cash**
Mean Monthly return	1.57	0.71	0.83
Annualized Return	10.6	8.98	10.45
Variance	0.0038	0.0006	0.00001
Standard deviation	0.0614	0.0143	0.0044

"The different risk measure shows fairly consistent that equity investment was more risky over the period that Gilt investment, which in term was more risky than cash" (Bhusc, 2001:422).

Investors want to make more money in the future. The key measure of benefits derived from a security is the rate of return.
In the history, "1980's were one of the greatest decades for stock market. Whereas, 1930's was one of the worst decades for US stock investors. In the 1930's stock markets crashed all over the world.

US stock investors experienced a zero percent return for the eleven years period from 12/1929 to 12/ 1939" (Bhusc, 1997: 422*).

In year 2004 peter Byrne and Stephen Lee focused different tools and techniques such as mean variance model, mean absolute deviation approach. Lower partial movement and minimal model in their research and concluded that traditionally the measure of risk used in portfolio optimization models in the variance.   However alternative measure of risk have many theoretical and practical advantages and it is peculiar therefore that they are not used more frequently. This may be because of difficulty deciding which measure risk is best and any attempt to compare different risk measures may be a futile exercise until a common risk return can be identifies. To over come this, another approach in considered, comparing the portfolio holdings produced by different risk measures, rather than the risk return trade off. In this way we can see whether the risk measures used produce asset allocations that are essentially the same or very different. The results indicate that the portfolio compositions produced by different risk measures vary quite markedly from measures to measure. These findings have a practical consequence for the investor or fund manager because they suggest that the choice of model depends very much on the individual attitude to risk rather than any theoretical and practical advantage of one model over another.

The article published in journal of finance on the title of "Expected return realized return and Asset pricing tests" is also relevant in our research. In this paper the writer mentioned that "Almost all of the testing I am aware of involves using realized returns as proxy for expected returns relies on a belief that information surprise trend to cancel out over the period of a study and realized returns are therefore an unbiased estimate of expected returns. However, I believe that here is sample evidence that is belief is misplaced. There are periods longer than 10 years during which stock market realized returns are on average less then the risk free rate (1973 to 1984). There are periods longer than 50 years in which risky long term bonds on average under perform the risk free rate (1927 to 1981). Having risky assets with an expected return above the risk fewer rates is an extremely weak condition for realized returns to be an appropriate proxy for expected returns and 10 and 50 years is an awfully long time for such a week condition not to be satisfied.

In the recent past United States has a stock market return of higher than 30 percent per year while. Asian markets have had negative return" (Elton, 1999).

2.2.2 Nepalese Context

Shrestha, (1998) in the title of "Shareholders Democracy and Annual General Meeting Feedback" Prefer to consider this book as an assemblage of opinions which he had express in different occasions of various annual general meeting. The contents of the book have been dividend in to two parts. The primary part included views on the rights of the shareholders regarding how they can exercise them in democratic perspective. Where as the next part consists of feedbacks and the issues rose by shareholder at different annual general meeting of the public limited companies and financial institutions.

In many cases the existing authoritarian mentality of management seems to have not considered the shareholders in deciding the managerial plans and policies. Top level decision often by pass the interest of shareholders.

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As the management lacks serious concern about the protection of shareholders right and expectations. The annual general meeting has become a plate form for shareholder to express their opinions and grievance in front of the management and board of directors. Many general feedbacks reveal no serious response to the feelings of shareholders. Thus, it reflects unwillingness of the management and board of directors to change their traditionally held activities towards shareholders.

Shrestha has expressed his deep concern to the government for not taking any initiative in formulating the separate act. Which protect the shareholders right despite the increase in population of shareholder in Nepal and questioned the need of separate act regarding the protection of shareholders right?

Shrestha has further quoted as writing company and other relating acts relating to financial and industrial sector have provisioned rights of the shareholders as:

- Voting right
- Participation in general meeting
- Right of getting information
- Electing as a board of director
- Participation in the profit and loss of the company.
- Transferring share
- Proxy representation
- Amend the internal by laws
- Enter into merger.
- Change amount of authorized capital.
- Authorized the sale of assets

2.3 Reviews from Thesis

As already stated, there are few study performed in this study in the specific topic. However, some studies have been conducted as a thesis for the partial fulfillment of Master degree in Tribhuvan University, which are to some extent related to the proposed study. While reviewing the thesis some thesis, has been reviewed which is relevant to our study?

Joshi, (2002) has studied on, "Problems in choice of optimum portfolio of stock in Nepal stock Exchange". This study s based on 21 listed "A" graded companies data are used to analyze.

The main objectives of the study is to find out and analyze the major problems of investors facing regarding selection of most profitable stocks in NEPSE and other objective are:

) To analyze the trend of NEPSE.

) To analyze the problems and find out some resolutions for the problems.

) To suggest the measure of the improvement of the stock market as well as for better meet of invest.

) To try to found out the best portfolio of NEPSE to invest

The study is mainly based on secondary data gathered from NEPSE, SEBON and different institution, where descriptive is made with the help of information collected by questionnaire and meting with concerned peoples and various newspapers, articles etc.

This is an empirical study on investor's problem regarding selection of most portfolio stock of NEPSE. Therefore to conduct the study analytical and descriptive research has been made from readily available data of stock market. Some information is gathered with the help of questionnaire and meeting with people. Various financial tools are used to fund out the best stock available in the NEPSE such as standard deviations, holding period return, coefficient of variation portfolio return, portfolio standard deviation and others.

Finding and Conclusions

With the help of coefficient of variation more variable stocks are ignored where as the only lesser variable stock are used to construct portfolio. It returns more the only yardstick to make investment decision than CIT be the better are which gives the optimum of 37% monthly holding period return.

Per standard deviation NHDFC seems better though its HPR comes to negative. So to make decision easier negative return stocks were ignored and picked three least standard deviation stock to construct portfolio, due to high fluctuating almost stocks seems riskier so to invest in single stock means to welcome the risk. So to diversify the risk investment possibility more searched in different efficient lets and the analysis and calculation concluded the stock of CIT and PFC be the best when the proportion on investment of PFC and CIT is 55% and 45% respectively.

Satyal, (2004), has studied on "Risk and Return Analysis Listed Company". The study is based on eight companies listed in NEPSE.

-) The major objectives of the study are as follows:
-) To study risk and HPR associated with investment.
-) To examine the movement of MPS.
-) To analyze the relation between risk and return of individual stock with that of market.
-) To provide suggestions on the basis of findings.

The Study is based on historical data. It covers five years data from FY 2002/03 to FY 2006/07. The collected data is analyzed with appropriate financial and statistical tools. Randomly selected 8 companies, two from banking, two from insurance, two from finance and one each from trading and manufacturing sectors.

Finding and Conclusions

Among selected companies HBL has the maximum market capitalization and NEFINCO has the minimum market capitalization. Most of companies share price is moving in positive trend; however the price of NIC and BBC is in decreasing trend.

The Return of NLL is maximum 63.2% but its risk is also maximum 95%. Risk is minimum in NFC i.e. 16.7%. The best way of analysis is C.V. which is the unitary risk measure. As the C.V. HBL is 0.55, the stock of HBL is best for those, who are risk averters. CV = 0.55 means for obtaining the one more unit of return an investor has to bear the risk of 0.55 unit.

As there is comparison of C.V. banking sector has minimum of 0.66 and that of other sector has 4.32. So it is better invest on share of banking sector for the risk averters.

In industry wise, market capitalization, banking sector has high capitalization it means there is higher trading and turnover on the shares of banking sectors.

Among the selected sectors, Trading Company is least aggressive or defensive. Trading company is overpriced and all other are under priced. It is better for the investors to purchase the under priced shares.

The expected return on trading sector is maximum and the risk of banking sector in minimum.

Khadka (2005), has studied on, "Analysis of Risk and Return, on Selected Nepalese commercial banks listed in NEPSE" with special reference to seven commercial banks. The major objectives of the study are as follows:

⌡ To measure systematic and unsystematic risk of the commercial banks.

⌡ To determine whether the share of commercial banks in Nepal are overpriced/ under priced by analyzing risk and return characteristics of individual shares.

⌡ To provide suggestions for improvement on the basis of findings.

For data analysis purpose, exploratory and comparative research design has been used to this study. With the help of the research design, the study evaluates the risk and return of the seven selected commercial banks of Nepal.

Findings and Conclusion

Though Nepal Bangladesh bank, which is hard hit by the events (Return - 0.8809) the ranking of the bank is placed as the lowest return earner among them. All the shares under renew generated higher rate of return than the market portfolio except Nabil bank Ltd.

Pandey (2008), in his thesis entitled "A Study on risk and return analysis of common stock investment" concluded that without proper analysis of individual security, Industry and over all market, it is almost all impossible to beat the stock market. The main objective of the study is to analyze the risk and return of common stock Investment, with special reference to six finance companies in Nepal. He has taken seven year data for the analysis. He says that investor's attitude, perception and risk handling capacity also plays a vital role in rational investment decision also added that stock market is undoubtedly risk in short run and it is necessary to prepare the investors for it. According to the coefficient of variation (C.V), finance and insurance sector is the best one for investment where as from the view point of expected return, banking sector is the best sector for investment. Among the selected finance companies, Kathmandu finance company is best for investment due to high expected return with low C.V. and HISEF finance company is most risky.

Tuladhar (2009), has prepared a research on "A Study on Risk and Return Analysis of Common Stock" which is also relevant to this study. The main objective of her study is to analyze risk and return of the common stock and their portfolio as well as to access the past and present state of investment of common stock. Tuladhar has included 11 companies in her study out of 115 listed companies in NEPSE. She has selected 2 companies from banking sector, 2 from Manufacturing and processing, 2 companies from hotels, 2 from trading, 2 from insurance and finance, and 1 from others. Tuladhar has found that return of Bangladesh bank is highest where as that of Bishal Bazar Company is lowest. Return in high in the beginning years but it is declining in recent years. Nepal lever limited is most risky and Bishal Bazaar Company is least risky. Nepal Bangladesh Bank is best for investment as it has low CV where as Yak and yeti Hotel ltd. has highest CV. The ranking of selected companies is based on the sector has the lowest CV and Hotel sector is highest CV. In her findings, among 11 selected companies the expected return of bank sector is highest and trading sector is lowest.

2.4 Research Gap

There is lot of research work done by different Researcher on the topic of "Risk and Return analysis of Common Stock Investment". Some researcher a used very few sample

size which may not cover the whole population and some researcher used nominal fiscal period which may not provide the whole scenario of market. Some researcher use only statistical tools and technique to determine the risk and return of the assets or securities of firm. This Study work on the topic of "Risk and Return Analysis of Common Stock Investment of Finance Company in Nepal" has taken the seven year data from Fiscal year 2003/04 to Fiscal year 2009/10 and ten finance companies are taken as sample so that this study is differ from other research work. This study is also based on financial as well as statistical tool and techniques to provide the meaningful analysis and interpretation with taken as similar rank finance company to identify the level of risk and return from investment on common stock of sampled 10 finance company, so this research work is differ then other past research work on similar topic.

CHAPTER- III
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology refers to the overall research process, which a researcher conducts during his/her study. This chapter includes the research design, source of data, data gathering procedure and instrument, the statistical population and sample and various tools used in this study. The main objective of this research is to analyze risk and return of finance companies in Nepalese context.

3.2 Research Design

This research is based on historical design, so simply it is a historical research. It covers the data from the fiscal year (2002/03) to (2009/10). The collected data is analyzed with appropriate financial and statistical tools and interpreted in simple way. This research is made more analytical using different analytical tools.

3.3 Source of Information

The main sources of the data are the reports of related finance companies and NEPSE. The other source of information is reports of security board of Nepal. (SEBON), economic bulletins of Nepal Raystra Bank. Besides these, some well known information magazines and journals such as journal of finance, journal of financial economics are also studied. Thesis related to our study is also taken into consideration.

3.4 Data Collection Procedure

Almost necessary data for the research is collected from secondary sources. However, opinion has also been taken with individual investors, related organization officials, SEBO/N and NEPSE staffs and other related personalities. Data related to market price of shares, Market capitalization, movement of NEPSE index etc, is taken from the trading report published by NEPSE. Other data of the related companies are taken from the companies as well as their websites.

3.5 Population and Sample

The main source of information is NEPSE. NEPSE had listed 145 companies in 2009/10 including 53 finance companies. Among 53 finance companies listed in NEPSE, 10 finance companies have been taken as samples in this research study. It is assumed that these 10 finance companies represented risk and return of the whole finance companies, which are as follows:

1. Peoples Finance Limited
2. National Finance Co. Ltd.
3. Nepal Share Market and Finance Company Ltd.
4. Narayani Finance Limited
5. Nepal Housing and Merchant Finance Ltd.
6. Samjhana Finance Company Limited
7. Annapurna finance Company Limited
8. Kathmandu Finance Limited
9. Ace Finance Company Limited
10. Citizen Investment Trust

3.6 Method of Data Analysis

In this study, there are two tools are used to purpose of data analysis which is financial and statistical tools are used, which are as follows.

3.6.1 Financial Tools

The financial tools are as follow:

Market Price of Stock (MPS)

In this study, market price is one of the major data. In the Trading Report Published by NEPSE. In this study we have taken closing price of the stock as market price because it is difficult to get all the required data accurately. The closing price is used as market price of stock that has a specific time of one year.

Dividend (D)

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The divided is depends on the company's divided policy. Divided is the portion of earning which company pays to its shareholders. It is usually distributed from the retained earning. It is useful in the computation of the realized rate of return. Symbolically, it can be expressed as:

$$\text{Divided per share (DPS)} = \frac{\text{Total Amount of Divided Paid}}{\text{No. of Common Share out standing}}$$

Return on Common Stock (R)

Return is the income received on as investment plus any change in market price, usually expressed as a percent of the beginning market price of the investment. The single period rate of return can be calculated by using the following formula.

$$\text{Single period rate of return, R} = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

Where,

R = Expected rate of return or actual rate of return on common stock at current year.

P_t = Price at the end of the year t.

P_{t-1} = Price at the Beginning of the year t-1

D_t = Divided at the end of time t.

Expected Rate of Return E(R)

One of the main objectives of study is to determine the expected rate of return on common stock investment. Generally, this rate is obtained by arithmetic mean of the past year return. The Expected rate of return is the arithmetic mean of the past years return. The expected rate of return can be calculated by using following formula.

If the probability distribution is given:

Expected rate of return = E(Rj) = pj $|$ Rj

Where,

E(Rj) = Expected rate of return

Pj = Probability distribution of security j

Rj = Returns on stock

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Required Rate of Return

The required rate of return is a function of the real rate of return and Risk. It is the minimum rate of return an investor will accept. The required rate of return for an asset can be estimated using the equation for the security market like suggested by the capital asset pricing model.

Required rate of return $(R_j) = R_f + (R_m - R_f) b_j$

Where,

R_j = required rate of return

R_f = Risk free rate

R_m = the required rate of return on the market

b_j = the index of no diversifiable risk of assets portfolio.

Standard Deviation (S.D) of the Stock Return

Standard deviation measure the dispersion from the mean. In other words, it is the statistical measure of the variability of the distribution of return around its mean. It is the square root of the variance and measures the risk on the stock investment.

Symbolically,

$$\dagger j \, X \sqrt{\frac{\sum_{jXl}^{n} (Rj \, Z \bar{R}j)^2}{n \, Z1}}$$

Where,

$\exists_j$ = Standard deviation of return of stock j during the period n.

Variance of the Stock Return

The variance is a measure of the dispersion from the average value. The variance also shows the total risk of the investment. Slimily, it is the square of the standard deviation.

Symbolically,

$$\dagger j \, X \frac{\sum_{jXl}^{n} (Rj \, Z \bar{R}j)^2}{n \, Z1}$$

$\exists^2{}_j$ = Variance of the return of the stock j.

Covariance

Covariance is a statistical measure of relationship between two random variables. It measure how two random variables such as returns on securities (R_j) and market return (R_m) are related to each other. A positive value for covariance indicates that the securities returns tend to remove in the same direction with other. A negative covariance indicates a tendency for the returns to off set one other. A relatively small or zero value for the covariance indicates that these are a little or no relationship between the returns for the two securities. It is calculated as

$$\text{Covariance } (R_j\ R_m) = \frac{\sum_{jX1}^{n} (Rj\ Z\ \overline{R}j)\ \int Rm\ Z\ \overline{Rm}]}{n\ Z1}$$

Coefficient of Variation (C.V)

In comparing the risk of assets with different expected returns, the use of the standard deviation can easily be improved upon by converting the standard into a coefficient of variation. The coefficient of variation, C.V, is calculated by dividing the standard deviation, $\exists_j$ for assets by its expected return, R_j.

Symbolically

$$\text{Coefficient of Variation (CV)} = \frac{\dagger}{R_j}$$

Thus, the coefficient of variation is a measure of relative dispersion (Risk) measure of "per unit of expected return". The larger C.V. represents the larger the relative risk of the investment and vice-versa.

Beta Coefficient (S)

Beta is an index of systematic risk. It measures the sensitivity of a stock's return on the market portfolio.

Symbolically,

$$\beta_j \; X \frac{Cov\,(R_j,\,R_m)}{\sigma^2{}_m}$$

Where,

  β_j = Beta coefficient of stock j

  $Cov\,(R_j, R_m)$ = Covariance between stock j and market return.

  $\sigma^2 m$ = Variance of market return.

The beta coefficient is a measure of non diversifying risk. It assumes that total market risk is equal to one. An asset of portfolio of with a beta greater than 1 is considered to be aggressive, and an assets or portfolio with a beta less than 1 is considered to be defensive. An investor can use the beta measure to assess the risk level of an assets or portfolio.

Portfolio Risk

In order to calculate the risk of a portfolio, consideration must be given not only to the individual assets in the portfolio and their relative weights but also to the extent to which the asset's returns move together. We measure the risk of an individual asset by the variance of returns or its square root, the standard deviation.

The degree to which the asset's return move together is measured by the covariance or correlation coefficient. By combining the measures of individual assets risk, relative asset weights, and the co-movement of assets return, the risk of the portfolio can be estimated. Portfolio risk can be calculated by using the following formula:

Symbolically,

$$\sigma_p = \sqrt{WA^2\sigma A^2 + WB^2\sigma B^2 + 2WAWB\,Cov\,AB}$$

Where,

  σ_p = Portfolio risk or portfolio standard deviation

  WA = Proportion of security A.

  WB = Proportion of security B

  Cov AB = Covariance of return of the slurring A and B

Portfolio Return

Portfolio is the combination of two or more than two assets. Portfolio return is simply weighted average of the returns on the individual stocks in the portfolio. Symbolically, it is represented as:

$$R_P = W_A R_A + W_B R_B + ... + W_N R_N$$

Where,

    R_p = Expected return on portfolio

    R_A = Expected return on stock A

    R_B = Expected Return on stock B

    W_A-W_N = Weight of Investment on assets.

Portfolio Beta

The portfolio beta is the weighted average of the individual beta. The portfolio beta is calculated by using the following formula;

$$\text{Portfolio Beta } (\beta_P) = \sum_{i=1}^{n} W_j b_j$$

Where,

    W_j = Proportion of the portfolio

    B_j = beat coefficient of assets

    B_P = Portfolio beta coefficient

Risk Minimizing Portfolio

Risk of the portfolio can be minimizing through the construction of the optimum portfolio optimum portfolio gives the idea of the investment of different assets getting Maximum return with minimum risk.

$$W_A = \frac{\dagger^2 B \ Z \ Cov \ (RA.RB)}{\dagger^2 A \ \Gamma \dagger^2 B \ Z \ 2Cov \ (RA \ RB)}$$

    W_B = 1-W_A

Where,

    W_A = Weight of Proportion of Stock A that minimize the portfolio risk

$$W_A + W_B = 1$$

Sharpe Single Index Model

The construction of an optimal portfolio is simplified if a single, number measures the desirability of including the stock in the optimal portfolio. If we accept the single index model (Treynor's), such a number exists. In this case, the desirability of any stock is directly related to its excess return to beta ratio. (Jordan and Fisher, 2000: 598).

$$\frac{R_i - R_f}{B_i}$$

Where,

R_i = Expected return on Stock

R_f = Return on risk less asset

B_i = Expected change in the return of return on stock associated with a 1 percent change in the market return or systematic risk.

If stock ranked by excess return to beta (from highest to lowest), the ranking represents the desirability of any stock's inclusion in a portfolio.

Correlation (P_{ij})

In order to diversify risk to create an efficient portfolio, which is one that allows its owner to achieve the maximum return for a given level of risk or to minimize risk for a given level of return, the investor must under stand the concept of correlation. Correlation is a statistical measure of the relationship, if any, between series of numbers representing any things from results to test data. If two series move together they are positively correlated, if the series are more in opposite direction, they are negatively correlated. The statistical measure if correlation, the correlation coefficient, has a range of +1 for perfectly positively correlated series and -1 for perfectly negatively correlated series. Symbolically,

$$p_j = \frac{Cov\ (R_i\ R_j)}{\dagger_i\ \dagger_j}$$

Where,

P_{ij} = Correlation between stock I and stock j.

Cov (R_i, R_j) = Covariance between stock I and stock j.

$\exists_i$ = Standard deviation of stock i.

$\exists_j$ = Standard deviation of stock j.

Optimal Weight

For the portfolio of j stock, cut off rate is calculated by using following formula.

$$Cj \ X \ \frac{\exists^2 m \ \sum\limits_{jX1}^{j} (Ri \ Z \ Rf \ ) \ Bj}{1 \ \Gamma \ \exists^2 m \ \sum\limits_{jXi}^{j} \frac{\beta^2}{\exists^2 ei}}$$

Where,

Cj = Cutoff rate of stock j.

$\exists^2 m$ = Variance of market index.

$\exists^2 ei$ = Stock unsystematic risk.

Rj = Return on Security j.

Rf = Return of risk less assets.

Bj = Stock Systematic risk.

The optimal portfolio consists of investing in all securities for which, (Ri - Rf) Bj is greater than a particular cutoff point C*. Once we know which securities are to be included in the optimum portfolio, we must calculate the present invested in each security. The percentage invested in each security. The percentage invested in each security is calculated by using the following formula.

$$Zj \ X \frac{\beta j}{\exists^2 ei} \ \frac{Rj \ Z \ Rf}{Bj} \ Z \ C*$$

Where,

Zj = Optimal weight of security j.   C* = Cutoff rate

Bj = Systematic risk of security j.

$\exists^2 ei$ = Unsystematic risk of security j.

Rj = Return on Security j.

Rf = Return on risk less assets.

3.6.2 Statistical Tools

While analyzing data, following statistical tools are used:

Tools for Calculating Index

Index numbers are statistical devices designed to measure the relative change in the level of phenomenon with respect to time, geographical location or other characteristics. In other works, index number one specialized types of rates, ratios, percentages which give the general level of magnitude of a group of distinct but related variables in two or more situations *(Gupta; 2006: 650).*

$$\text{Index} = \frac{\text{Market capitalization (Rs in million of } T \text{ year}}{Base\ market\ capitalization\ (Rs\ in\ million)\ of\ T\ \ year}$$

Tools for Testing Hypothesis

Population is the all the listed common stock in NEPSE that makes market portfolio. Sample is all listed common stock of finance companies. As the test is test of significance for a single mean' the test statistics (t) is:

$$t = \frac{\overline{X}\ Z \sim}{\dfrac{S}{\sqrt{n}}}$$

Where,

      t = test (t) statistics

      $\overline{X}$ = Arithmetic mean of sample statistic's

      $\Uparrow$ = Arithmetic mean of population

      s = Estimated standard deviation of population.

      $S = \sqrt{\dfrac{\phi(X\ Z\overline{X})}{n\ Z1}}$ if the deviation is taken from actual mean.

Again,

      If the test is 'test of significance of difference of mean, the test statistics t is:

$$t = \frac{\overline{X}_1 \, Z \, \overline{X}_2}{\sqrt{S^2 \, \dfrac{1}{n_1} \, \Gamma \, \dfrac{1}{n_2}}}$$

Where,

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

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

n_1 = first sample size

n_2 = second sample size

3.7 Method of Analysis and Presentation

Various applied methods of analysis are as simple as possible proper financial and statistical tools are used and result are presented in tables and also shown in diagram too. Detailed calculations, which cannot be shown in the main body part of the research report, are presented in Appendix tables at the end of the research report. Chart, diagram, and graphs have been used for making report simpler and easier to understand.

CHAPTER- IV
DATA PRESENTATION AND ANALYSIS

This chapter is the body of the research which includes the data presentation and analysis and interpretation. Market Price per Share (MPS) and dividend of each finance company, industry wise NEPSE index and market capitalization and market index are presented in details and their interpretation and analysis are also given with the help of figures and tables, results have been tried to make simple and easy to understand.

4.1 Risk and Return Analysis of Individual Finance Companies

There were one hundred thirty five companies were listed in NEPSE in the fiscal year 2009/10 including 53 finance companies. Among 53 listed finance companies, 10 companies are taken as sample in this research study which is as follows:

1. Peoples finance limited
2. National finance company limited
3. Nepal share market and finance company ltd.
4. Narayani finance limited
5. Nepal housing and merchant finance ltd.
6. Samjhana Finance Company Limited
7. Annapurna finance company limited
8. Kathmandu finance limited
9. Citizen investment trust

4.1.1Peoples Finance Limited (PEFL)

Peoples finance limited was established in 1993 under the company act 1964.

The main objective of the company is to collect deposit and to provide loans and advance other financial services under finance company act 1985.

Authorized capital, issues capital and paid up capital of PEFAL are Rs 40,000,000 Rs, 20,000,000 and Rs 20,000,000 respectively. Par Value per share is Rs 100. Listing date of PEFAL share on Nepal stock exchange is 1995.

Table 4.1

Realized Rate of Return, Expected Return and the S.D of Common Stock of PEFAL

Fiscal year	Year end Price (P)	Dividend (d`)	$R = \dfrac{Pt - Pt - 1 + Dt}{Pt - 1}$	$(R \, Z \, \overline{R})$	$(R \, Z \, \overline{R})^2$
2002/03	300	0	-	-	-
2003/04	230	0	-0.2333	-0.2753	0.0758
2004/05	130	0	-0.4348	-0.4768	0.2273
2005/06	90	30	-0.0770	-0.1190	0.0142
2006/07	104	30	0.4888	0.4468	0.1996
2007/08	100	20	0.1538	0.1118	0.0125
2008/09	137	10	0.47	0.4280	0.1832
2009/10	127	0	-0.0729	-0.1149	0.0132
Total			0.2946		0.7258

Source: Annual Report of SEBON

The above table 4.1 shows that the expected return, S.D and C.V of common stock of PEFAL. The total realized rate of return and expected return of PEFAL is 0.2946 and 0.042 respectively. Its S.D 0.3491, or 34.91% where as CV is 8.3132 which means that for earning one extra unit of return from the share of PEFAL investor have to bear 8.3132 unit of risk.(Appendix- I)

Figure 4.1

Annual Rate of Return of Common stock of PEFAL

The above figure 4.1 shows the positive as well as the negative value of the annual rate of return. The annual rate of return of common stock of PEFAL was positive I the FY year 2006/07 to 2008/09 and remaining year is negative. In the FY 2006/07 annual return was highest.

4.1.2 National Finance Company Limited (NAFAL)

National finance company limited was established in 1992 under the company Act, 1964 with an objective of mobilizing scattered savings through various schemes and deploy them in different sectors of the economy for the economic development of the country. The company commenced its operation on May 1993 in accordance with finance company Act, 1985. Besides accepting deposit and providing loans and advance, the company undertook the job of market making for listed corporate securities, issue management, underwriting and other capital market activities as a market maker till December 1996. But, in January 1997 the company changed its membership into securities dealer giving up the market function.

Authorized capital, issued capital and paid up capital of NAFAL limited are 600,000,000, 30,000,000 and 30,000,000 respectively. Par value per share is Rs 100. Listing the of national finance limited on stock exchange is 1993 A.D.

Table 4.2

Realized Rate of Return, Expected Return and Standard Deviation of Common Stock of NAFAL

Fiscal year	Year end Price (P)	Dividend (d`)	$R \times \dfrac{Pt - Pt-1 \Gamma Dt}{Pt-1}$	$(R Z \overline{R})$	$(R Z \overline{R})^2$
2002/03	470	30	-	-	-
2003/04	560	30	0.2553	0.1536	0.0235
2004/05	470	20	-0.1250	-0.2267	0.0513
2005/06	455	20	0.0106	-0.0911	0.0082
2006/07	360	21	-0.1626	-0.2643	0.0698
2007/08	295	10.53	-0.1513	-0.2530	0.0640
2008/09	263	10.53	-0.0727	-0.1744	0.0304
2009/10	460	55	0.9581	0.8564	0.7334
Total			0.7124		0.9806

Source: Annual Report of SEBON

The above table 4.2 shows that the expected return, standard deviation and C.V. of common stock of NAFAL.

The total realized rate of return and expected return of NAFAL is 0.7124 and 0.1017 respectively. Its standard deviation 0.4041 or 40.41% whereas CV is 3.97 which means that for earning one extra unit of return from the share of NAFAL,investor have to take 3.97 unit of risk(Appendix- II).

Figure 4.2

Annual Rate of Return of Common Stock NAFAL

The figure 4.2 shows the annual return on seven years starting from fiscal year 2002/03 to 2009/10. In the FY 2003/04 and 2009/10the annual rate of return was positive but the rest of the years the return was dissatisfactory. The annual return was highest in the FY 2009/10.

4.1.3   Nepal Share Market and Finance Company Limited (NSMFCL)

Nepal share market and finance company limited was established in 1993 under the company Act, 1964. The main objective of the company is to collect deposit and to provide loans and advances and other financial services under the finance company Act, 1985 and also to carry out capital market activities under the securities exchange Act 1983.The company is one of the mot active capital market intermediaries operating in the primary and secondary market since the inception of the Nepal stock exchange in January, 1994.

Authorized capital, issued capital and paid up capital of Nepal share market and finance company limited are Rs120, 000,000, Rs60, 000,000 and Rs 57941000 respectively. Par value per share is Rs100. Listing date of Nepal share market and finance limited on stock exchange is in 1994.

Table 4.3

Realized Rate of Return, Expected Return and the Standard Deviation of Common Stock of NSMFCL

Fiscal year	Year end Price (P)	Dividend (d`)	$R = \dfrac{Pt - Pt\text{-}1 + Dt}{Pt\text{-}1}$	$(R\,Z\,\overline{R})$	$(R\,Z\,\overline{R})^2$
2002/03	230	0	-	-	-
2003/04	180	0	-0.2174	-0.3924	0.1539
2004/05	159	0	-0.1167	-0.2917	0.0850
2005/06	125	0	-0.2138	-0.3888	0.1511
2006/07	103	0	-0.1760	-0.3510	0.1232
2007/08	120	20	0.3592	0.1842	0.03312
2008/09	145	21	0.3833	0.2083	0.0433
2009/10	300	20	1.2068	1.0318	1.0646
Total			1.2254		1.6550

Sources: Annual Report of SEBON

The above table 4.3 shows that the expected return, standard deviation and coefficient of variation of common stock of NSMFCL. The total realized rate of return and expected return of NSMFCL is 1.2254 and 0.1750 respectively. Its standard deviation (i.e. total risk) 0.5272 whereas CV is 3.0126 which means that for earning one extra unit of return from the share of NSMFCL, investors have to take 3.0126 unit of risk. (Appendix- III)

Figure 4.3

Annual Rate of Return of Common Stock NAFAL

From the figure 4.3 it is clear that the annual return of common stock of NSMFCL was negative in the fiscal year 2003/04 to 2006/07 and the rest of years return was positive. In the FY 2009/10 the rate of return was highest.

4.1.4 Narayani Finance Limited (NAFIL)

Narayani finance company was established in 1994 under the company act 1964. The main objectives of the company are to collect deposit in varied from and to provide advance and other financial services under financial company act 1985. The head office of the Narayani finance limited is situated in Chitwan district Narayani zone.

Authorized capital, issued capital and paid up capital of NAFIL are Rs 60,000,000 Rs 30,000,000 and Rs 25,153,800 respectively, par value per share is Rs 100. Listing date of NAFIL on stock exchange is 1997.

Table 4.4

Realized Rate of Return, Expected Return and the Standard Deviation of Common Stock of NAFIL

Fiscal year	Year end Price (P)	Dividend (d`)	$R = \dfrac{P_t - P_{t-1} + D_t}{P_t - 1}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2002/03	385	20	-	-	-
2003/04	218	15.79	-0.3928	-0.4589	0.2105
2004/05	240	20	0.1927	0.1267	0.0160
2005/06	260	20	0.1667	0.1007	0.0101
2006/07	220	20	-0.0769	-0.1429	0.0204
2007/08	260	20	0.2727	0.2067	0.0427
2008/09	235	20	-0.0192	-0.0852	0.0072
2009/10	275	35	0.3191	0.2531	0.0640
Total			0.4623		0.3709

Source: Annual Report of SEBON

The above table 4.4 shows that the expected return, standard deviation and coefficient of variation of common stock of NAFIL. The total realized rate of return and expected return of NAFIL is 0.4623 and 0.0660 respectively. Its standard deviation (I.e. total risk) 0.2495 whereas CV is 3.7816 which means that for earning one extra unit of return from the share of NAFIL Investors have to take 3.7816 unit of risk.(Appendix- IV)

Figure 4.4

Annual Rate of Return of Common Stock NAFIL

The figure 4.4 represents the annual return of common stock of NAFIL of different years. The annual return of common stock of NAFIL was negative in the fiscal year 2003/04, 2006/07, 2008/09. The annual return was maximum in the FY 2009/10.

4.1.5 Nepal Housing and Merchant Finance Limited (NHMFAL)

Nepal Housing and merchant finance limited was established in June 1994. The company was established under the company Act, 1964 to operate under the finance company Act. The objectives of the company are to mobilize financial resource to be channelized mostly to the housing sector and to provide mostly intermediate creditors for hire purchase activities.

Authorized capital, issued capital and paid up capital of NHMFAL are Rs 60,000,000, Rs 30, 000,000 and Rs 30, 000,000 respectively. Par value per share is Rs 100. Listing data of NHMFAL share on stock exchange is 1997.

Table 4.5

Realized Rate of Return, Expected Return and the Standard Deviation of Common stock of NHMFAL

Fiscal year	Year end Price (P)	Dividend (d`)	$R = \dfrac{Pt - Pt - 1 + Dt}{Pt - 1}$	$(R Z \overline{R})$	$(R Z \overline{R})^2$

2002/03	235	19.93	-	-	-
2003/04	280	15	0.2553	0.2183	0.0476
2004/05	310	15	0.1607	0.1237	0.0153
2005/06	240	20	-0.1612	-0.1982	0.0392
2006/07	230	11.04	0.0043	-0.0327	0.0010
2007/08	230	21.56	0.0937	0.05667	0.0032
2008/09	210	22.10	0.0091	-0.0279	0.0007
2009/10	280	25.42	0.4543	0.4173	0.1741
Total			0.2591		0.2811

Source: Annual Report of SEBON

The above table 4.5 shows that the expected return, standard deviation and coefficient of variation of common stock of NHMFAL. The total realized rate of return and expected return of NHMFAL is 0.2591 and 0.037 respectively. Its standard deviation 0.2172 whereas CV is 5.8717 which means that for earning one extra unit of return from the share of NHMFAL, investors have to take 5.8717 unit of risk. (For Details Please See Appendix- V)

Figure 4.5

Annul Rate of Return of Common Stock of NHMFAL

The above figure 4.5 shows the annul rate of return of NHMFAL of seven years from fiscal year 2002/03 to 2009/10. In the figure 4.5, the annual rate of return of common stock of NHMFAL was negative in the fiscal year 2005/06 and annual return of rest year was positive. In the FY 2009/10 the annual return was highest.

4.6 Samjhana Finance Company Limited (SAFCL)

Samjhana Finance Company Ltd was established in 1994 October under company act, 1964 with an approval of the Nepal Rastra Bank to operate under the finance company act, 1986. The major objective of the company is to mobilize scattered saving and to deploy them in the needy sector for the economic development of the country. The company has commenced to accept deposits and to deploy them since April 1995 under the finance company Act, 1986.

Authorized capital, issued capital and paid up capital of SAFCL is Rs 40,000,000 Rs 22,500,000 and Rs 15,153,000 respectively. Par value per share is Rs 100. Listing date of Samjhana finance limited on stock exchange is 1997.

Table 4.6

Realized Rate of Return, Expected Return and S.D of Common Stock of SAFAL

Fiscal Year	Year end price (P)	(D) Dividend	$R \, X \dfrac{P_t \, Z P_t 1 \Gamma D_t}{P_t \, Z1}$	$(R \, Z \overline{R})$	$(R \, Z \overline{R})^2$
2002/03	145	5	-	-	-
2003/04	50	0	-0.6551	-0.7228	0.5224
2004/05	110	0	1.20	1.1323	1.2821
2005/06	125	0	0.1363	0.0686	0.0047
2006/07	124	0	-0.0080	-0.0757	0.0057
2007/08	10	0	-0.1129	-0.1806	0..0326
2008/09	105	0	-0.0455	-0.1132	0.0128
2009/10	100	0	-0.0476	-0.1153	0.0132
Total			0.4672		1.8735

Above Table 4.6 shows that the expected return, S.D and coefficient of variation of common stock of SAFCL. The total realized rate of return and expected return of SAFCL

is 0.4672 and 0.0677 respectively. Its .S.D is 0.5609 where as C.V is 8.2860 which mean that for earning are extra unit of return from the share of SAFCL, investor have to take 8.2860 unit of risk. (Appendix- VI)

Figure 4.6

Annual Rate of Return of common Stock of SAFCL

The annual rate of return of seven years is shown in the above figure 4.6.

The annual rate of return of common stock of SAFC was positive in the fiscal year 2004/05, 2005/06 and rest year return was negative in the FY 2004/05 the annual return was highest.

4.1.7 Annapurna Finance Company Ltd (ANFCL)

Annapurna finance company limited was established on 1993 under the company ac t, 1964. This is the first finance company established outside Kathmandu valley. The main objective of the company is to collect deposit, top provide short term and long term loans and other finance company Act 1985.

Authorized capital, issued capital and paid up capita of ANFCL is Rs 40,000,000, Rs 20,000,000 and Rs 20,000,000 respectively. Par value per share is Rs 100. Listing date of NAFCL on stock exchange in 1994.

Table 4.7

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Realized Rate of Return, Expected Return and the Standard Deviation of Common Stock of ANFCL

Fiscal year	Year end Price (P)	Dividend (d`)	$R = \dfrac{Pt - Pt - 1 + Dt}{Pt - 1}$	$(R Z \bar{R})$	$(R Z \bar{R})^2$
2002/03	450	110	-	-	-
2003/04	580	24	0.3422	0.2261	0.0511
2004/05	410	24	-0.2517	-0.3678	0.1352
2005/06	420	24	0.0830	-0.0331	0.0010
2006/07	470	55.26	0.2508	0.1347	0.0181
2007/08	445	68.42	0.0923	-0.0238	0.0005
2008/09	500	11.06	0.1484	0.0323	0.0220
2009/10	550	24	0.1480	0.0319	0.0010
Total			0.8130		0.2289

Source: Annual Report of SEBON

The above table 4.7 shows that the expected return, standard deviation and coefficient of variation of common stock of ANFCL. The total realized rate of return and expected return of ANFCL is 0.8130 and 0.1161 respectively. Its standard deviation 0.1960 whereas CV is 1.69 which means that for earning one extra unit of return from the share of ANFCL, investors have to take 1.69 unit of risk. (Appendix- VIII)

Figure 4.7

Annual Rate of Return of Common Stock of ANFCL

The above figure 4.7 shows the annual rate of return of common stock of ANFCL in different years. The annual rate of return of common stock of ANFCL was negative in the fiscal year 2004/ 05 and the rest of years it was positive. In FY 2003/04 the annual return was highest.

4.1.8 Kathmandu Finance Company (KAFAL)

Kathmandu Fiancé Company was established in 1994 under the company act 1964. The main objective of the company is to accept deposits and to provide loans and advance and other financial services under the financial company act, 1985. Its head office is situated in Putalisadak, Kathmandu.

Authorized capital, issued capital and paid up capital of KAFAL are Rs 40,000,000, Rs 20,000,000 and Rs 20,000,000 respectively. Par value per share is Rs 100. Listing date of KAFAL share on stock exchange in 1995.

Table 4.8

Realized Rate of Return, Expected Return and the Standard Deviation of Common Stock of KAFAL

Fiscal year	Year end Price (P)	Dividend (D`)	$R = \dfrac{P_t - P_{t-1} + D_t}{P_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2002/03	295	20	-	-	-
2003/04	321	2312	0.1661	0.1059	0.0112
2004/05	305	50	-0.0125	-0.0727	0.0052
2005/06	235	-	-0.0656	-0.1258	0.0158
2006/07	138	11.054	-0.4553	0.5155	0.2657
2007/08	135	20	0.0583	-0.0019	0.0000
2008/09	147	16.58	0.2370	0.1768	0.0312
2009/10	203		0.4937	0.4335	0.1879
Total			0.4217		0.5170

Source: Annual Report of SEBON

Table 4.8 shows that the expected return, standard deviation and coefficient of variation of common stock of KAFAL. The total realized rate of return and expected return of KAFAL is 0.4217 and 0.0602 respectively. Its standard deviation is 0.2946 and CV is 4.8950 which mean that one extra unit of return from the share of KAFAL, investors have to take 4.8950 unit of risk (Appendix- VII).

Figure 4.8

Annual Rate of Return of Common Stock of KAFAL

The figure shows the different years annual rate of common stock of KAFAL. The annual rate of return of common stock of KAFAL was negative in the FY 2004/05 to 2005/06 and rest year was positive. In the FY 2009/10 the annual return was highest.

4.1.9 Ace Finance Company Limited (ACFCL)

Ace finance company limited was established in 1994 under the company Act, 1964 with the objective of colleting deposits and providing loans and advance under the company act, 1985. In addition to these, the company has objective of acting capital market intermediaries under the securities exchange Act, 1983.

Authorized capital, issued capital and paid up capital of Ace fiancé c company limited are Rs 60,000,000, Rs 30,000,000 and Rs 29914000 respectively. Par value per share is Rs 100. Listing data of Ace finance company limited on stock exchange is 1996.'

Table 4.9

Realized Rate of Return, Expected Return and the Standard Deviation of Common Stock of ACFCL

Fiscal year	Year end Price (P)	Dividend (d`)	$R = \dfrac{Pt - Pt - 1 + Dt}{Pt - 1}$	$(R Z \overline{R})$	$(R Z \overline{R})^2$
2002/03	411	20	-	-	-
2003/04	500	25	0.2773	0.1278	0.0163

2004/05	230	5	-0.5300	-0.6795	0.4617
2005/06	240	15	0.1086	-0.0409	0.0016
2006/07	173	15	-0.2167	-0.3662	0.1341
2007/08	251	20	0.5664	0.4169	0.1738
2008/09	320	-	0.2749	0.1254	0.0157
2009/10	459	42.11	0.5660	0.4165	0.1734
Total			1.0465		0.9766

Source: Annual Report of SEBON

The above table 4.9 shows that the expected returns, standard deviation and CV of common stock of ACFCL. The total realized rate of return and expected return of ACFCL is 1.0465 and 0.1495 respectively. Its standard deviation 0.4050 whereas CG is 2.70 which means that for earning one extra unit of return from the share of ACFCL, investors have to take 2.70 unit of risk (Appendix- IX).

Figure 4.9

Annual Rate of Return of Common Stock of ACFCL

The figure 4.9 shows the annual return of ACFCL in different years. The annual rate of return of common stock of ACFCL was negative in the fiscal years 2004/05 and 2006/07. The annual return of rest years was positive. In the FY 2007/08 the annual return was highest.

4.1.10 Citizen Investment Trust (CIT)

CIT was established in 1991 under the citizen investment trust act, 1991. The main objectives of the trust is to encourage general public to save by creating opportunities to invest in varied financial instruments and also to contribute in the process of capital market development by acting as investment management. Authorized capital, issued capital and paid up capital of CIT are Rs 80,000,000, Rs 40,000,000 and Rs 31,183,600 respectively. Par value per share is Rs 100. Listing date of CIT share o Nepal stock exchange in 1995.

Table 4.10

Realized Rate of Return, Expected Return and the Standard Deviation of Common Stock of CIT

Fiscal Year	Year end Price (P)	Dividend (d`)	$R = \dfrac{Pt - Pt - 1 + Dt}{Pt - 1}$	$(R Z \overline{R})$	$(R Z \overline{R})^2$
2002/03	115	0	-	-	-
2003/04	180	0	0.5652	0.2883	0.0831
2004/05	165	0	-0.0833	-0.3602	0.1297
2005/06	170	14	0.1152	-0.1617	0.0261
2006/07	165	14	0.0529	-0.2240	0.0501
2007/08	200	15	0.3030	0.0261	0.006
2008/09	266	15	0.4050	0.1281	0.0164
2009/10	352	68.42	0.5805	0.3036	0.0921
Total			1.9385		0.3981

Source: Annual Report of SEBON

The above table 4.10 shows that the expected returns, standard deviation and CV of common stock of CIT. The total realized rate of return and expected return of CIT is 1.3985 and 0.2769 respectively. Its standard deviation 0.2585 whereas CV is 0.9338 which means that for earning one extra unit of return from the share of CIT, investors have to take 0.9338 unit of risk (Appendix- X).

Figure 4.10

Annual Rate of Return of Common Stock of CIT

The figure 4.10 shows the annual return of CIT in different years. The annual rate of return of common stock of CIT was negative in the fiscal years 2004/05. The annual return of rest years was positive. In the FY 2007/10 the annual return was highest.

4.2 Inter-Firm Comparison

Market capitalization of ten finance companies at July 16, 2010, is shown in the following table.

Table 4.11

Market Capitalization of Selected Finance Companies

Name	Market Capitalization	Percentage
PEFAL	25400000	2.64
NAFAL	138000000	14.35
NSMFCL	180000000	18.72
NAFIL	82500000	8.58
NHMFAL	84000000	8.74
SAFCL	22500000	2.34
ANFCL	1100000100	11.44
KAFAL	40600000	4.22
ACFCL	137700000	14.32
CIT	140800000	14.64
Total	961500000	100.00

The market capitalization of ten selected finance companies is shown in both table and figure. NSMFC is the biggest and SAFCL is the smallest finance company on the basis of the market capitalization. Figure 4.11 shows the companies proportion of the market capitalization of selected finance comparative PEFAL, NAFAL, NSMFCL, NAFIL, NHMFAL, SAFCL, ANFCL, KAFAL, ACFAL and CIT. Figure shows that the NSMFCL has better performance from the view point of market capitalization than other finance companies.

Table 4.12

Expected Return, Standard Deviation and of Selected

Finance Companies

S.N	Companies	Expected Return	Standard Deviation	Coefficient of Variation
1	PEFAL	0.042	0.3491	8.3132
2	NAFAL	0.1017	0.4041	3.97
3	NSMFCL	0.1750	0.5272	3.0126
4	NAFIL	0.0660	0.2495	3.7816
5	NHMFAL	0.037	0.2172	5.8717
6	SAFCL	0.0677	0.5609	8.2860
7	ANFCL	0.1161	0.1960	1.69
8	KAFAL	0.0602	0.2946	4.8950

| 9 | ACFCL | 0.1495 | 0.4050 | 2.70 |
| 10 | CIT | 0.2769 | 0.2585 | 0.9338 |

Above table 4.12 shows that the expected rate of return of CIT is the highest (i.e. 0.2769 or 27.69%). It means by investing Rs 100 in the common stock of CIT, its share holder can earn Rs 27.69 at the end of the year. Common stock of NHMFAL is low rate of return (i.e. 0.037 or 3.7%) than other finance companies common stocks return. The best way of comprising the CV of CIT is the lowest which means that to earn one unit return, the investors of CIT should bear 0.9338 unit of risk. Expected rate of return and CV of selected finance accompanies is shown in the figure 4.12, 4.13 and 4.14 respectively.

Figure 4.12

Expected Return of Ten Finance Companies

Figure 4.13

Standard Deviation of Ten Fiancé Companies

Figure 4.14

Coefficient of Variation of Ten Finance Companies

4.3 Industry Wise Comparison

A comparison made on the basis of market capitalization and NEPSE index. The industry wise proportion of the market capitalization is shown in the following table and figure.

Table 4.13

Industry Wise Market Capitalization at July 16.2010

Name	Market Capitalization	Percentage
Banking	141599	76
Finance and Insurance	17949.10	9.63
Manufacturing and Processing	6200	3.33
HOTEL	3261.10	1.75
Trading	796.4	0.43
Other	16495.7	8.86
Market	186301.30	100

On the basis of market capitalization banking industry has best performance and other industry has low performance.

Figure 4.15

Industry wise market capitalization

The figure 4.15 shows the proportion of market capitalization of each sector at July 16, 2010. The market capitalization of the banking sector is highest 76% whereas the trading sector has the lowest 0.43% market capitalization.

Table 4.14

Year End (FY) Market Capitalization of Different Industries

(Rs. in Million)

Industry	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Banking	31235.21	25861.8	22453.49	27947.2	41169.9	40272.3	141599
Finance & Insurance	5255.65	4328.55	2474.85	5461.05	7632.23	9952.23	17949.1
Mfg & Processing	5971.97	2807.74	4731.30	4644.59	5024.83	5472.11	6200
HOTEL	2969.85	107.12	2550.61	2391.39	2308.38	2344.21	3261.10
Trading	616.98	527.48	488.02	490.37	635.88	764.44	796.4
Other	299.76	1071.09	67.26	493.09	4594.62	8008.94	16495.7

Table 4.15

Sector wise NEPSE Index (at Closing Date of FY)

Industry	Commercial Banking	Mfg	HOTEL	other	Hydropower	Trading
2003/04	379.88	349.31	291.34	190.9	-	155.55
2004/05	219.35	273.67	216.51	77.34	-	102.2
2005/06	119.90	250.13	196.68	48.56	-	94.56
2006/07	231.97	255.58	184.41	142.65	-	95.01
2007/08	304.64	276.50	178	347.65	-	123.20
2008/09	437.49	301.11	180.77	410	-	148.11
2009/10	789.21	348.63	251.47	818.12	847.93	155.37

Industry	Finance and Insurance	Development Bank	Market

2002/03	305.98	-	683.95
2003/04	318.67	262.94	386.83
2004/05	288.76	246.72	286.67
2005/06	224.39	190.03	222.04
2006/07	216.80	237.86	204.86
2007/08	274.31	294.40	227.54
2008/09	321.31	539.66	348.43
2009/10	542.14		

Source: Annual Report of SEBON

Table 4.16

Calculation of Realized Rate of Return, Standard Deviation, Expected Rate of Return and CV of Financial Industry

Fiscal Year	Financial Index (FI)	$R\ X\dfrac{FI_1 - FI_O}{FI_O}$	$(R\ Z\bar{R})$	$(R\ Z\bar{R})^2$
2002/03	305.98	-	-	-
2003/04	318.67	0.0415	-0.0749	0.0056
2004/05	288.76	-0.0939	-0.2103	0.0442
2005/06	224.39	-0.2229	-0.3393	0.1151
2006/07	216.80	-0.0338	-0.1502	0.02256
2007/08	274.31	0.2653	0.1489	0.0221
2008/09	321.31	0.1713	0.0549	0.0030
2009/10	542.14	0.6873	0.5709	0.3259
Total	0.8148			0.5385

The above table 4.16 shows that the expected returns, standard deviation and CV of common stock of finance Industries. The total realized expected return of financial Industries is 11.64. Its standard deviation(i.e. total risk) 0.3007 whereas CV is 2.5837 which means that for earning one extra unit of return from the share of financial Industries, Investors have to take 2.5837 unit of risk (Appendix- XI).

Figure 4.16

Annual Rate of Return of Common Stock of Finance Industry

Similar to table 4.15 return of each industry is calculated on the basis of industry wise NEPSE index. Even though industry wise NEPSE index is not available in NEPSE. It is calculated on the basis of data provided and model applied as per SEBON. Details of calculation of Index are not included in the report. Figure 4.16 shows the annual rate of return of finance and insurance sector in different fiscal years. In FY 2007/08 the return of finance and insurance sector was high. Year end industry wise NEPSE index is given in table 4.14. Annual realized return, expected return, standard deviation of return and CV of finance industry are shown in table 4.16 similarly, table 4.17 shows these variables of each industry.

Table 4.17

Expected Return, Standard Deviation and CV of Different Industry

S.N	Industries	Expected Return	S.D	CV
1	Finance	0.1164	0.3007	2.5837
2	Banking	0.1302	0.3872	2.97
3	Mfg & Processing	0.0139	0.1570	11.294
4	HOTEL	-0.0281	0.2057	-7.3201
5	Trading	0.0424	0.1542	3.6372
6	Other	0.4573	1.0052	2.1981
7	Market	0.1444	0.3638	2.5197

According to the result of table 4.17 the return of common stock investment in other sector is highest which shows that higher the return, higher will be risk. The return of HOTEL sector is negative.

4.4 Analysis of Risk and Return of Market

In Nepal, there is only one stock market which is the Nepal stock exchange. (NEPSE). It is the nonprofit organization operating under securities exchange act, 1983. Overall market movement is represented by market index or NEPSE index. Market return, its standard deviation and coefficient of variation is shown in the following table 4.18.

Table 4.18

Realized Rate of Return, S.D and the CV of the Market

Fiscal Year	Market Index MI	$R\ X\dfrac{MI_1 - MI_0}{MI_0}$	$(R Z\bar{R})$	$(R Z\bar{R})^2$
2002/03	360.7	-	-	-
2003/04	348.13	-0.0348	0.1792	0.0321
2004/05	227.54	-0.3463	-0.4907	0.2407
2005/06	209.86	-0.0997	-0.2441	0.0595
2006/07	222.04	0.0839	-0.0605	0.0036
2007/08	286.67	0.2910	0.1466	0.0215
2008/09	386.83	0.3493	0.2049	0.0419
2009/10	683.95	0.7680	0.6236	0.3889
Total		1.0114		0.7882

The above table 4.18 shows the expected return, standard deviation and coefficient of variation of market. The total realized rate of return and expected return of market is 1.0114 and 0.1444 respectively. The total risk (S.D) is 36.38% whereas CV is 2.5197. (Appendix- XII)

Figure 4.17

Annual Rate of Return of Market

Figure 4.17 represents the annual rate of return of the market in different years. In the fiscal year 2006/07 to 2009/10 the annual return of the market was positive and the rest of years it was negative. In the FY 2008/09 the annual return was maximum than other year.

Testing of Hypothesis- I

The first hypothesis is based on the test of significance for different of mean (t -test) Null Hypothesis (H_O): $\bar{x}_1$ X $\bar{x}_2$, i.e. there is no significant difference between the portfolio return of the common stock of finance companies and return of market portfolio. In other words, average return on the share of finance companies is equal to the market return. (Appendix- XIII)

4.5 Market Sensitivity (Beta Coefficient Analysis)

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Market sensitivity of the stock is explained by its beta coefficient Beta coefficient, $\wp$ measure how much systematic risk on the asset has. It measures the responsiveness of a security to movements in the market portfolio. Beta coefficient shows the volatility of stock which can not diversifiable. Beta coefficient of market is always equal to 1. This statement can be proved as follows.

$$\mathsf{S}_j \; X \frac{Cov(R_j R_m)}{\dagger^2{}_m}$$

$$X \frac{\dagger_j \dagger_m \, r_{jm}}{\dagger^2{}_m} \; X \frac{\dagger_j \, r_{jm}}{\dagger_m}$$

Where,

r_{jm}= correlation between market return and stock return

$$\mathsf{S}m \; X \frac{Cov(R_m.R_m)}{\dagger^2 m} \; X \frac{\dagger_m \, r_{mm}}{\dagger_m} \; X1(r_{mm} \; X1)$$

Thus, the beta coefficient of market is always equals to one. Calculation of beta coefficient of selected finance companies in the following table.

Table 4.19

Beta Coefficient of Common Stock of PEFAL

Fiscal Year	R_j	$(R_j\text{-}\overline{Rj}\;\;)$	R_m	$R_m\text{-}\overline{R}_m$	$(R_j\text{-}\overline{R}_j)(R_m\text{-}\overline{R}_m)$
2003/04	-0.2333	-0.2753	-0.0348	-0.17992	0.0493
2004/05	-0.4348	-0.4768	-0.3463	-0.4907	0.2339
2005/06	-0.0770	-0.1190	-0.0997	-0.2441	0.0290
2006/07	0.4888	0.4468	0.0839	-0.0605	-0.0270
2007/08	0.1538	0.1118	0.2910	0.1466	0.0163
2008/09	0.47	0.4280	0.3493	0.2049	0.0876
2009/10	-0.0729	-0.1149	0.7380	0.6236	-0.0716
Total					0.3175

Since the beta of the PEFAL is 0.3998 which is lower than 1(market beta). Its stock is low sensitive with market as the beta is positive it moves with the market. It means if the market return arises, stock return of PEFAL will also rise. If the market return arises by

1% then the stock return of PEFAL will rise by about 0.3998% and vice versa. NSMFCL has the highest beta coefficient with the market beta that means its stocks are more sensitive then others tock. The stock of NAFIL has least beta coefficient with market which means that its stocks are less sensitive than others. Thus comparing the beta coefficient of 10 stocks, we can say that the stock of NSMFCL is more risky and the stock of ANFCL is less risky than the market. Beta coefficient of selected finance companies is shown in table below. (Detail calculation of beta of selected finance companies except PEFAL is shown in Appendix- XIV).

Table 4.20

Beta Coefficient of Ten Finance Companies

S.N	Finance Companies	Beta (ꙅ)
1	PEFAL	0.3938
2	NAFAL	0.7346
3	NSMFCL	1.3134
4	NAFIL	0.2203
5	NHMFAL	0.2686
6	SAFCL	0.6946
7	ANFCL	0.2052
8	KAFAL	0.4065
9	ACFCL	0.8680
10	CIT	0.50

Major implication of the beta is in capital Assets Pricing Model (CAPM). It gives the model that gives the required rate of return of common stock. It can be determined whether the stock is under priced and over prices with comparison of expected rate of return (ERR) and required rate of return (RRR). If RRR is less than ERR, stock is said to be under priced then the investor should make buying strategy for these type of stock and vice versa. Expected market return, risk free rate of return are the major affecting variable to RRR; hence, the application of CAPM in RRR determination is presented. Table 4.21 shows the RRR, ERR and price evaluation of each stock.

Table 4.21

Expected Rate of Return, Required Rate of Return and

Price Evaluation

S.N	Finance `Companies	Beta (S)	Expected Return (%)	RRR=Rf+ $\overline{(Rm\,Z\,Rf\,)}Bj$	Price Evaluation
1	PEFAL	0.3938	4.2	9.31	Over Priced
2	NAFAL	0.7346	10.17	12.19	Over Priced
3	NSMFCL	1.3134	17.50	17.08	Under Priced
4	NAFIL	0.2203	6.60	7.85	Over Priced
5	NHMFAL	0.2686	3.7	8.26	Over Priced
6	SAFCL	0.6946	6.77	11.85	Over Priced
7	ANFCL	0.2052	11.61	7.72	Underpriced
8	KAFAL	0.4065	6.02	9.42	Over Priced
9	ACFCL	0.8680	14.95	13.32	Underpriced
10	CIT	0.50	27.69	10.21	Underpriced

Where,

Rf=weighted average of Treasury bill rate (364-days, annualized percent)

= 5.9906% (*Source= NRB (Quarterly Economic Bulletin, Mid April 2008, Vol. XXX VII, No. 4)*

$\overline{Rm}$ = Market rate of return= 0.1444

$$= 14.44\%$$

According to the above result, 6 finance companies stock are overpriced then the stock sell and 4 finance companies stock are recommended to buy to their common stock are under priced.

Test of Hypothesis- II

This hypothesis is base on the test of significant for single mean (t-test). Null hypothesis $(H_O) = \overline{S} = 1$ i.e. average beta f the finance companies is equal to 1. In other words, there

is no significant difference between the portfolio beta of finance companies and the market beta. (Appendix- XV)

4.6 Sharpe Portfolio Optimization

The construction of an optimal portfolio is simplified if a single number measures the desirability of including the stock in the optimal portfolio. To optimize the portfolio under Treynor's model, first of all we have to find out the excess return to be beta by using the following formula.

Excess return to beta $\dfrac{Rj\,Z\,Rf}{Bj}$

Where,

R_j= Expected return on stock j

R_f= Return risk less assets

B_j= Expected change in the rate of return on stock j associated with a 1 percent change in the market return or systematic risk or the beta coefficient of stock j.

4.6.1   Ranking of the Securities (Stocks)

After calculating the excess return to beta we have to rank the securities. The securities are ranked on the basis of higher to lower excess return to beta. The following table 4.21 shows the ranking the securities on the basis of excess return to beta.

Table 4.22

Ranking the Securities Basis of Excess Return to Beta

Ranking	Finance	Mean Return%	Rj-Rf Excess return%	Beta Bj	USR 6^2et	Excess return to beta (Rj-Rf)/Bj
I	CIT	27.69	21.70	0.50	337	43.40
II	ANFCL	11.61	5.62	0.2052	328	27.38
III	ACFCL	14.95	8.96	0.8680	643	10.32
IV	NSMFCL	17.50	11.51	1.3134	498	8.76
V	NAFAL	10.17	4.18	0.7346	918	5.69
VI	NAFIL	6.60	0.61	0.2203	557	2.76

VII	SAFCL	6.77	0.78	0.6946	2507	1.12
VIII	KAFAL	6.02	0.03	0.4065	648	0.673
IX	PEFAL	4.2	-1.79	0.3938	1014	-4.545
X	NHMFAL	3.7	-2.29	0.2686	375	-8.52

⌡ Detail of calculation of unsystematic risk is shown in Appendix iii

Where,

Rf =5.99%= weighted average of Treasury bill rate (364 days)

Source: NRB (Quartly Economic Bulletin Mid, April, Vol. XXX VII, No 4)

4.6.2 Establishing a Cutoff Rate

All securities whose excess return to risk ratios are above the cur off rate are selected and all whose ratios are below are rejected. The value of C* is computed from the characteristics of al of the securities that belong in the optimum portfolio. To determine the C* it is necessary to calculate its value as of different optimum portfolio. Suppose Cj is a candidate for C*. The value of Cj is calculated when i securities are assumed to belong to the optimum portfolio.

For the portfolio of j stocks. Cutoff rate is calculated by using following formula.

$$
Cj \times \frac{\dagger^2 m \sum_{j \times 1}^{j} \frac{(Rj \, Z \, Rf) s j}{\dagger^2 ei}}{1 \Gamma \dagger^2 m \sum_{j \times 1}^{j} \frac{s^2}{\dagger^2 ei}} \times \text{Calculation of cutoff rate is shown in appendix IV}
$$

Where,

Cj= Cut off rate of stock j

$\exists^2 m$= variance of market index

$\exists^2_{ei}$= Stock unsystematic risk.

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Table 4.23

Calculation of Determining Cut off Rate

Ranking	Finance company	$\dfrac{Rj\,Z\,Rf}{\text{s}j}$	$\dfrac{(Rj\,Z\,Rf)Bj}{\dagger^{2}ei}$	$\dfrac{\text{s}^{2}}{\dagger^{2}ei}$	$\dfrac{(Rj\,Z\,Rf)Bj}{\dagger^{2}ei}$	$\dfrac{\text{s}^{2}}{\dagger^{2}ei}$	C
I	CIT	43.40	0.0321	0.0007	0.0321	0.0007	22.053
II	ANFCL	27.38	0.00351	0.00012	0.0356	0008	22.89[*]
III	ACFCL	10.32	0.0139	0.0012	0.0495	0.002	17.96
IV	NSMFCL	8.76	0.03035	0.0034	0.0799	0.0054	12.97
V	NAFAL	5.69	0.0033	0.00059	0.0832	0.0059	12.50
VI	NAFIL	2.76	0.00024	0.00008	0.0834	0.00599	12.36
VII	SAFCL	1.12	0.002	0.0001	0.0836	0.006	12.35
VIII	KAFAL	0.673	0.00001	0.00026	0.0836	0.0062	12.01
IX	PEFAL	-4.54	-0.00069	0.00016	0.0829	0.0063	11.75
X	NHMFAL	-8.52	-0.0016	0.00019	0.0813	0.0065	11.20

* Means the highest value of cutoff rate of this is the value of C*

Where,

$\exists^{2}$m= variance of Market index

$\exists^{2}$ei= stocks unsystematic risk

Because stocks are ranked from the highest excess return to beta to lowest. We know that if a particular security belongs in the optimum portfolio all higher ranked securities also belongs in the optimum portfolio. We proceed to calculate value of a variable C_j as if the first ranked security were in the optimum portfolio (j= stock of CIT), then the second stock were in the optimum portfolio (j=stock of ANFCL).These C_j are candidates for C* we have found the optimum C_j, that is C*. When all stocks used in the calculation of C_j have excess return to beta above C_j and all stocks not used to calculate C_j have excess return to betas below C_j. In column 8 of the above table no 4.22 we see the C_j for which all securities used in the calculation. (In Table no (4.21) row (1) through (2) in the table have a ratio of excess return to beta above C_j and all securities not used in the calculation of C_j (row (3) through (10) in the table) have an excess return to beta ratio below C_j, ANFCL (cutoff rate of stock of ANFCL) serves the role of cutoff rate in the way a cutoff

rate is defined earlier. In particular, ANFCL is the only C_j that when used as a cutoff rate selects only the stocks used to construct it. There will always be one and only one C_j with this properly and it is C*

4.6.3 Optimal Portfolio

Once we know which securities are to be included in the optimum portfolio, we must calculate the present invested in each security. The percentage invested in each security. The percentage invested in each security is calculated by using the following formula.

$$Xj \, X \frac{Zt}{\sum_{jXl}^{N} Zj}$$

Where,

$$Zj = \frac{Sj}{\dagger^2 ei} \left[\frac{Ri \, Z \, Rf}{Sj} \, Z \, CB \right]$$

Xj= Proportion of invest able funds in security j

The second expression determines the relative investment in each security, and the first expression simply scales the weight on each security. So that they sum to 1. The residual variance on each security $\exists^2_{ei}$ plays an important role in determining how much to invest in each security. By using the formula.

$$Z_{CIT} = \frac{0.50}{337} (43.40 \, Z \, 22.89)$$
$$X \, 0.0304$$

$$Z_{ANFCL} = \frac{0.2052}{328} (27.38 \, Z \, 22.89)$$
$$X \, 0.0028$$

$$\sum_{jXl}^{2} Zj = Z_{CIT} + Z_{ANFCL} = 0.0332$$

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Dividing each Zj by the sum of the Zj we recommended investing 91.56 percent of fund on the stock of citizen investment trust, 8.44 percent on the stock of Annapurna Finance Company Limited that maximize the portfolio return and minimize the risk.

The characteristics of a stock that make it desirable can be determined before the calculation of an optimal portfolio is begun. The desirability of any stock is solely a function of its excess return to beta ratio.

4.6.4 Major Finding and Conclusion

⟩ Nepalese stock market is in emerging stage. Its development is acceleration since the political change in effect of openness and liberalization in National economy. But due to lack of information and poor knowledge, Nepalese individual investor cannot analyze the securities as well as market properly.

⟩ Total Risk (measured by the standard deviation) is observed maximum in common stock of Samjhana Finance company Ltd. (56.09%) and minimum in common stock of Nepal Housing and Merchant Finance company Ltd (21.72%). We should only consider the risk it's appropriate to invest common stock of Nepal Housing and Merchant finance company ltd.

⟩ Return is the income received on as stock Investment which is expressed in percentage. The expected rate of return of the common stock of citizen investment trust is highest (i.e. 27.69%) among the selected finance companies. Similarly, expected rate of return (3.7%) is found lowest on common stock of Nepal housings and Merchant finance company ltd. We should only consider return, its appropriate to invest common stock of citizen investment trust.

⟩ Coefficient of variation, (CV) shows the relative measure of risk. Among selected finance companies the CV of common stock of PEFAL is highest (8.31) and common stock of CIT is the lowest (0.9338). This result represent that investment in common stock of CIT is good. Investment in common stock of PEFAL may not be good from the view point of both risk and return.

⟩ Market sensitivity or the systematic risk is measured by Beta coefficient. Which can not be reducing by diversification? NSMFCL's stock is highly sensitive with market

due to its greater degree of beta coefficient and beta of stock of ANFCL is less sensitive to market beta.

) The first hypothesis is based on the test of significance of different mean (i.e. finance company's return and market return) has been executed to test whether overall return on common stock of finance company is equal to the market or not. Thus, over the study period it was found that the null hypothesis is accepted i.e. overall return of finance company is equal to the market return.

) The second hypothesis is based on the test of significant of single mean (i.e. finance companies beta and the market beta) has been executed to test whether overall beta on common stock of finance companies is equal to 1. Thus over the study period it was found that null hypothesis is accepted. Which means that the portfolio beta of common stock of finance companies is equal to market beta?

CHAPTER- V
SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter includes the conclusion derived from the analysis of the study. Summary of the study has been mentioned the first section. The second section has been designed for the finding and conclusion drawn from the study. The recommendation to eliminate the weakness, drawbacks of the common stock investment observed on the basis of finding has been labeled in the third section.

5.1 Summary

The main focus of the study is trade off between risk and return. The relationship between risk and return is described by investor's perception about risk and their demand for compensation. No investor will like to invest in risky assets unless he is assured of adequate compensation for the acceptance of risk. Hence the risk plays the vital role in the analysis of the investment. Risk and return is getting considerable attention in financial decision. The rate of return on the investment is the function of many factors including the real cost of money, inflation risk, maturity risk and default risk etc. The investors willingly offer more capital at higher rate of return where as the users of capital shows their readiness to use more capital at lower rate. Risk is the probability of chances of losses. It shows the variability of the return on the investment.

Common stock is the most risky security and life blood of stock market. An investment in common stock of corporate firm neither ensures the rate of return nor ensures the return of principle. Common stock is the residual claimant to the earnings of the company. Common stocks holders receive what ever is left after all the other claimholder have taken their rightful share. Therefore, investment in common stock is very sensitive on the ground of risk.

Finance Companies are the newly emerged institutions in Nepal. They came into operation under finance companies act 1985. They are registered as limited liability

companies with the office of the register of companies according to the provision made in the companies ac t, 1965.The accept time deposit and advance loans to individual, firms, companies or institution for agriculture as well as non agriculture purpose in order the increase economic activities. They also perform functions of merchant banking with the prior approval of NRB. They have become popular among low income and medium classes people as they make loans available for hire purchase and for the purchase vehicles, machinery, tools durable household goods or other similar movable goods.

Since the main objectives of the study is to analyze the risk and return of common stock of Nepalese finance companies and that the stock of selected companies are overpriced, under priced or correctly priced. And also evaluate the optimum portfolio. Ten listed finance companies are taken as reference to analyze the risk and return in common stock investment. While analyzing the risk and return, brief review of literature has been conducted. Scientific method are used in data analysis and table, graph, diagram are used to present the result. Secondary data are collected from NEPSE, SEBON, NRB and related finance companies. Conclusion and Recommendation of the study are drawn as follows.

5.2 Conclusion

On the basis of market capitalization on July 16, 2010 banking sector covers more than 75% of total market capitalization which means that the banking sector has good performance than others.

Other sectors has the maximum (45.73%) expected return and rest sectors has the minimum expected return. The expected rate of return of banking, finances and insurance, manufacturing and processing, HOTEL and Trading are 13.02 percent, 11.64 percent, 1.39 percent, -2.81 percent, 4.24 percent respectively CV of manufacturing and processing is highest 11.294 and Hotel sectors has the negative CV. Selected finance companies stock are under price and overprice both the stock of CIT, ACFCL, ANFCL, NSMFCL, are under price, therefore it is better to buy these stocks. The stock of PEFAL,

NAFAL, NAFIL, NHMFAL, SAFCL, and KAFAL are overpriced therefore it is better to sell these stocks.

Common stock is citizen investment Trust (CIT) has highest excess return to beta (i.e. 43.40) and common stock of Annapurna Finance Company has also highest excess return to beta (i.e. 27.38) which is over the cutoff rate (i.e. 22.89). So investment on common stock of CIT is most desirable. It is better to invest 91.56% of the fund in common stock of CIT. Rest 8.44% in common stock of Annapurna Finance Company Ltd.

The optimum portfolio is the common stock of CIT and ANFAL which has the highest excess return to beta. i.e. 43.40, 27.38, which is over the C* (cutoff rate i.e. 22.89). So invest of fund of common stock of CIT and ANFAL. That is an optimal portfolio which minimizes the portfolio risk and maximizes the return.

5.3 Recommendation

The finding of this study might be useful for those who are concerned with the investment in common stock of finance companies directly or indirectly. On the basis of major finding of the study th4e researcher thinks appropriate to recommend the concerned institutions to individual authorities as well as other in order to consider the following suggestions.

⌐ Expected return recommends those finance companies common stocks are the best option for the investment as they are providing attractive rate of return.

⌐ The public limited companies that have listed their share in NEPSE should disseminate exact and update information to the general public. The financial statement of each year should be published through appropriate means. Hence, the updated and exact statement should be published.

⌐ The stocks of four listed finance companies are under price so the investor should invest their funds o these stocks to make more beneficial.

⌐ It was noticed that some of the listed finance companies have not submitted annual report to NEPSE on time. Hence, there must be stringent rules and regulations for

listed companies in order to make them responsible to disseminate update information in timely fashion.

- Investors who want to have high return should invest in CIT and ANFL because the return on stock of these companies is higher than other in comparison to return involved in their securities.

- Investment should be done with cleat objective i.e. to make additional money not to cover up losses and better to investigate.

- Stock market is very risky job so investors should know his need, desires, risk taking capabilities, adaptability in the changing market to win the stock market. Good forecasting ability self knowledge and sound understanding on information of stock market can give a winning edge to the investors.

- The listed companies should fulfill their liabilities of providing the financial status of the companies timely and comprehensively and they should hold Annual general meeting regularity.

- Before making an investment decision in stock market, analyze your own risk attitude yours needs and requirements make several discussions with stock broker and make your decision on the basis of reliable information rather than rumor and imagination.

- The development of stock market is also dependent on political stability of the nation. So, government should be stable for the development of the stock market.

- Investment in capital market is a new phenomenon in Nepal. Most of the investors are purchasing shares in primary market only. They are not so conscious the risk involves in initial public offering.

- In case of the stocks are undervalued and some are over valued thus investors are recommended to sell the overvalued stocks and to buy the undervalued stock.

- NEPSE needs to modernize the trading system and effective information channel. It should to develop different program for private investors such as meeting and seminars.

- Further study can be conducted by using more sample, sophisticated methodology and tools.

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1.1

Appendices

Appendix - I

We have,

Expected rate of return, $\bar{R} \ X\dfrac{\phi R}{n} \ X\dfrac{0.2946}{7} \ X0.042 \ X4.20\%$

$S \tan dard\ deviation \ † \ X\sqrt{\dfrac{(R\ Z\bar{R})^2}{n\ Z1}} \ X\sqrt{\dfrac{0.7258}{7\ Z1}} \ X0.3491$

$Coefficient\ of\ var iation, CV \ X\dfrac{†}{\bar{R}} \ X\dfrac{0.3491}{0.042} \ X8.3132$

Appendix - II

We have,

Expected rate of return $\bar{R} \ X\dfrac{\phi R}{n}$

$X\dfrac{0.7124}{7}$

$X0.1017$

$X10.17\ percent$

$S \tan dard\ deviation \ † \ X\sqrt{\dfrac{(R\ Z\bar{R})^2}{n\ Z1}} \ X\sqrt{\dfrac{0.9806}{7\ Z1}} \ X0.4041$

$Coefficient\ of\ var iation, CV \ X\dfrac{†}{\bar{R}} \ X\dfrac{0.4041}{0.1017} \ X3.97$

Appendix - III

We have,

Expected rate of return $\overline{R}$ X $\dfrac{\phi R}{n}$

X $\dfrac{1.2254}{7}$

X 0.1750

X 17.50 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{N\,Z1}}$ X $\sqrt{\dfrac{1.6550}{7\,Z1}}$ X 0.5272

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{\overline{R}}}}$ X $\dfrac{0.5272}{0.1750}$ X 3.0126

Appendix - IV

We have,

Expected rate of return $\overline{R}$ X $\dfrac{\phi R}{n}$

X $\dfrac{0.4623}{7}$

X 0.0660

X 6.60 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{n\,Z1}}$ X $\sqrt{\dfrac{0.3709}{7\,Z1}}$ X 0.2495

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{\overline{R}}}}$ X $\dfrac{0.2495}{0.0660}$ X 3.7816

Appendix - V

We have,

Expected rate of return $\overline{R}\ \text{X}\dfrac{\phi R}{n}$

$\text{X}\dfrac{0.2591}{7}$

X0.037

X3.70 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{N\,Z1}}\ \ \text{X}\sqrt{\dfrac{0.2811}{7\,Z1}}\ \text{X}0.2172$

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{\overline{R}}}}\ \text{X}\dfrac{0.2172}{0.037}\ \text{X}5.8717$

Appendix -VI

We have,

Expected rate of return $\overline{R}\ \text{X}\dfrac{\phi R}{n}$

$\text{X}\dfrac{0.4672}{7}$

X0.0677

X6.67 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{N\,Z1}}\ \ \text{X}\sqrt{\dfrac{1.8735}{7\,Z1}}\ \text{X}0.5609$

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{\overline{R}}}}\ \text{X}\dfrac{0.5609}{0.0677}\ \text{X}8.2860$

We have,

Expected rate of return $\overline{R}$ X$\dfrac{\phi R}{n}$

X$\dfrac{0.4217}{7}$

X0.0602

X6.02 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{N\,Z1}}$ X$\sqrt{\dfrac{0.5170}{7\,Z1}}$ X0.2946

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{R}}}$ X$\dfrac{0.2946}{0.0602}$ X4.8950

Appendix -VIII

We have,

Expected rate of return $\overline{R}$ X$\dfrac{\phi R}{n}$

X$\dfrac{0.8130}{7}$

X0.1161

X11.61 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{N\,Z1}}$ X$\sqrt{\dfrac{0.2289}{7\,Z1}}$ X0.1960

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{R}}}$ X$\dfrac{0.1960}{0.1161}$ X1.69

1.1.1.1 Appendix - IX

We have,

Expected rate of return $\overline{R}$ X $\dfrac{\phi R}{n}$

X$\dfrac{1.0405}{7}$

X0.1495

X14.95 *percent*

Standard Deviation ∃ = $\sqrt{\dfrac{\phi (R\, Z\, R)^2}{N\, Z1}}$ X $\sqrt{\dfrac{0.9766}{7\, Z1}}$ X0.4050

Coefficient of Variation, CV= $\dfrac{\dagger}{\overline{\overline{R}}}$ X$\dfrac{0.4050}{0.1495}$ X2.70

Appendix – X

We have,

Expected rate of return $\overline{R}$ X $\dfrac{\phi R}{n}$

X$\dfrac{1.9385}{7}$

X0.2769

X27.69 *percent*

Standard Deviation ∃ = $\sqrt{\dfrac{\phi (R\, Z\, R)^2}{N\, Z1}}$ X $\sqrt{\dfrac{0.3981}{7\, Z1}}$ X0.2585

Coefficient of Variation, CV= $\dfrac{\dagger}{\bar{\bar{R}}}$ X$\dfrac{0.2555}{0.2769}$ X0.9338

1.1.2 Appendix - XI

We have,

Expected rate of return $\bar{R}$ X$\dfrac{\phi R}{n}$

X$\dfrac{0.8148}{7}$

X0.1664

X11.64 *percent*

Standard Deviation $\exists = \sqrt{\dfrac{\phi (R\,Z\,R)^2}{N\,Z1}}$ X$\sqrt{\dfrac{0.5385}{7\,Z1}}$ X0.3007

Coefficient of Variation, CV= $\dfrac{\dagger}{\bar{\bar{R}}}$ X$\dfrac{0.3007}{0.1164}$ X2.5837

1.1.3

1.1.4 Appendix -XII

We have,

Expected rate of return $\overline{R} \times \dfrac{\phi R}{n}$

$\times \dfrac{1.0114}{7}$

$\times 0.1444$

$\times 14.44\, percent$

Standard Deviation, $\exists = \sqrt{\dfrac{\phi(R\,Z\,R)^2}{N\,Z1}} \times \sqrt{\dfrac{0.7882}{7\,Z1}} \times 0.3638$

Coefficient of Variation, CV$= \dfrac{\dagger}{\overline{\overline{R}}} \times \dfrac{0.3638}{0.1444} \times 2.5197$

1.1.5 Appendix -XIII

Under the H$_O$ test statistics, (t) is

$$t \, X \frac{\bar{x}_1 \, Z \bar{x}_2}{\sqrt{S^2(\frac{1}{n_1} \Gamma \frac{1}{n_2})}}$$

Where,

$\bar{x}$ = Average return of the portfolio of finance industry

$\bar{x}$ = Average return of market

n_1:n_2= No of observation

s^2= Estimated SD of the market portfolio

$$S^2 \, X \frac{n_1 \, s_1 \, \Gamma \, n_2 \, s_2}{n_1 \, \Gamma \, n_2 - 2}$$

$$X \frac{7 \mid 0.3007 \, \Gamma \, 7 \mid 0.3638}{7 \, \Gamma \, 7 \, Z \, 2}$$

$$X \frac{2.1049 \, \Gamma \, 2.4566}{12}$$

$$X 0.3876$$

Where,

S_1= S.D of the return of finance industry

$S_{2=}$ S.D of the return of market

$$t \, X \frac{\bar{x}1 \, Z \bar{x}2}{\sqrt{S^2(\frac{1}{n_1} \Gamma \frac{1}{n_2})}}$$

$$X \frac{0.1164 \, Z 0.1444}{\sqrt{0.3876(\frac{1}{7} \Gamma \frac{1}{7})}}$$

$$X \frac{Z 0.02800}{0.3327}$$

$$X \, Z 0.0841$$

$$t \ = 0.0841$$

The tabulated value of t for 12 degree of freedom at 10%, 5% and 1% level of significance are 1.782, 2.179, 2.6813 and 3.055 respectively. Decision: Since the calculated value of t is less than the tabulated value t_1 so the null hypothesis is accepted. In other words, the average rate of return of common stock of finance companies and average return of market portfolio are equal.

1.1.6 Appendix -XIV

We have,

$$\text{Cov }(Rj\ Rm)\ =\ \dfrac{\sum\limits_{j=1}^{n}(Rj\ -\ \overline{R}j)(Rm\ -\ \overline{R}m)}{n-1}$$

$$=\dfrac{0.3175}{7-1}$$

$$=0.0529$$

Now, Beta coefficient of stock PEFAL, $\beta_j\ =\ \dfrac{Cov(RjRm)}{\sigma^2 m}$

$$=\dfrac{0.0529}{0.1323}$$

$$=0.3998$$

Where,

$\sigma^2 m$ = Variance of market return= 0.1323

n= No of observation =7

Thus, the beta coefficient of PEFAL is 0.3998.

1.1.7 Appendix –XV

Under H_O, test statistics (t) is:

$$t = \frac{\overline{S}_{FI} - 1}{\dfrac{S}{\sqrt{n}}}$$

Where,

$\overline{S}_{FI}$ =0.8694= weighted average of the beta of finance companies (weight is taken on the basis of market capitalization of the finance companies at July 16, 2010).

S= 0.3483=Estimated population standard deviation.
n=10= No. of observations

Hence,

$$t = \frac{\dfrac{0.8694 - 1}{0.3483}}{\sqrt{10}}$$

$$X\frac{-0.1306}{0.1101}$$

$$X-1.186$$

$$t = 1.186$$

The tabulated value of t for 9(10-1) degree of freedom at 10%, 5%, 1% level of significance are 1.833, 2.262, 2.821, 3.250 respectively.

Decision: The calculated value is less then tabulated value which means Null hypothesis is accepted. It means that the portfolio beta of the common stock of the finance companies is equal to 1.