

CHAPTER-I

INTRODUCTION

1.1 General Background

Nepal is a developing country struggling with current state of Nepalese economy. The economy is characterized by unutilized natural resources mass economy, illiteracy, miserable agriculture, deficit trade, and so on. Although agriculture is the main livelihood, scientific method of agriculture has not yet been implemented. Although it is one of the richest country in the world in terms of natural resources, it should not utilize effectively. Its economy is unbecoming not because of lack of resources but inefficient utilization of resources, therefore, the proper plan and strategy should be developed for the efficient utilization of resources to enhance the growth of economy. The natural resources available here have remained unutilized due to various reasons. The living standard of people is very low poverty, misery and conflict are existed all around. While the country has been moving towards a market oriented economy since early 1990's frequent changes in government have hampered the realization of policy reform and delayed the implementation of development projects. It not only depends on availability of fund to fulfill the need of government and businesses but also of individuals. The private domestic investment is very essential for the economic growth as well as for employment generation for the developing country. The healthy economy can be made only through resource mobilization which is possible by the efficient collection of the scattered capital of the people and transfer of these capitals to the firms and individual who are in need to make investment on productive sector. Resource mobilization won't be fruitful only by collecting the scattered resources and making investment. For this, proper investment should be made for its productivity. Here investment management plays significant role.

In today's market consumers are treated as king and consumers are now quality oriented and they prefer qualities goods. Technological changes has made easier to give many new and surprising materials to the market. Organizations that do not have new technology cannot compete in the market. But technologies are very costly, so on organization should raise enough money to get the new technologies. Business institution if it is sole generally does not dare to get the funds finances because it is

very risky for a single person to bear unlimited liability; single person rarely has enough money to invest also. So business organizations are generally limited companies with many shareholders or sometimes partnership firms. Partnership firms also many times can't manage funds so in modern business, public limited companies are one and only one the alternate for investing huge amounts, advent of security market has successfully served the public limited companies to raise funds and then invest on the business. Every shareholder has limited liability up to his ownership amount only or the amount of shares he holds. Rest of the financing may be from financial institutions like Banks, Finance Companies etc.

Investment is differentiated with gambling, as it is the systematic and scientific way of using the excess fund to get the maximum return at minimum level of risk. Present investment is contribution to the future return. Investment is systematic and scientific way of using excess fund from income to gain expected return bearing lower level of risk. Common definition says that contribution of present value for future value is investment or it is search of certainty within the uncertainty. An investment is a commitment of money that expects to generate additional money. Every investment entails some degree of risk. It requires a present sacrifice for a future uncertain benefit. What motivates a person or an organization to buy securities, rather than spending their money immediately? The most common answer is saving. Another motivating issue is desire to increase wealth, i.e. make money grow. Sometimes, the desire to become wealthy can make you willing to take big risks. The simplest meaning of the investment is to employ available fund to generate more money in future. When investors make an investment, they expect the positive returns for bearing the certain level of risk. No one can get return without bearing risk. The investors said to be rational only when they earn maximum return at minimum risk. So risk and returns are the key factors to be considered while making investment. In order to minimize the risk at the given rate of return, rational investors invest in collection of investment securities called portfolio. Investors should have sound knowledge of portfolio management. Investment made in securities with different risk and return characteristics helps to diversify the risk by compensating loss occurred in one security by the return in another security. Portfolio is a financial tool of diversifying the risk.

A portfolio usually defined as a combination of assets or a collection of securities. Portfolio means the list of holdings in securities owned by an investor or institution (Oxford dictionary-new edition 1997). "A portfolio simply represents the practice among the investors of having their fund in more than one asset. The combination of investment assets is called portfolio. A portfolio is a collection of investment securities, portfolio theory deals with the selection of optimal portfolios, that is, portfolios that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return" (*Western and Copeland; 1992:4*).

1.1.1 Finance Companies in Nepal:

The Nepalese economy is based on agriculture, which accounts about 41 percent of the total GDP. About 86 percent of the total population is primarily engaged in agricultural sector. It still remains as one of the least developed countries with per capita GNP of US \$ 210 (1998) (*Upreti; 2000:2*)

"An improved financial system fosters the efficient mobilization of domestic savings and allocated resources to their optimum use. The financial institutions help to mobilize savings by issuing instruments as desired by the savers. Financial deepening, in its narrow sense; is the creation of more instruments, institutions and markets." (*Rimal; 1996:101*)

"In Nepal, the concept of financial institution was introduced when the first financial institution, Industrial Development Center was established in 1957. Later it was converted in Nepal Industrial Development Corporation in 1959 by special charter. Then after three financial institutions are established in 1992 under the company act 1964. They are NIDC Capital Market Ltd., Nepal Finance and Saving Co. Ltd. And National Finance Co. Ltd. Subsequently various financial institutions are established after then. And the people's participation in security investment and stock trading is increasing unexpectedly. Even though the investor do not have enough knowledge to invest in security". (*Upreti; 2000:4*)

As in case of other countries, the Nepalese financial system can be divided into two parts-banking and non-banking financial system. The banking system comprises of

central bank. Commercial banks and Development banks. The non-bank financial system comprises of Finance companies, cooperatives, Non Governmental Organizations are licensed to carry out financial business by the central bank. Beside these institutions, contractual saving institutions (Employees' Provident Fund, Insurance companies and Citizen Investment Trust), Credit Guarantee Corporation, Nepal Stock Exchange and Postal Saving System are also the activate participants in the Financial System.(*Nepal Rastra Bank, Bank and Finacial Institution Regulation Department*)

Economic status of our country is growing very slowly and Nepal is known as a very poor country all over the world. Development of financial institutions as mentioned above is essential for the rapid economic development of the country. Although, being an agricultural dependent country, the non-agricultural sectors should be given priority. This will help not only to solve the problems of employment but also in the economic development of the nation. Only the establishment of industry is not sufficient but successful operation is also necessary. For successful operation, every industry and organization needs finance. The success and failure of business and industry widely depends on the crucial decisions made by the top management relating to the management of fund. Capital structure decision is one of the most crucial complex areas of financial decision making area relating to the management of fund, due to its interrelationship with other financial decision variables.

A financial institution collects the funds in term of deposits and extends loan and advances to various sectors. The main sources of funds besides equities are saving and time deposit collection and issuance of debentures. The collected funds or sources are invested in those areas, which are generally ignored by the commercial banks (i.e. housing finance, consumption loans etc). Therefore, finance company can be considered as complimentary to commercial banks.

In the Nepalese context, non-banking financial institutions include all the financial institutions except commercial banks and development banks. They include finance companies, insurance companies and other similar institutions directly or indirectly involved in mobilizing financial resources. This study will try to confine discussing,

particularly, on non-banking finance companies, operating in Nepal and will not approach to discuss other form of such institutions.

Simply, Finance Company means an institution dealing with non-banking activities. It is established with the objective of collecting the scattered capital in purchase of consumer's durables. They specialize in consumer lending to individuals and secured lending to business. The power is called consumer finance and the latter called commercial finance companies. They also include other types of lending-financing for example leasing finance, home equity loans for hire purchase, etc.

In Nepal, non-banking sector has noticed market growth in recent years in terms of their numbers and deposit base due to the competitive and dynamic financial system. Considering the lending importance of finance companies and being the part of financial system, NRB has framed suitable policies for their establishment. Especially after economic liberalization in the country increment in financial services as an essential part of the financial system and accordingly it focus its attention to ensure that:

Finance companies on their business in conformity with overall framework of monetary and credit policy.

They function on sound, solvent and healthy ways in order to be at the position to meet their liabilities to the depositors and their creditors as when the claims occurred. In past, there were few banks like NBL, RBB and NRB as the major bank of Nepal, so there was lack of practice in a banking field so HMG introduced the concept of finance company just half of decade ago. Within this short period of time, there has been number of finance companies established for the economic development of country. HMG brought 'Bitta Company Act 2042' and first finance company "Nepal Finance and Saving Company Limited" established in the year 2049.(www.nrb.gov.np)

At present nearly 50 numbers of the finance companies are operating in Nepal. Most of them are engaged in the hire purchase finance either for vehicle or for consumer appliances. These companies lend money to people who promise to repay the loan

with interest over a specified period of time. Borrowers are required to offer some guarantee against the loan they get such as loan on their salary or personal possession. Besides lending money, they also accept deposits from the general public. Certain rate of interest is provided to the customer for the deposit made in the company. These deposits are invested. They lend same money in higher interest and paying lower interest so that they manage to make some profit to distribute divided to the shareholders.

Finance company is specialized financial institution that supplies credit for the purchase of consumer goods and services by purchasing the time-sales contracts of merchants by granting small loans directly to consumers. The finance companies also play crucial role as a broker of the loan able funds. They act as the intermediaries between the ultimate savers and ultimate investors. These institutions have a number of economics of specialization and scale in mobilization of saving and making investments.

1.1.2 Major Activities Performed by Finance Companies are:

1. Fund Based Activities

-) Leasing and hire purchase
-) Bill discounting
-) Loans
-) Floating mutual funds

2. Non-Funds Based Activities:

Investment management, portfolio management, services for individuals and corporation, insurance management, underwriting, trust receipt, arranging trading market for buying and selling securities, private placement of shares and debentures, etc.

In practice, most of the finance companies are funds based. Finance companies are also important player in 'Nepali Capital Market' investing over 10% of their funds in shares and government bonds.

Under the present regulatory regime, the NRB's non-banking operating unit supervises the finance companies in perspective of their activities as deposit taker and lender. The finance companies have to be registered with the security bond and

Nepal Stock Exchange. They have to provide related financial information to central bank regularly.

The main activity of finance company is to approve deposit and invest same amount as loan. However, it has also been investing in the following activities.

-) Government securities
-) Share and debentures of company
-) Stock in trade

To eliminate the risk and enjoy the return the investor should follow the systematic investment process. "The investment process describes how an investor makes decisions about what securities to invest in, how extensive these investment should be, and when they should be made. A five-step procedure for making the decision forms the basis of the investment process." (*Sharpe AlexanderBelley; 1995:177*)

The first step of the investment process is to set the investment policy. It involves determining the investor's objectives and the amount of his or her invest able wealth. Investor's objectives should be stated in terms of both risk and return. The second step of the investment process is to perform security analysis. It involves examining a number of individual securities (or groups of securities(within the broad categories of financial assets. The purpose for conducting such examinations is to identify those securities that currently appear to be misplaced. The third step of the investment process is construction of portfolio. Construction of portfolio involves identification of specific securities in which to invest, along with the proportion of investible wealth to be put into each security. The fourth step of the investment process is portfolio revision, which involves both realizing that the currently held portfolio performance evaluation. It involves determination of the actual performance of a portfolio in terms of risk and return, and compares the performance with that of an appropriate 'benchmar' portfolio.

The behavior of stock price and the relationship between risk and return in financial market has long been of interest to researchers. Many interesting an exemplary researchers have been carried out to this regard in the developed capital market. In

recent year finance companies with new financial instruments and innovation are highly needed on the county. This will provide investment opportunities to the small and medium savers. Financial sector is the dynamic part of economy that collects unused funds and mobilizes it in needed areas. It is very important for trade industry and commerce. One of the leading sectors, stock market has become a global phenomenon even in the least develop country like Nepal that plays vital role in the development of national economy. In the capitalistic market. Stock market is not only for the justification for encouragement on the ideological background but also required for the natural expansion and/or progress of the development of financial sector of a nation.

The role of finance companies have been instrumental in the overall economic development of the country. They help to pool utilize resources, reduce costs and risks, expend and diversify opportunities, increase the allocate efficiency of resources; promote the productivity and economic growth. These are the main part of economy of the nation.

1.2 Focus of the Study

Risk and return of common stock is the major factors, which helps in making decisions about investment on securities of the companies. So the study is based on the risk and return of common stock investment: special reference to finance companies in Nepal. There are 50 listed finance companies in Nepal. But it is not possible to cover all the finance companies. So five finance companies have been chosen. The study is focused on the risk and return of common stock followed by five chosen companies, which will represent all the finance companies of Nepal.

1.3 Statement of the Problem

Recent trend shows that the general people are interested to invest their small money on the common stock of financial institutions like commercial banks and financial companies. But die to lack of proper information about market status and situation and poor knowledge, market intermediaries take advantage in investors. Some times they think that investing I common stock is intolerably hazardous. Due to this, many investors afraid to invest into stocks. This is the main problem that does not allow gearing up the capital market of the nation. The main problem for the individual

investors are lack of proper information about market whereas the problem for financial sector to enhance the goodwill among the utilize public funds properly. The investors are responsible to make rational investment decision. For this rational analytical knowledge is essential. The investor's attitude and perception also plays a vital role in making decision regarding whether the investment should be made or not.

In Nepal collapses of some of the finance companies due to improper mobilization of public funds create real investor hesitation while investing in common stock. Previous research shows that most of investors invest their funds in a single security rather they can be benefited by investing in portfolio of securities and achieving diversification of risk. The main problem is that the general public cannot perfectly analyze the risk and return analysis of common stock of financial companies. Common stock does not guarantee for annual nor does it ensure forth return of price of stock thus is considerably risky. Hence it needs courage and at the same time faith of invest in common stock. In most of the time which can be generated through proper evaluation with giving view to the prevailing market atmosphere. The present study seeks to explore the answers to the following questions.

1. How far the extent of the volatility of the mean return of the common stock and the relationship among the market price of share, DPS and EPS is maintained.
2. How the investment decisions are to be taken?
3. To what extent there is systematic risk in relation to total risk?
4. What are the criteria for evaluation that the stock they are holding will give them a favorable return?
5. Does the risk and return of common stock investment of financial companies vary significantly?
6. Would portfolio construction within the finance companies be profitable.
7. How can investors diversify the risk within the financial companies?

These are the burning issues that has influenced researcher to carry out this study. Investment on common stock is the main sources of fund for the companies. The investors are the sources of revenue as a customer for the stock stockbrokers and financial institutions and ultimately they are the backbone of economic development

of the nation. So every policy and plan of financial institutions and government also have to encourage them to invest on common stock. For this there is great need of such institutions, which can give valuable information that accelerated the stock investment and market efficiency.

1.4 Objectives of the Study

The main objective of the study is to analyze the risk, return and other relevant variables of common stock investment of Nepalese Finance Companies that help in making decisions about investment on securities of the companies. The specified objectives of the study areas follows:

-) The examine the movement of market price of common stock in terms of risk and return and to execute sector wise comparison on the basis of market capitalization.
-) To evaluate common stock of finance companies in terms of risk and return.
-) To determine whether the shares of finance companies in Nepal are overpriced or under priced by analyzing the risk and return characteristics of the individuals shares.
-) To evaluate the systematic and unsystematic risk associated with security under study.
-) To calculate risk and return on different portfolios

1.5 Significance of the Study

Opened economic policy of the government encouraged the established of the finance companies. As result the people's participation in security investment and stock trading is a increasing unexpectedly. The recent trend and people's attitude towards common stock investment shows that there is a high potentiality in stock investment, which result an increase in economic activity. It is important to increase financial and economic activities of the nation.

The analysis of risk and return is a significant managerial decision fro the viewpoint of investors. It influences the shareholders risk and return. Consequently, the risk and return analysis influences the market price of the stock, by making it at an appropriate level. Thus this study has tried to fulfill the need in this aspect. The study may also

help for interested researchers in the area of investment on common stock and risk and return management.

Apart from above, this study will be a matter of interest for a academicians, students and practitioners.

1.6 Hypothesis Test

Following hypothesis are tested in this study:

1.6.1 Hypothesis-I

Null Hypothesis (Ho)

There is no significance difference between the portfolio return of the common stock of finance sector and overall market return.

1.6.2 Hypothesis-II

Null Hypothesis (Ho)

There is no significant different between the portfolio beta of financial sector and market bets. In other words, portfolio beta of finance company is equal to 1 (i.e. market beta)

1.7 Limitations of the Study

This study is basically based on secondary data. Similarly this study covers a period of eleven years i.e. from 1996/97 to 2006/07. Therefore, there are some limitations of this study, which are as follows:

1. In this study NEPSE is taken as basic sources of data.
2. The study id based on the performance of fiancé companies for the period of eleven years started from fiscal year 1996/97 to fiscal year 2006/07.
3. Financial and time constraints: this study will be fully based on the student's financial resources and is to be completed within the limited time.
4. The research result is based upon the secondary data only.

1.8 Organization of the Study

The report will be presented in five chapters, viz, introduction, review of literature, research methodology, data presentation and analysis, summary, conclusion and recommendation:

Chapter 1 Introduction:

The first introduction chapter deals with subject matter of the study. This chapter consists of introduction, statement of the problem, focus of the study, objective of the study, significance of the study, statement of hypothesis, limitation of the study, organization of the study itself.

Chapter 2 Review of related literature

The chapter consists concept of investment, common stock (return and risk), relationship between risk and return, statistical measure of risk, diversification, portfolio analysis (portfolio risk & return), systematic and unsystematic risk, capital assets pricing model, validity and role of capital assets pricing model and review of thesis and article.

Chapter 3 Research Methodology Used

Methodology used for the purpose of study in this chapter explains research design, source of data, population and sample, sources of data, data collection techniques, financial and statistical tools used.

Chapter 4 Data Analysis and Major Findings

This chapter analysis the risk and return of each selected company's common stock and their comparison are also made with industry risk and return. Five assets portfolio are also constructed to see the impact of portfolio.

The final and last chapter contains the summary of the whole study. Conclusions of this study have been presented and at last suitable and concrete measures are suggested in the form of recommendations.

This chapter is followed by Bibliography and appendixes.

CHAPTER-II

LITERATURE REVIEW

The review of literature is a crucial aspect of planning of the study. Basically it is a 'stock taking' of available literature in one's field of research.

“The purpose of reviewing the literature to develop some expertise in one's area to see what new contribution can be made, and to receive some ideas for developing a research designs. The previous studies cannot 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 Framework:

Sekaran (1992) describes conceptual framework, as is the foundation on which the entire thesis is based. This study explores the theoretical aspect of the risk and return on investment from various popular related books. Analyzing the risk and return gives knowledge about the relationship between risk and associated return on any kind of investment. It also includes the review as well as background of finance company in Nepal.

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 attributes are generally involved time and risk. The reward comes later, if at all, and the magnitude is generally uncertain.” (*Francis; 1997:101*)

There are basically three concepts of investment.

Economic Investment: i.e., and economist's definition of investment.

Investment in a general or extended sense, which is used by 'the man of the street'.

“The sense in which it is going to be very much interested namely financial investment.” (*Bhalla; 2000:3*)

Investment can be made of real assets. Investment on real assets is known as real investment and on financial assets is known as financial investment. Real investment means investment on real assets like lands, buildings, and factory etc. Financial

investment means the investment on financial assets like shares, debentures, warrants, convertibles etc.

“Real investment generally involves some kind of tangible assets such as land, machinery or factories. Financial investment involves contracts written on pieces of paper such as common stocks and bonds. In primitive economies, most investment is of the real variety, where as in a modern economy, much investment is of the real variety.”(*Francis; 1997:1*)

“An investment is the current commitment of money or other sources in the hope of reaping future benefits.”(*Zve, Alea and Alan; 1993:2*)

Setting Investment Decisions

The ultimate decisions to be made in investment are

What securities should be held?

How much amount should be allocated to each?

These decisions are normally made, in two steps. First estimates are prepared of the return and risk associated with available securities over a forward holding period. This step is known as security analysis. Second, return-risk estimates must be compared in order to decide how to allocate available funds among these securities on a continuing basis. This step comprises portfolio analysis, selection and management.

“This alternative investment falls into eight major categories:”(*Chency and Moses; 1992:8*)

Equity Securities

Short-Term Debt Securities

Intermediate & Long Term Debt Securities

Hybrid Securities

Derivative Securities

Real Assets

International Investment &

Other Investment Alternatives.

Among various investment alternative, the present study concerns with the common stock investment only.

The review of the study is based on the common stock investment. Therefore, main focus is given on it.

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 shareholders must be paid as scheduled before common stockholders can receive any payment. In bankruptcy, common stockholders 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; 2000:154*)

“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 stockholder 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 e dividends and, ultimately, capital gains.”(*Lawrence; 1985:210*)

“Common stock is the first security of a corporation to be issued and, the event of bankruptcy, the last to be retired. When investors buy common stock, they receive certificate of ownership as a proof of this being part owners of the company. The certificate states the number of share purchased and their par value.”(*Bhalla; 2000:196*)

As owner, common stockholders are entitled to certain rights and privileges. There are controls, Preemptive Right, Liquidation Rights and Right to Income and distribution of additional shares. Similarly, the common tock value are quite different and in some

cases, the dollar amounts of these values are not related for an individual stock. The common stock values include par value, book value and market value.

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. Security market exists in order to bring together buyers and sellers of securities. It means the market where the securities are traded. One of the main functions is “Price discovery” i.e. To cause prices to reflect currently available information.

Security market can be distinguished into

-) Primary and secondary Market
-) Money and Capital Market

Primary Market

Security offered for the first time to the general public through the primary securities markets. The issuer may be a brand new company or one that has been in business for many years. 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 networks 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 government securities, inter-bank deposits, banker’s acceptance, certificate of deposit 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 funds collected in this market are raised and traded by long-term financial instrument such as equities and bonds. From the capital market, the maturity preference of lender and borrower is adjusted. The lender can immediately get cash in case of need and borrower also receives long-term credit.

2.1.4 Market Price of the Share

Market price of Shares as the output of the demand and supply interaction is the most influencing factor in determining the price of the stock." In relation to the interacting forces of demand and supply i.e. Market Price is determined at given time and the prices and volumes of its past transaction are meaningful indication of probable relationship of future supply and demand pressure. And such relationship is the most important element in determining the probable direction of the price movements. If the demand exceeds the supply, the price will rise and if the supply exceeds the demand the price will fall.

2.1.5 Profit Maximization or Wealth Maximization

"In the past, profit maximization was regarded as the only objective of business firms but in modern time, a firm has multiple objectives though some objectives may receive priority over other objectives. It is a rational behavior of the firm to maximize the profit. The financial manager should select the alternative having maximum monetary return. Profit maximization objective is short run objective whereas wealth maximization objective is long run objective of the firm. When the time period is short and uncertainty is not much, profit maximization and wealth maximization are almost same. The wealth of the shareholders is measured by the share price of the stock. The share price depends on the timing of returns, cash flow and risk. Generally the value or wealth can be expressed more explicitly in following ways".(Pandey; 1991:56)

$$W = \frac{A_1}{(1+K)} + \frac{A_2}{(1+K)^2} + \frac{A_3}{(1+K)^3} + \dots + \frac{A_n}{(1+K)^n} + ZC$$
$$= \sum_{t=1}^n \frac{A_t}{(1+K)^t} + ZC$$

Where,

A_1, A_2, A_3, A_n = Stream of benefit expected to occur a course of action is adopted.

C = Cash outlay or cost of action

K = Discount rate

W = Value or worth

But the value of the company does not increase itself; there re a number of factors that may contribute to increase the value. The value is represented by the market price of the company's common stock, which in turn reflects the firm's investment strategy, and dividend decisions. So, to maximize of the stock, the financial manger should consider following factors.

-) Project earning per share
-) Timing of the earning stream
-) Use of debt
-) Divided policy

Hence, the wealth maximization principal implies that the fundamental objective of a firm should be to maximize the market value of its shares.

2.1.6 Stock Valuation

"Financial managers 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 models are used to value stock".(Pike and Neale; 1996:21)

Table: 2.1
Stock Valuation Model

S.No.	Model	Valuation Model
1	NAVM	$NW=TA-(CL+LTD)$
2	DVM	$P_0 X \sum_{t=1}^n \frac{D_t}{(1+K_e)^t}$
3	EVM	$P_o = P/E \text{ ratio} \times \text{EPS}$

(Source: Pike and Neale; 1996:76)

Where,

NAVM = Net Asset Value Model

P_o = Value of the stock today

DVM = Dividend Value Model

D_1 = Dividend Expected in year 1

EVM = Earning Valuation Model

K_e = Cost of Equity Capital

NW = Net Worth

$t = 1, 2, 3, n$ yr.

TA = Total Asset

P/E = Price earning ratio

CL = Current Liabilities

EPS = Earning per share

LTD = Long Term Debt

2.1.7 The Expected Rate of Return on Common Stock

Theoretically, if an investment is to be made, the expected rate of return or the expected holding period return should be equal or greater than the required rate of return for that investment. Actually, return on a typical investment consists of two components. The basic component is the periodic cash receipt (or income) on the investment, either in the form of interest or dividends. The second component is the change in the price of the asset—commonly called the capital gain or loss.

The element of return is the difference between the purchase price at which the assets can be or is sold; therefore it can be a gain or loss. Thus, the cash payoff to owners of common stocks comes in two forms:

Cash dividend

Capital gain (loss)

Some definitions are, 'The single period rate of return concept is important because it measures the speed at which the investor's wealth increased or decreased.' An investment's single period rate of return, denoted r , is simply the total return an investor would receive during the investment period of holding period stated as percent of the investment's price at the start of the holding period.

$$R = \frac{\text{Ending wealth} - \text{Beginning wealth}}{\text{Beginning wealth (or purchase price)}}$$

An investor can obtain two kinds of income from an investment in a share of stock or a bond:

Income from price appreciation (or losses from price depreciation), sometimes called capital gains or losses. This quantity is denoted by $(P_t - P_{t-1})$

Cash flow income from cash dividend or coupon interest payments, represented by the convention D_t .

The sum of these two sources of income (or loss) equals the change in the invested wealth during any given holding period.

For common stock, we can define one period return as:

Where,

R_j = Actual (expected) return when it refers to a particular times period in the past (future).

P_t = Market price at end of period t-1

P_{t-1} = Price at end of period t-1

D_t = Cash flow income (dividend) received during the Tth year

$P_t - P_{t-1}$ = Income from price appreciation (or losses from price depreciation), called capital gain or loss.

“Above formula can be used to determine both actual one-period return (when based on historical figures), as well as expected one period returns (when based on expected dividend & prices). The term in parenthesis in the number of above equation represents the capital gain or loss during the period.”(Van Horne and Wachowicz; 1996:90)

If investors are risk averse, they must be compensated for taking on risk. Thus, the market must yield a higher expected return than risk less to hold risky securities prices. Thus, in a market dominated by risk-averse investors there must be a positive relationship between risk and expected return to achieve equilibrium. The expected return on a risk less security (e.g., Treasury bill) is the risk-free rate. The expected return on risky securities can be thought of as this risk-free rate plus a premium for risk.

$R_s = R_f + \text{Risk Premium}$

Where,

R_s = Expected return in a security

R_f = “Risk free rate”(Butters,Fruhan,Mullins and Piper; 1981:144)

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

Simple Arithmetic Mean

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

The Geometric Mean

$$HPR_g = \left(\prod_{t=1}^n HPR_t \right)^{\frac{1}{n}}$$

Where, HPR "Holding Period Return, n=No. of periods , HPR_g=Geometric Mean holding period return." (*Cheney and Moses; 1992:746*)

2.1.8 Risks on Common Stock

Risk, in simple world, is an uncertainty. Risk and uncertainties are the facts of life so to the common stockholders. 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 represents 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 indicates the probability of returns being less than the expected value—higher the probability of such loss or less returns, 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 behaviour depends upon whether the utility of wealth to an individual investor increases decreases or remains unchanged as wealth increases. 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 increases. The following figure illustrates utility functions for three types of behavior.”(Pradha;1992:262)

Figure: 2.1

Risk Function

Risk Function

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

Interest rate risk

Interest rate risk is potential variability of return caused by changes in the market interest rate. If market interest rates rise, then, investments' 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 prices of bonds, stock etc.

Purchasing power risk

Purchasing power risk is the variability of return an investor suffers because of inflation. When inflation takes place, financial assets such as cash, stocks, bonds etc. may lose their ability to command the same amount of real goods and services they did in the past. The real rate of return on financial assets may not adequately compensate the holder of financial assets for inflation.

Bull-Bear Market Risk

When a security index rises fairly consistently from a low point for a period of time, this upward trend is called a bull market. The bull market ends when the market index

reaches a peak and starts a downward trend. The period during which the market decline to the next trough is called a bear market.

Management Risk

Though many top executives earn princely salaries, occupy luxurious offices, and wield enormous power within their organizations, they are mortal and capable of making a mistake or a poor decision. Furthermore errors made by business managers can harm those who invested in their firms. Hence, it also is capable of posing risk to investment.

Default Risk

Default risk is the portion of an investment's total risk that results from changes in the financial integrity of the investment. For instance, when a company that issues securities moves further away from bankruptcy or closer to it, these changes in the firm's financial integrity will be reflected in the market price of its securities. The variability of return that investors experience as a result of changes in the creditworthiness of a firm in which they invested is their default risk.

Liquidity Risk

Liquidity risk is the portion of an asset's total variability or return that results from price discounts given or sales commission paid in order to sell the asset without delay. Perfectly liquid assets are highly marketable and suffer no liquidation costs. Liquid assets are not readily marketable-either price discounts must be given or sales commission must be paid, or both of these costs must be incurred by the seller.

Political Risk

The portion of an asset's total variability of return caused by changes in the political environment that affect the asset's market value.

Industry Risk

An industry is a group of companies that compete with each other to market a homogenous product. Industry risk is that portion of an investment's total variability of return caused by events that affect the products and firms that make up an industry.

2.1.9 Relationship Between Risk and Return

The relationship between risk and return is described by investors' perception about risk and their demand for compensation. Those investors who can tolerate higher levels 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 premium, & the trade off between the two assumes a linear relationship between risk and risk premium.

“The observed difference 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 must offer investors high returns 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 returns in the same level of risk class are readily available.

Risk and return relationship can be shown by following figure:

Figure: 2.2
Relationships between Risk and Return

Relationship between Risk and Return

"The above figure 2.2 represents a higher return for higher risk in a linear fashion indicating a premium of R1 for $\exists 1$ degree of risk, R2 for $\exists 2$ and so on. Under the assumption of a linear relationship, the risk, premium increases or decreases in proportion to a change in the level of risk."(*Pradhan; 1992:261*)

2.1.10 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 investments.

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

While the measurement of return is a simple statistical process, the measurement of risk involves a complex process. In using various statistical techniques such as range, variance etc, and risk can be measured. Among them, the satisfactory describes the description of the outcomes around the mean value is the analysis of variance (and

standard deviation). Standard deviation is widely used as a measure of investment risk, which estimates the extent to which the actual outcome is likely to diverge from the expected outcome. The greater the standard deviation of returns, the greater the risk of the investment.

The standard deviation can be expressed mathematically as:

Where,

\exists = Standard deviation of the distribution of returns on n stocks

R_i = Rate of return on I stock

\bar{R}_i = Expected rate of return of I stock

P_i = Probability of i stock

n = Number of stocks

A return distribution standard deviations turns out to be rather versatile risk measure. It can serve as an 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.

Mathematically,

$$\text{Coefficient of Variation (C.V)} = \frac{\exists}{\bar{R}}$$

Where,

\exists = Standard deviation

\bar{R} = Expected rate of return

"If rate of return should increase as the risk increase, the C.V. provides a quick summary of the relative trade-off between expected return and risk."(*Cheney Moses; 1992:41*)

Thus, the coefficient of variation is a measure of relative dispersion (risk) measure of risk "per unit of expected return. The larger the C.V, 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 Wachowicz; 1996:94*)

"If rate of return should increase as the risk increase, the C.V provides a quick summary of the relative trade-off between expected return and risk." .(*Cheney Moses; 1992:41*)

2.1.11 Diversification

Simply, Diversification means the process of adding securities to a portfolio in order to reduce the portfolio's unique risk and, thereby, the portfolio's total risk.

"Diversification is an additional strategic device in the financial manager's armory of weapons for dealing with risk. The ideal form of diversification is to engage in activities which behave in exactly opposite ways."(*Pike and Neale; 1996:27*)

"Investment positions are undertaken with the goal of earning some expected rate of return. Investors seek to minimize inefficient deviations from this expected rate of return. Diversification is essential to the creation of an efficient investment because it can reduce the variability of return around the expected return."(*Francis; 1997:228*)

Meaningful diversification involves combining securities in such a way that will reduce risk. Risk reduction occurs only as long as the combined securities are negatively correlated. That means, by combining securities of low risks with securities of high risks, success can be achieved by an investor in making a choice of investment outlets.

"Portfolio's risk can be reduced to some extent by different diversification technique."(*Francis; 1997:228*)

Simple Diversification:

The simple diversification would be able to reduce unsystematic or diversifiable risk. Simple diversification can be defined as "not putting all the eggs in one basket," and "spreading the risks". It means simple diversification reduces a portfolio's total diversification risk to zero and only the undiversifiable risk remains. Simple

diversification is the random selection of securities that are to be added to a portfolio. Simple diversification was analyzed using random selections and equal weighting to simulate the techniques a naïve investor might employ. But this naïve technique to implement does not nullify its ability to reduce risk in a diversified.

Diversification Across Industries

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

Superfluous Diversification

Further distribution of the portfolio's assets is superfluous diversification and should be avoided. If 10 or 15 different assets are selected for a portfolio, the maximum risk reduction benefits from simple diversification have most likely been attained.

Simple Diversification Across Quality Rating Categories

Simple diversification reduces risk within categories of stock that all have the same quality rating. Quality rating measures default risk-essentially, the risk of bankruptcy. The highest-quality rating portfolio of randomly diversified stocks was able to achieve lower levels of risk than the simply diversified portfolio of lower quality stocks. This result reflects the facts that default risk (as measured by the quality rating) is part of total risk.

Markowitz Diversification

Markowitz- diversification is the combining of assets, which are less than perfectly positively correlated in order to reduce portfolio risk. It can sometimes reduce risk below the undiversifiable level. Markowitz diversification is more analytical than simple diversification and considers assets' correlations (or covariance). The lower the correlation between assets, the more than Markowitz diversification will be able to reduce the portfolio's risk.

“He developed the basic model, in order to construct efficient portfolio that maximizes the expected return at any given level of risk. The portfolio model developed by Markowitz is based on the following reasonable assumption.”(*Chency and Moses; 1992:12*)

The expected return from an assets is the mean value of probability distribution of future returns over some holding period.

The risk of an individual assets or portfolio is based on the variability of return (i.e. the standard deviation or variance).

Investors depend solely on their estimates of return and risk of making their investment decisions. This means that an investor’s utility (indifference) curves are only a function of expected return ad risk.

Investors prefer assets with the some expected return investor prefer lower to higher risk.

“There are an infinite number of possible portfolios to the investor, but that the investor needs to be concerned with only those portfolios that are on the efficient set. However Markowitz’ efficient set is a curved line, which means that there are an infinite number of efficient portfolios. How can Markowitz’s approach be used f an investor needs to identify the composition of an infinite number of portfolios? Fortunately, there is no need to despair. Markowitz saw this potential problem and in a major contribution, presented a method of solving it. It involves the use of quadratic programming algorithm known as the critical line method.”(*Sharpe, Gorden, Alexnder and Belley; 1995:220*)

2.1.12 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.

Portfolios, which are combination of securities, may or may not take on the aggregate characteristics of their individual parts.

"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 Portfolios:

Primary Objectives

To maximize return

To minimize risk

Secondary Objectives

Regular return

Stable income

Appreciation of capital

Ever liquidity

Easy marketability

Safety of investment

Tax benefits

"An investor's portfolio is the set of individual common stocks, bonds, option future contract, real estate, diamonds, cash, gold, saving account and other assets the investor owns. It is usually better to invest in a portfolio than in a single security because of the risk reducing benefits of diversification. Investing all of your funds in single security is advisable only if you are absolutely sure that the security's future performance will be rewarded on if you are willing to gamble your entire investment on the success of a single risky assets."(*Francis; 1997:228*)

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

2.1.12.1 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:

$$\bar{R}_p = \sum_{i=1}^N W_i R_i$$

Where,

\bar{R}_p = The expected return of the portfolio

R_i = The expected return of security i, and

W_i = The proportion or weight of two funds invested in security i

N = Total no. of different securities in the portfolio

Because a portfolio's expected return is a weighted average of the expected returns of its securities, the contribution of each security to the portfolio's expected return depends on its expected return and its appropriate share of the initial portfolio's market value.

2.1.12.2 Portfolio Risk

The degree to which the assets' return move together is measured by the covariance or correlation coefficient. The Correlation however has no effect on the portfolio expected return. Correlation between security returns has no effect on the portfolio expected return. Correlation between security returns complicates 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:

$$\sigma_p = \sqrt{\sum_{i=1}^N \sum_{j=1}^N W_i W_j Cov_{ij}}$$

Where,

N = Total number of different securities in the portfolio

W_i = Proportion or total funds invested in security i

W_j = Proportion or total funds invested in security j

Cov_{ij} = Covariance between possible return for securities i & j

"The covariance of the possible returns of two securities is a statistical measure of the relationship between two random variables. The is, it is a measure of how two random variables move together".(Sharpe and Alexander;1995:176)

The covariance between two securities i. and j can be written as below.

$$Cov_{ij} = r_{ij} \sigma_i \sigma_j$$

Where,

r_{ij} = The expected correlation coefficient between possible returns for securities i and j

σ_i = Standard deviation for security i

σ_j = Standard deviation for security j

When $i=j$, the correlation is 1.0 as a variable movement correlate perfectly with itself and $r_{ij}, \sigma_i, \sigma_j = \sigma_i^2$.

The correlation coefficient lies between "-1" and "+1". A value of "-1" represent perfect negative correlation, which indicates that the returns from two securities generally move in opposite direction. A value of "+1" represents perfect positive correlation, which implies that the returns from two securities generally move in the same direction. A "0" correlation coefficient implies that return from two securities are uncorrelated; they show no tendency to vary together in either a positive or negative in linear fashion. Generally most cases lies between "-1" and "+1".

Correlation between two different securities provides the possibility to eliminate some risk without reducing return. Lesser the correlation higher the reduction in portfolio risks.

Most stocks returns tend to move together but not perfectly. Therefore the correlation coefficient between two securities is less than "1". As long as the correlation coefficient between two securities is less than "1", the standard deviation of the portfolio will be the weighted average of the two individual standard deviation. Hence, everything else being equal.

2.1.12.3 Systematic And Unsystematic Risks

Systematic risk has its 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 asset's required rate of return relative to the systematic risk of the stock. Unsystematic (company specific/unique) 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

$$\text{or, } \sigma_j^2 = \rho_{jm}^2 \sigma_m^2 + \sigma_e^2$$

$$\text{or, } \sigma_j^2 = \beta_j^2 \sigma_m^2 + \sigma_e^2$$

In this equation ρ_{jm} 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. Betas can be used for a ranking of the systematic risk of assets. An asset with $\beta=1$ is moderate asset because market portfolio and asset's return is equal. An asset with $\beta > 1$ is an aggressive asset because it is more volatile than the market portfolio. If an assets has a $\beta < 1$, the asset is defensive asset and the response of the asset will be less than that 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 factors affecting the prices 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 uncertainty surrounding the ability of the issuer to make payments on securities seems from two sources: (1) The operating environment of the business, and (2) the financing of the firm. These risks are referred to as business risk and financial risk,

respectively. They are strictly a function 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 aspects and implications of business and financial risk.”(Fisher and Ronald; 2002:74)

2.1.12.4 The Systematic Risk As Measured by Beta

The beta coefficient is an index of systematically risk. Beta coefficients may be used for ranking the systematic risk of different assets. If the beta is larger than 1, $b > 1.0$, then the assets are more variable than the market and is called an aggressive asset. If the beta is less than one, $b < 1.0$, the asset is a defensive asset; its price fluctuations are less volatile than the market's.

Beta coefficient can be obtained for actively traded stocks from published sources.

$$S_j = \frac{\text{Cov}(R_m, R_j)}{\text{Var.}(R_m)} = \frac{\text{Cov}(R_m, R_j)}{\sigma_m^2}$$

The term $\text{Var}(R_m)$ represents the variance of returns for the market portfolio, and $\text{Cov}(R_j, R_m)$ denotes the “Covariance” of return of the ‘j’ asset with the market and the $\text{Cov}(R_j, R_m)$ gives by:

$$\text{Cov}(R_m, R_j) = \frac{\sum_{j=1}^n (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n}$$

“The beta coefficient S_j is used to measure non diversifiable risk. It is an index of the degree of movement of an assets return in response to a change in the market return. The beta coefficient for an can be found by examines the market on the portfolio of all traded securities. The beta coefficient for the market is considered to be equal to 1.0. All other betas are viewed in relation to this value. Assets beta's may take and values that are deal positive, but the positive betas are the norms. The majority of beta coefficient for between 0.5 and 1.0”(Cheney and Mosses; 1992:227)

“The portion of total risk that is not explained by an assets characteristics regression line is called unsystematic risk. Unsystematic variability is unique to each assets. Unsystematic fluctuations in a security's price are diversifiable because they occur in

an idiosyncratic fashion that makes them statistically independent.”(Francis; 1997:284)

2.1.13 Capital Assets Pricing Model (CAMP)

This model was developed by William Sharpe (1990 Nobel Prize in Economics) and John Linther in the 1960’s and it has important implications for finance ever since. While other models also attempt to capture market behavior, the capital assets pricing model is simple in concept and has real-world applicability.

“CAMP is a model that describes the relationship between risk and expected (required) return. In this model a security, expected (required) return is the risk-free or return plus a premium base on the systematic risk of the security.

The models:

$$K_j = R_f + \beta_j (\overline{R_m} - R_f)$$

Where,

K_j = the required rate of return for stock j,

R_f = the risk free rate,

$\overline{R_m}$ = the expected return for the market portfolio, and

β_j = 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 returns on the market portfolio. The beta of a portfolio is simply a weighted average of the individual stock betas in the portfolio.”(Vanhorne; 1996:101)

“The key assumptions of CAMP thus presented may be summarized as follows:

-) No transaction costs, taxes or indivisibilities.
-) All market participants (firm and investors) are atomistic competitors.
-) Single investment period, uncertain world.

Investors make investment decisions on the basis of portfolio expected returns and standard deviations of returns.

Expectations are homogeneous.

A risk-free assets exists, available to all borrowing and lending.”(Jacob and Pettit; 1984:321)

"The CAMP is represented mathematically by the formula below:

$$E(r_j) = R_f + \beta_j (E(r_m) - R_f)$$

β_j is the independent variable representing the systematic risk of the j^{th} assets that determines the dependent variable $E(r_j)$ the expected rate of return for the j^{th} assets. The CAMP intersects the vertical axis at the riskless rate R_f , and the quantity $E(r_m) - R_f$ is the slope of the CAMP. The riskless interest rate R_f is the appropriate rate of return for an asset with zero risk in the CAMP". (Francis; 1997:101)

The graphical version of CAMP 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 an 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 underpriced lie above the SML. The diagram 2.4 shows the security market line, overpriced and underpriced 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 CAMP relates an expected return to each of the systematic risks. These expected returns can be interpreted as the appropriate discount rates, as the cost of capital, or as the equilibrium rate of return that investors expect for that amount of systematic risk. In the figure, U and O are not in equilibrium on the CAMP. Assets U are undervalued and therefore desirable to own. 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 beta on the SML, equilibrium is attained. The asset O is observed. Investors will its beta on the SML equilibrium is attained. The asset O is overvalued. Investors will attempt to sell O, and therefore puts the downward pressure on O's price. When the return on assets O increases to the rate that is consistent with the beta risk level given by the SML, equilibrium will be achieved and downward price pressure will cease.

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

2.1.14 Capital Market Line (CML)

If borrowing and lending opportunities are included in the chart analysis, a linear set of investment opportunities is appeared called capital market line (CML) emerges. It is the locus of the portfolios that wealth seeking risk-average investors will find more describe than any other portfolios. CML illustrate the positive relationship between risk and average return. So, it is always be positive sloped because investors are risk average i.e. sleepless.

The assumptions underlying capital market theory are as follows:

Money can be borrowed and lent at the risk-free rate.

All investors have homogenous expectations concerning expected returns and risks on securities.

Investors are infinitely divisible.

No taxes or transactions cost exists.

No inflation exists.

Capital

Markets are in equilibrium.

"The main focus of investment graphed in risk-return space which has (1) the maximum expected rate of return is selected. The efficient investments are called efficient portfolios because individual assets are dominated and will not be able to attain the efficient frontier. So, if it is constructed, it will be found convex towards expected rate of return axis in risk rate space."(*Sharpe and Alexander and Belley; 1995:19*)

Figure: 2.5

The Capital Market Line (CML) and other Investment Opportunities

(Source:Francis; 1997:276)

The dots that lie below the CML represent individual stocks, bonds, commodity futures, puts, calls and other investments. The dots labeled CS, CB, and TB represent the average common stock (CS), corporate bond (CB), and Treasury bill investments that were shown in the figure 2.5.

2.2 Reviews From Journals 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 well known models as "Modern Portfolio Theory" of Markowitz (1952), The Capital Asset Pricing Model (CAPM) of Sharpe (1964), The Efficient Market Hypothesis of Samuelson (1965) and Fama (1965), and the Option Pricing Model of Black and Scholes (1973). Although, these models are all included in Institute of Faculty Education Ltd. (1996), their acceptance or use is controversial." (*Bhusc; 1997:421*)

"Investor's whether they are individuals or institutions such as pension funds mutual funds or college endowments hold portfolios, 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?" (*Goetzmann; 1999:26*)

"Returns management appears predictable to an econometrician or appear to deviate from the Capital Asset Pricing Model, but investor can neither perceive nor 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 tool 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 returns 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 is a single measure, allowing us to quantify asset returns by risk, and it also provides the basis for investor decision about portfolio choice." (*Goetzmann; 1999:27*)

Among all securities, common stock (equity) is the riskier security. Table 2.2 makes it clearer. Table 2.2 Monthly market returns from 1st Jan 1960 to 31st Mar. 1997.

Table : 2.2
Empirical Measures of Risk and Return in the South African Markets
(In %)

	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 measures shows fairly consistent that equity investment was more risky over the period than Gilt Investment, which in term was more risky than Cash."
(Bhusc; 1997:422)

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; 197:422)*

In year 2004 Peter Byrne and Stephen Lee and different tools and techniques such as mean-variance model, mean absolute deviation approach, lower, partial movement and minimax model in their research and concluded that Traditionally, the measure of risk used in portfolio optimization models is the variance. However, alternative measures 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 the difficulty in deciding which measures of 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 overcome 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's attitude to risk rather than any theoretical and/or practical advantages of one model over another.

In 1985 Gordon A. Alexander and Bruce G. Resnick has focused for the risk average investors, consideration of estimation of risk is important in selecting an expected-utility-portfolio. They have examined the tangency of portfolio by using Market Model to estimate the risk and drawn the conclusion that "In the presence of a risk-free asset, the efficient frontier is known to consist of linear combinations of risk-free asset and tangency portfolio. If the Full Covariance Model is used, it has been shown elsewhere that the composition of the tangency portfolio when estimation risk is recognized identically to its composition when estimation risk is ignored. It may be used as originally presented since there is little substantive difference in the tangency portfolio's composition when estimation risk is recognized relative to when it is ignored. of course, it should be kept in mind that the location of the efficient frontier will shift, even though the tangency portfolio's composition is unaffected, when estimation risk is recognized. This means that the expected-utility-maximizing, risk-averse investor will generally invest more in the risk-free asset and less in the tangency portfolio when estimation risk is recognized relative to when it is ignored." (Alexandar and Gordon; 1985:131)

2.2.2 Review from Books

Manohar Krishan Shrestha,(1998), in the title of "*Shareholder's Democracy and Annual General Meeting Feedback*", prefers 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 divided into two parts. The primary part includes 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 shareholders 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 share holders in deciding the managerial plans and policies. Top level decision often by pass the interest of shareholders. As the management lacks serious concern about the protection of shareholders, rights and expectations. The annual general meeting has become a plate-form for shareholders to express their opinions and grievance in front of the management and board of directors. Many general feedback 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 protects the shareholders right despite the increase in population of shareholders in Nepal and questioned the need of separate act regarding the protection of shareholders right?

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

- Voting rights

- Participation in general meeting

- Right of getting information

- Electing as a board of director

- Participation in the profit and loss of the company.

- Transferring shares

- Proxy representation

The collective rights of the shareholders are:

- Amend the internal by laws.

- Authorized the sales of assets

- Enter into merger.

- Change amount of authorized capital.

Narayan Paudel,(1998), has carried out study about "*Investing in Shares of Commercial Banks in Nepal*". An assessment of return and risk elements.

To analyze the risk characteristics of the shares of joint venture commercial banks, the share prices of Nepal Arab Bank Ltd. (NABIL), Nepal Indosuez Bank Ltd. (NIBL), Standard Chartered Bank Ltd. (SCBNL), Himalayan Bank Ltd. (HBL), Nepal SBI Bank Ltd. (NSBL), Nepal Bangladesh Bank Ltd. (NBBL), Everest Bank Ltd. (EBL) and bank of Kathmandu Ltd. (BOKL) have been analyzed. Six years data are analyzed.

His findings are summarized below:

Bank	Price	K_{avg}	K
Nepal Arab Bank Ltd.	Over-priced	5.90	6.18
Nepal Indosuez Bank Ltd.	Over-priced	5.79	5.90
Standard Chartered Bank Ltd.	Under-priced	7.06	5.72
Himalayan Bank Ltd.	Over-priced	5.52	6.00
Nepal SBI Bank Ltd.	Under-priced	8.56	5.82
Nepal Bangladesh Bank Ltd.	Under-priced	14.24	5.81
Everest Bank Ltd.	Under-priced	13.09	5.75
Bank of Kathmandu Ltd.	Under-priced	15.57	5

Where,

K_{avg} = Average mean return

K = the required rate of return using CAPM (Capital Assets Pricing Model)

It shows with larger standard deviations seem to be able to produce higher rate of return. The portion of unsystematic risk is very high with the shares having negative beta co-efficient. The risk per unit of return, as measured by beta co-efficient or variation, is less than that of the market as a whole for all the individual shares. Most of the shares fall under the category of defensive stocks (having beta co-efficient less than 1), except the shares of Bank of Kathmandu Ltd. Return on the shares of Nepal Arab Bank Ltd. Is negatively co-related with the return on the market portfolio and, therefore, it has negative beta co-efficient. From the analysis it appears that none of the shares are correctly priced.

Theoretically, the market price of an over priced shares (under-priced) will fall (rise) in order to increase the expected return such that the expected return equals the required return. Therefore, shares of Nepal Arab Bank Ltd. Nepal Indosuez Bank Ltd. And Himalayan Bank Ltd. Which are overpriced relative to equilibrium thus market focus, will decline. The remaining shares appear to be under-priced indicating a possible positive long-term price trend.

2.3 Reviews from Theses

There are so many researches performed in this topic. four different theses are reviewed here.

Roopak Joshi, (2004) has studied on; “*Problems in Choice of Optimum Portfolio of Stocks in Nepal Stock Exchange*”. This study is 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 problem of investors, facing regarding selection of most profitable stocks in NEPASE and other objectives are:

-) To analyze the trend of NEPASE
-) To analyze the problems and find out some resolutions for the problems
-) To suggest the measures for the improvement of the stock market as well as for better meet of invest.
-) To try to find 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 find out the best stock available in the NEPSE such as Standard Deviation, holding period Return, Coefficient of Variation, Portfolio Return, Portfolio Standard Deviation and others.

Findings 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 return more the only yard stick to make investment decision than CIT be the better one 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.

Portfolio management is a new concept for Nepalese investor. Due to lack of sufficient information, proper investment is not possible.

Limited no of security broker, lack of opportunity of invest and many were reasons are there, which is acting as barrier of development of NEPSE.

Due to lack of financing tools only three stock portfolios were constructed and analyzed, even many stocks-broker does not give the information to the investor.

Investor are purchasing and selling their stock mostly on the pressure of broker. Due to lack of sufficient information the decision or purchase and sell of stocks are difficult. It needs special knowledge as well adequate skill small change in proportion of investment may change the risk and return in very large scale. So, it is difficult task.

Narayan Pokhrel,(2006) conducted the study on " *portfolio Analysis on Common of Joint Venture Banks in Nepal*" by using nine years data year from 1993/94 to 2002/2003. He has conducted the study of all the Joint Venture Banks that are NABIL, SCBNL, HBL, SBI, NBBL and EBL. There were various objective of the study; among them one "to estimate the optimal portfolio among CS investment of JVB's is related to this study. In his study all the CS of JVBs are under priced. Correlation between HBL and EBL was found to have 1, there is no chance to minimize risk by creating portfolio of HBL and EBL so excluding the EBL, he has estimated the optimal portfolio among the remaining five JVBs whose return was 88.2% and the risk underlying on it was 102.3% with the investing weight as:

Bank	Weight (in %)
NABIL	45.33
SCBNL	38.13
HBL	-7.11
SBI	49.57
NBBL	25.92

Mohan Purna Satyal,(2007), 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 examine the movement of market price of share.
-) To study the risk and holding period return associated with investment.
-) To analyze the relation between risk and return of individual stock with that of market.
-) To provide suggestions on the basis of findings.

Research is based on historical data. It covers five years data from FY 2052/53 to FY 2056/57. 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 sector listed in NEPSE has been taken as sample in his research. It is assumed that these 8 companies represent risk and return of the whole groups and the market.

Findings & Conclusions:

Satyal obtained following from the study in terms of risk and return is as follows:

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.C, 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. C.V. =0.55 means for obtaining the 1 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 others 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.

Ram Hari Khadka,(2007), has studied on, "*Analysis of Risk and Return on Selected Nepalese Commercial Banks Listed in NEPS*" 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 shares 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 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 & Conclusions:

Though Nepal Bangladesh Bank, which is hard hit by the events (Return-0.8809), the ranking of the bank is placed as the highest return earner among them.

All the shares under review generated higher rate of return than the market portfolio except Nabil Bank Ltd.

The unsystematic risk of Nabil Bank Ltd. Is the higher one among the shares reviewed, which is 95.59% and SCBN has lowest one being 45.17%. Total variance or total risk of NB bank has the highest. It was in the second last position in terms of systematic risk being risk less explained by the market in comparison with the other stocks.

Based on coefficient of variance (C.V) which measures risk/unit of stock individually, SCBN Ltd has the lowest C.V (1.89) and Nabil Bank has the highest one (3.35)

The negative correlation coefficient of Nabil bank (-0.21) revealed that the return on the bank goes down if the market return goes up. The rest of the shares moved in the direction the market moves.

None of the share price is in equilibrium. Share of Nabil Bank is near to the required rate of return minus excess return implies that is overprice, hence unattractive. The shares with higher realized returns than the required rate of return are under priced and will be striking towards the equilibrium. Therefore, the prices of shares of banks reviewed except Nabil Bank are under priced. The market forces will cause the price of Nabil bank to slightly fall.

As beta of the stocks of Nepal Bangladesh Bank and Standard Chartered Bank Nepal Ltd. Are greater than 1, there shares are more risky than the market.

Though the shares of Commercial Banks in Nepal are heavily traded on NEPSE none of share price is correctly priced.

CHAPTER-III

RESEARCH METHODOLOGY

The research methodology is the systematic way of solving research problems. Research methodology refers to the overall research processes, which a researcher conducts during his/her study. It includes all the procedures from theoretical foundation to the collection and analysis of data. As most of the data are quantitative the research is based on the scientific models. It is composed of both parts of technical aspect and logical aspect, on the basis of historical data. Research is systematic and organizational effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well thought out activities gathering, recording and analyzing and interpreting the data with the purpose of finding answer to the problem.

Research can be conducted on the basis of secondary data. In this study all the data are secondary and those data are analyzed using appropriate financial as well as statistical tools. Outcomes are presented in simple way. In this study, the research design, data collection procedure and analysis are described serially. Detailed research methods are described in the following headings.

3.1 Study Design

This study covers quantitative methodology in a greater extent and also uses the descriptive part based on both technical aspect and logical aspect. This research tries to perform a well-designed quantitative research in a very clear and direct way using both financial and statistical tools are required by the study.

This research is based on the secondary data. It covers the 11 years period from 1996/97 to 2006/07. The study is focused on common stocks of financial companies on the basis of available information. This research is analytical based as well as descriptive.

3.2 Populations and Sample

The sampling data had been taken among the total population of finance companies in Nepal, i.e. 50 in total, which were established in the base year 1996/07. So, the

priority had been shifted to those finance companies, which had eleven year data including the data of base year. The name list of the sample companies selected for the study is presented in Table 3.1.

All of them have been assumed as the population of the study and among them following 5 finance companies is taken as a sample of the study on the basis of judgmental sampling. They are:

Number of finance companies traded in the fiscal year 2006/07=5-0

Sample size of finance companies = 5

Table: 3.1

Selection of Sample Banks from the Population of the Listed Finance Companies

No. of Finance Companies Traded = 50

No. of Sample Finance Companies = 5

S. No.	Sample Finance Companies
1	Kathmandu Finance Limited
2	Nepal Finance and Saving Company Limited
3	NIDC Capital Markets Limited
4	National Finance Company Limited
5	Nepal Share Markets Company Limited

The Study Covers the Following:

Calculation of expected rate of return. Systematic risk, unsystematic risk (Market Sensitivity i.e. beta risk), portfolio return, portfolio risk, coefficient of variation, proportion of wealth to diversification of risk and comparative analysis of market sensitivity of different sector, i.e. finance, banking, hotel, trading and others sectors etc.

3.3 Source of Data

In this study, the main source of data is secondary data. The data has been taken with NEPSE index is collected from NEPSE on June 30, 2007, the main source of data in

annual trading report published by NEPSE. Securities board and other concern finance company's annual report, journals and Nepal Rastra Bank's annual, quarterly publications and others.

3.4 Data Collection Technique

This study depends only upon the secondary sources of data. The secondary data had been collected from published material of different organizations such as NEPSE, Central Bureau of Statistics, Nepal Rastra Bank, related websites etc. Most of the data were taken from trading reports of NEPSE and financial statements of the companies under study. Some of these data are collected from NEPSE's web site 'www.nepalstock.com' as well as other related web sites. The review materials are mainly collected from central library of T.U., Kirtipur, Library of Central Department of Management T.U., Kirtipur, Library of Nepal Commerce Campus. New Baneshwor and other public libraries/

3.5 Tools for Data Analysis

Market Price of Stock

One of the major data of this study is market price of stock. As it is followed the market price of shares of companies, it can be obtained three types of prices high, low and closing. Among high, low and closing price, each year closing price has been taken as the market price of the stock which has specific time of span of one year and the study has focused in annual basis. To get the real average. Volume and price of each transaction in the stock and duration of tie of each transaction in the whole year are essential. Which is tedious and impossible too, considering the data availability and maintenance? Hence, the closing price is used as the market price of stock, which has a specific time span of one year and the study has focused in annual basis.

Dividend

Dividend is relevant during the computation of rate of return, which is a reward to the shareholders for their investment. If a company declares only the cash dividend, there are no problems to take the dividend amount. But if the company declares stock dividend (bonus share), it is difficult to obtain the amount that really shareholders has gained. In this case, they get extra numbers of shares as dividend and simultaneously price of the stock declines as a result of increased number of stocks. To get a real

amount of dividend there are no any model (formula). So the model has been developed considering practical as well as theoretical aspect.

The model is in case of stock dividend,

Total dividend amount = Cash dividend + Stock dividend % * next year's MPS

Where,

MPS = Market Price per share

Return on Common Stock Investment

The rate of return on each stock was calculated by dividing the increment or decrement on the market price per share by the value of previous market price of the same stock. The market rate of return is also calculated by dividing the increment or decrement of NEPSE index by the previous NEPSE index. In other words, return on stock j (R_j) is calculated as follows:

$$R_j = \frac{D_t + \frac{P_t - P_{t-1}}{P_{t-1}}}{P_{t-1}}$$

Where,

R_j = Realized rate of return on common stock j at time t.

D_t = Cash dividend received at time t.

P_t = Price of a stock at time t.

P_{t-1} = Price of a stock at time t-1

Expected Rate of Return of Common Stock

One of the major aims of the study is to determine the expected return on the investment in common stock. Generally, this rate is obtained by the arithmetic mean of the past years returns.

Symbolically,

$$E(R_j) = \frac{\sum R_j}{n}$$

Where,

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

n = Number of years that the return is taken.

R_j = Return on Stock J

Standard Deviation (†)

It is the statistical measure of the variability of a distribution of return around its mean. It is the square root of the variance and measures the unsystematic risk on stock investment.

Symbolically,

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

Where, \dagger_j = Standard deviation of returns on stock j during the time period n.

Co-efficient of Variation (C.V)

"It is the ratio of standard deviation of returns to the mean of that distribution. It is a measure of relative risk." (Van Horne, 1981:94)

Symbolically,

$$C.V = \frac{\dagger_j}{\bar{R}_j}$$

Beta (S)

"It is an index of systematic risk. It measures the sensitivity of a stock's return on the market portfolio." (Van Horne; 1981:102)

$$S_j = \frac{Cov(R_j, R_m)}{\dagger_m^2}$$

Where S_j = Beta co-efficient of stock j.

$$Cov(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n}$$

\dagger_m^2 = Variance of market return

Correlation Co-efficient (...ij)

The correlation is also a measure of the relationship between two assets. The correlation co-efficient can taken on a value ranging from -1 to +1. Correlation and covariance are related by the following equation.

$$Cov_{ij} = \dagger_i \dagger_j \dots_{ij}$$

$$\rho_{ij} = \frac{\text{Cov}_{ij}}{\sigma_i \sigma_j}$$

Where σ_i and σ_j are standard deviations of returns for assets i and j and ρ_{ij} is the correlation coefficient for assets i and j.

There are various cases of correlation and risk condition, which are presented as below:

Perfect Positive Correlation ($\rho_{ij}=+1$)

Returns on two perfectly correlated stocks would move in direct proportion and a portfolio consisting of two such stocks would be exactly as risky as the individual stocks. Thus diversification does nothing to reduce risk if the portfolio consists of perfectly positively correlated stock.

Perfect Negative Correlation ($\rho_{ij}=-1$)

Returns on two perfectly correlated stocks would move perfectly together but in exactly opposite direction. In this condition, risk can be completely eliminated. Perfect negative correlation almost never found in the real world.

No Relationship Between Returns ($\rho_{ij}=0$)

When the correlation between two stocks is exactly zero, there is no relationship between the returns; they are independent of each other. In this condition, some risk can be reduced.

Intermediate Risk ($\rho_{ij}=+0.5$)

Most stocks are positively correlated, but not perfectly. On average the returns on two stocks would lie on the range of +0.4 and +0.75 under this condition combining stocks into portfolio reduces risk but does not eliminate completely.

Portfolio Returns (R_p)

Portfolio is combination of two or more securities or assets and portfolio return is simply a weighted average of individual stock returns.

In case of two assets case:

$$\bar{R}_p = XW_A \bar{R}_A + \Gamma W_B \bar{R}_B$$

In case of three assets case:

$$\bar{R}_p = XW_A\bar{R}_A + \Gamma W_B\bar{R}_B + \Gamma W_C\bar{R}_C$$

Where \bar{R}_p = Expected return on portfolio of stocks W_A, W_B, W_C are weight of stock A, B and C respectively $W_A + W_B + W_C = 1$ (or 100%) always.

Portfolio Risk (Ξ_p)

It is measured by the combined standard deviation of the standard deviations of individual stock returns.

In case of two assets case:

$$\Xi_p = X\sqrt{W_A^2\Xi_A^2 + \Gamma W_B^2\Xi_B^2 + \Gamma 2W_AW_B\text{Cov}(R_A, R_B)}$$

In case of three assets case:

$$\Xi_p = X\sqrt{W_A^2\Xi_A^2 + \Gamma W_B^2\Xi_B^2 + \Gamma W_C^2\Xi_C^2 + \Gamma 2W_AW_B\text{Cov}(R_A, R_B) + \Gamma 2W_BW_C\text{Cov}(R_B, R_C) + \Gamma 2W_CW_A\text{Cov}(R_C, R_A)}$$

Where

Ξ_p = Standard deviation of portfolio return of stock A, B, and C

$\text{Cov}(R_A, R_B)$ = Equivalent representation for covariance of returns between assets A & B

$\text{Cov}(R_B, R_C)$ = Equivalent representation for covariance of returns between assets B & C

$\text{Cov}(R_C, R_A)$ = Equivalent representation for covariance of returns between assets C & A

Risk Minimizing Portfolio

It is the ratio of two assets, which minimize the risk (Ξ_p)

Symbolically,

$$W_A = \frac{\Xi_B^2 \text{Cov}(R_A, R_B)}{\Xi_A^2 + \Gamma \Xi_B^2}$$

Where, W_A = Weight of stock A that minimize the portfolio risk of stock A & B.

Ξ_A = Standard Deviation of stock A

Ξ_B = Standard Deviation of stock B

Systematic Risk

Systematic risk refers to that portion of total variability in return caused by factors affecting the prices of all securities. Systematic risk is external to an industry and, of business and is attributed to board forces out of the business unlike systematic risk it is the risk that can be diversified away. Due to this character of this risk it is said to be relevant risk to be concerned.

We can sort put systematic risk out of total risk using tool below:

Total risk – Systematic risk + Unsystematic risk

$$\sigma_j^2 = \beta_j^2 \sigma_m^2 + \sigma_e^2$$

Portion of systematic risk = Systematic Risk

Total Risk

$$= \frac{\beta_j^2 \sigma_m^2}{\sigma_j^2}$$

Where

σ_j^2 = Variance of Stock j.

β_j^2 = Square of beta to of stock j

σ_m^2 = Variance of market

Portion of Unsystematic risk will simply be (1-portion of systematic risk)

$$\text{or, } 1 - \frac{\beta_j^2 \sigma_m^2}{\sigma_j^2}$$

In case of Multi Assets

Portfolio return (R_p) = $r_f + \beta_p (R_m - r_f)$

Portfolio risk (σ_p^2) = $\beta_p^2 \sigma_m^2 + \sigma_e^2$ should be calculated solving equations

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Data Presentation and Analysis

This chapter includes analysis of data collected and their presentation. In this chapter, the effort has been made of analyze “risk and return on common stock in Finance Companies. Detail data of MPS and dividend of each finance companies and each sector, NEPSE index of each sector and market is presented and their interpretation and analysis is done. With reference to the various reading and literature review in the preceding chapter, effort is made to analyze and diagnose the recent Nepalese stock market movement, with talking a special reference to the listed finance companies. Different tables and figures (diagrams) are drawn to make the result more simple and understandable.

-) Expected Return.
-) Standard Deviation.
-) Coefficient of variance.
-) Correlation Analysis.
-) Analysis of Market Sensitivity.
-) Analysis of Portfolio.

4.1.1 Analysis of Individual Finance Companies

As the study has taken a special reference to listed finance companies, common stock of listed finance companies is analyzed here separately. There are 89 finance companies established up to now in Nepal, are in operation from 1992/93 up to 2005/06. But only 50 finance companies are listed in NEPSE, among them the study has focused on the five finance companies as a sample. Each company is introduced at appendixes at the end of the study their common stock’s risk and return are analyzed and interpreted here. Name of the chosen five finance companies are as follows:

4.1.1.1 Kathmandu Finance Limited (KFL)

Kathmandu Finance Limited was established under the Company Act, 1964 in 1994. The main objective of the company is to accept deposits and to provide loans and advances and other financial services under the Finance Company Act, 1985.

Authorized Capital	= Rs.60,000,000
Issued Capital	=Rs. 30,000,000
Paid up Capital	=Rs. 30,000,000
Par value per Share	= Rs. 100
Numbers of shareholders	= 2400

Its shares listing date on stock exchange was 3rd Ashad, 2052 (13-07-1995)

Table: 4.1

Market Price per Share and Dividend of KFL

Fiscal Year	Market Price Per Share (P) (Rs.)			Dividend Per Share (D)		
	High	Low	Closing	Cash (Rs.)	Stock (%)	Total (Rs.)
1996/97	115	90	93	9	-	9
1997/98	95	90	95	12	-	12
1998/99	111	97	111	16	-	16
1999/00	115	140	151	20	-	20
2000/01	370	270	321	23	-	23
2001/02	350	271	305	50	-	50
2002/03	310	230	235	-	20	41*
2003/04	274	200	205	-	20	39**
2004/05	205	195	195	-	10	54***
2005/06	570	490	540	55	-	55
206/07	805	770	790	75	-	75

(Source: Refer trading annual report of KFL)

* 0+20% of 205 = Rs.41

** 0+20% of 195 = Rs.39

*** 0+10% of 540 = Rs.54

The table 4.1 shows that the year -ed price movement is slightly in increasing trend between 96/97 and 00/01. Then in decreasing trend between 00/01 and 04/05. There is increasing trend till the 04/05. It's dividend is in increasing trend except in year 04/05.

Figure: 4.1
End Year Price Movement of Common Stock of KFL

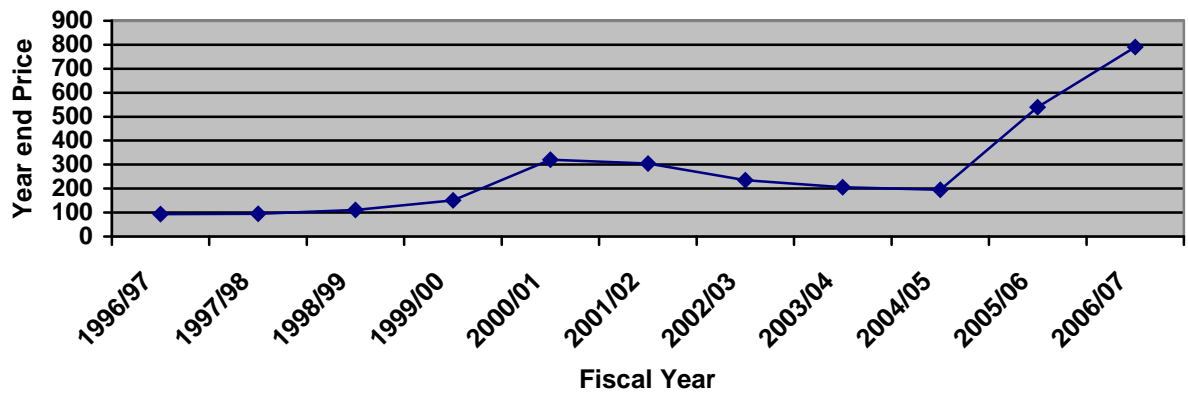


Table : 4.2
Statistical Analysis of the Common Stock of KEL

Fiscal Year	Closing MPS	Dividend	$R = \frac{D_t \Gamma(P_t Z P_{tZ})}{P_{tZ}}$	$R Z \bar{R}$	
1996/97	93	9			
1997/98	95	12	0.151	-0.371	0.37
1998/99	111	16	0.337	-0.185	0.0342
1999/00	151	20	0.541	0.019	0.000361
2000/01	321	23	1.278	0.756	0.571
2001/02	305	50	0.106	-0.416	0.1730
2002/03	235	41	-0.095	-0.617	0.38
2003/04	205	58.64	0.038	-0.484	0.234
2004/05	195	54	0.2148	-0.3074	0.0944
2005/06	540	55	2.051	1.529	2.3378
2006/07	790	75	0.60	0.078	0.006
Total			5.22		3.967

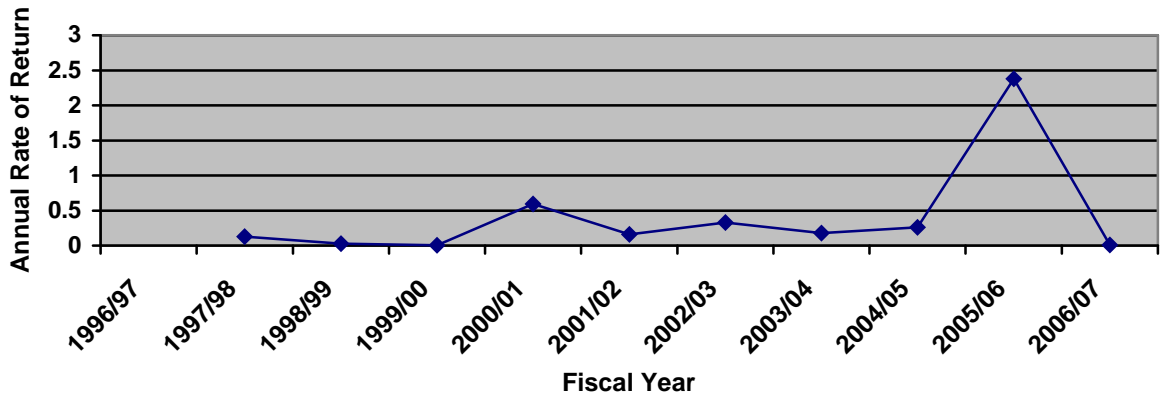
We have,

$$\text{Expected Return } (\bar{R}_j) \times E(R_j) \times \frac{\phi R_j}{n} \times \frac{5.22}{10} \times 0.522$$

$$\text{Standard Deviation } (\dagger) \times \sqrt{\frac{\phi(R_j \ Z R_j)^2}{n \ Z1}} \times \sqrt{\frac{3.967}{10 \ Z1}} \times 0.67$$

$$\text{Coefficient of Variation } (CV_j) \times \frac{\dagger_j}{R_j} \times \frac{0.67}{0.522} \times 1.28$$

Figure: 4.2
Annual Rate of Return of Common Stock of KFL



4.1.1.2 Nepal Finance and Saving Company (NFS)

Nepal Finance and Saving Company Limited was established in 1992 under the company act 1964. Their main objective is to collect deposit and to provide loans and advances to needy sectors.

Authorized Capital	= Rs. 40,000,000
Issued Capital	= Rs. 20,000,000
Paid-up Capital	= Rs. 20,000,000
Par Value per Share	= Rs. 100
Number of Shareholder	= 1307

Its listing date in stock exchange is 20th Falgun 2049 (02-02-1993)

Table :4.3
Market Price Per Share and Dividend of NFS

Fiscal Year	Market Price Per Share (Rs.) (P)			Dividend Per Share (D)		
	High	Low	Closing	Cash(Rs.)	Stock(%)	Total(Rs.)
1996/97	145	92	116	10	-	10
1997/98	179	120	141	15	-	15
1998/99	150	125	125	15	-	15
1999/00	400	144	375	5.26	20	63.26%
2000/01	471	290	290	-	-	-
2001/02	300	260	300	-	-	-
2002/03	290	176	176	-	-	-
2003/04	170	160	165	-	-	-
2004/05	164	132	147	-	-	-
2005/06	520	460	470	75	10	154.50**
206/07	850	790	795	90	-	90

(Source: Refer trading annual report of NFS)

*526+20% of 290 = Rs.63.26

**75+10% of 795 = Rs154.50

The closing price is in fluctuating trend. But there is heavy increasing trend between 04/05 and 06/07. The dividend is in increasing trend. The dividend in the 1990/00 is Rs. 63.26 due to bonus share.

Figure : 4.3
End Year Price Movement of Common Stock of NFS

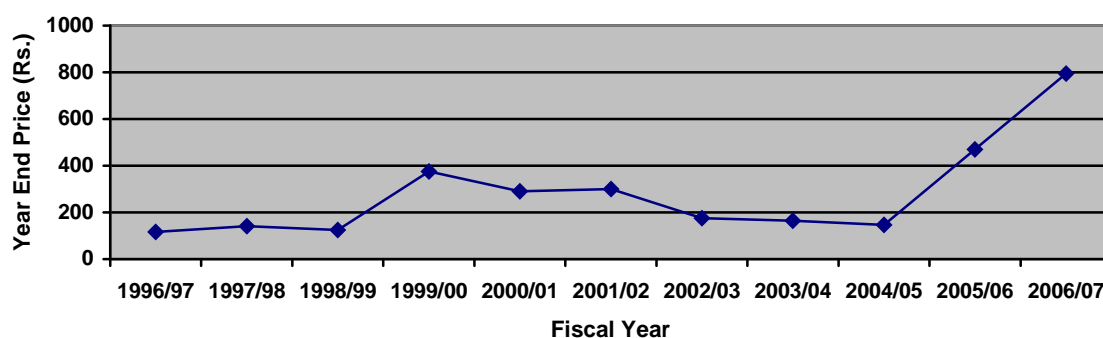


Table : 4.4
Statistical Analysis of the Common Stock of NES

Fiscal Year	Year end Price (P)	Dividend (D)	$R = \frac{D_t + \frac{P_t - P_{t-1}}{P_{t-1}}}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
1996/97	116	10		-	-
1997/98	141	15	0.345	-0.274	0.075
1998/99	125	15	-0.007	-0.626	0.3918
1999/00	375	63.26	2.50	1.881	3.54
2000/01	290	-	-0.227	-0.846	0.716
2001/02	300	-	0.034	-0.585	0.3422
2002/03	176	-	-0.413	-1.032	1.065
2003/04	165	-	-0.063	-0.682	0.4651
2004/05	147	-	-0.109	-0.728	0.533
2005/06	470	154.50	3.25	2.631	6.922
206/07	795	90	0.883	0.264	0.0697
Total			6.19		14.1165

(Source: Refer table 4.3)

We have,

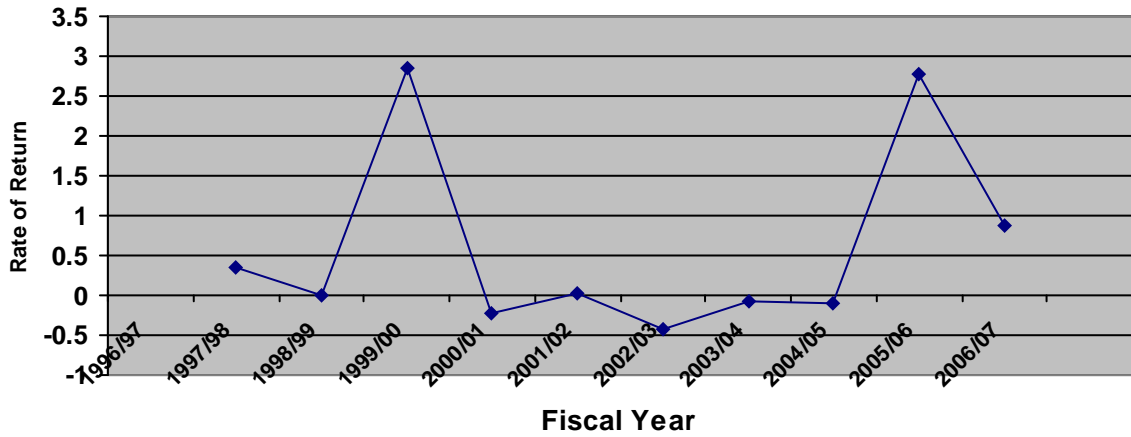
$$\text{Expected Return } (\bar{R}_j) = \frac{\sum R_j}{n} = \frac{6.19}{10} = 0.619$$

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} = \sqrt{\frac{14.1165}{10}} = 1.26$$

$$\text{Coefficient of Variation } (CV_j) = \frac{\sigma}{\bar{R}_j} = \frac{1.26}{0.619} = 2.023$$

Figure No: 4.4

Annual Rate of Return of Common Stock of NFS



4.1.1.3 NIDC Capital Market Company Limited (NIDCCM)

NIDC Capital Market Limited was established in 1992 under the company Act, 1985. Its main objective is to carry financial activities under the Finance Company Act, 1985 and Security Exchange Act, 1993.

Its listing date in Stock Exchanger is 14th Ashad 2050 (29-06-1993)

NIDC CM is also an issue manager of shares of other institutions and companies.

Its Authorized Capital = Rs. 1,20,000,000 and

Issued Capital = Rs. 60,000,000 and

Paid-up Capital = Rs. 58,003,800

Par Value per Share = Rs. 100

Number of Shareholder = 1567

Table No: 4.5**Market Price Per Share and Dividend of NIDC CM**

Fiscal Year	Market Price Per Share(Rs.) (P)			Dividend Per Share (D)		
	High	Low	Closing	Cash(Rs.)	Stock(%)	Total(Rs.)
1996/97	100	68	70	-	-	-
1997/98	90	70	82	14.55	-	14.55
1998/99	101	72	100	29.36	-	29.35
1999/00	452	100	415	15	-	15
2000/01	875	426	600	15	-	15
2001/02	600	175	175	-	-	-
2002/03	180	125	125	-	-	-
2003/04	130	101	107	-	-	-
2004/05	145	112	145	-	-	-
2005/06	500	435	450	35		35
206/07	860	790	800	45		45

(Source: Refer trading annual report of NIDC CM)

The price is highly and is in increasing trend from 96/77 to 00/01 and is in increasing trend up to 03/04. Then after there is increasing trend from 05/06.

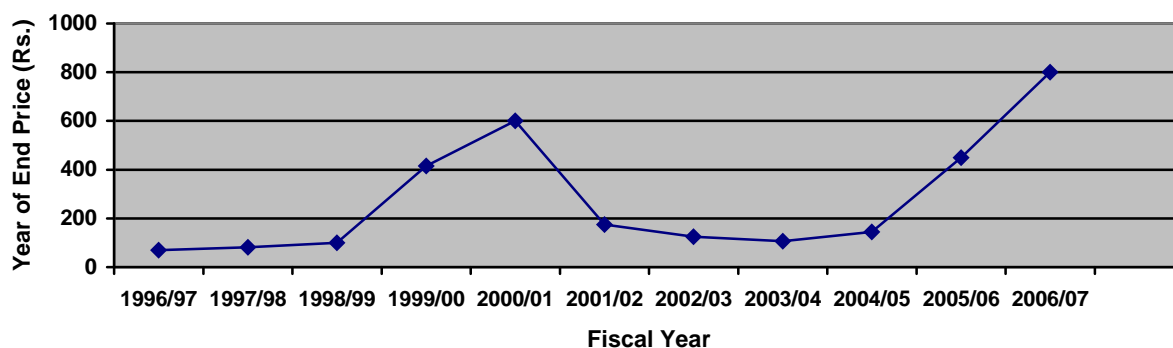
Figure : 4.5**End Year Price Movement of Common Stock of NIDC CM**

Table No: 4.6

Statistical Analysis of the Common Stock of NIDC CM

Fiscal Year	Year end Price (P)	Dividend (D)	$R = \frac{D_t + \frac{P_t - P_{t-1}}{P_{t-1}}}{P_{t-1}}$	$R - \bar{R}$	
1996/97	70	-		-	
1997/98	82	14.55	0.379	-0.281	0.0789
1998/99	100	29.35	0.577	-0.083	0.00689
1999/00	415	15	3.3	2.64	6.96
2000/01	600	15	0.482	-0.17	0.03168
2001/02	175	-	-0.708	-1.368	1.8714
2002/03	125	-	-0.286	-0.9460	0.8949
2003/04	107	-	-0.144	-0.8040	0.6464
2004/05	145	-	0.355	-0.3050	0.093
2005/06	450	35	2.34	1.68	2.82
2006/07	800	45	0.877	0.2170	0.0471
Total			6.596		13.45

We have,

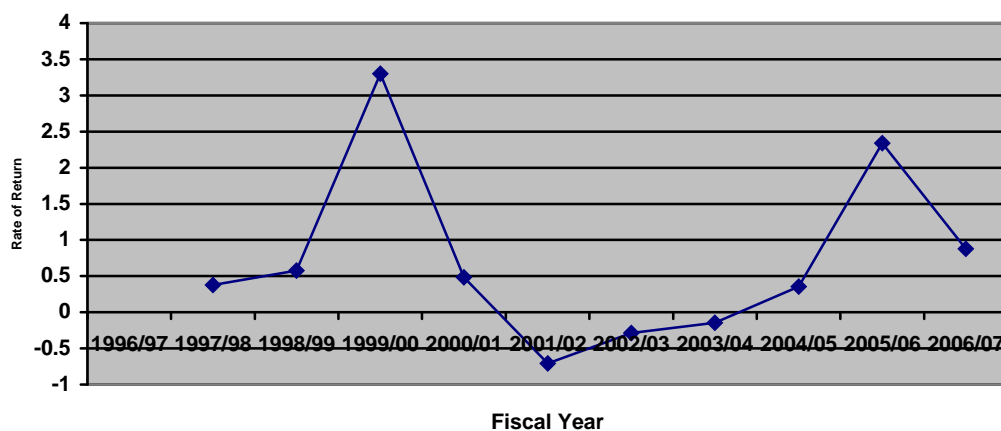
$$\text{Expected Return } (\bar{R}_j) = E(R_j) = \frac{\sum R_j}{n} = \frac{6.596}{10} = 0.6598$$

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} = \sqrt{\frac{13.45}{10}} = 1.12$$

$$\text{Coefficient of Variation } (CV_j) = \frac{\sigma}{\bar{R}_j} = \frac{1.12}{0.66} = 1.8485$$

Figure: 4.6

Annual Rate of Return of Common Stock of NIDC CM



4.1.1.4 National Finance Company Limited (NFCL)

National Finance Company Limited was established in 1992 under the Company Act, 1964. Its main objective is to mobilize scattered saving through various schemes and invest them in different sectors for the economic development of the nation. It commenced its activities on May 1993 in accordance with Finance Company Act, 1985.

Its Authorized Capital = Rs. 60,000,000 and

Issued Capital = Rs. 30,000,000 and

Paid-up Capital = Rs. 30,000,000

Par Value per Share = Rs. 100

Number of Shareholder = 1027

Listing date NFCL's shares in Stock Exchange is 22nd Ashad 2052 (06-07-1993)

Table No: 4.7
Market Price Per Share and Dividend of NFCL

Fiscal Year	Market Price Pershare(Rs.) (P)			Dividend Per Share (D)		
	High	Low	Closing	Cash(Rs.)	Stock(%)	Total(Rs.)
1996/97	220	92	187	18	-	18
1997/98	205	200	204	20	-	20
1998/99	300	200	300	22	-	22
1999/00	470	300	470	28	-	28
2000/01	701	470	560	30	-	30
2001/02	615	470	545	20	-	20
2002/03	515	414	455	-	10	36*
2003/04	445	360	360	20	-	20
2004/05	375	295	295	20	-	30
2005/06	795	680	680	30	-	30
206/07	890	800	820	40	-	40

(Source: Refer trading annual report of NFCL)

*0+10% of 360 = Rs.36

The closing price of the share of the NFCL is Rs 187 in the year 1996/97 whereas it's closing price in the year 06/06 in Rs. 820. The price movement between 96/97 and 01/02 is in increasing trend then after it is in decreasing trend from 01/02 to 04/05. There is remarkable increasing trend from.

Figure :4.7

End Year Price Movement of Common Stock of NFCL

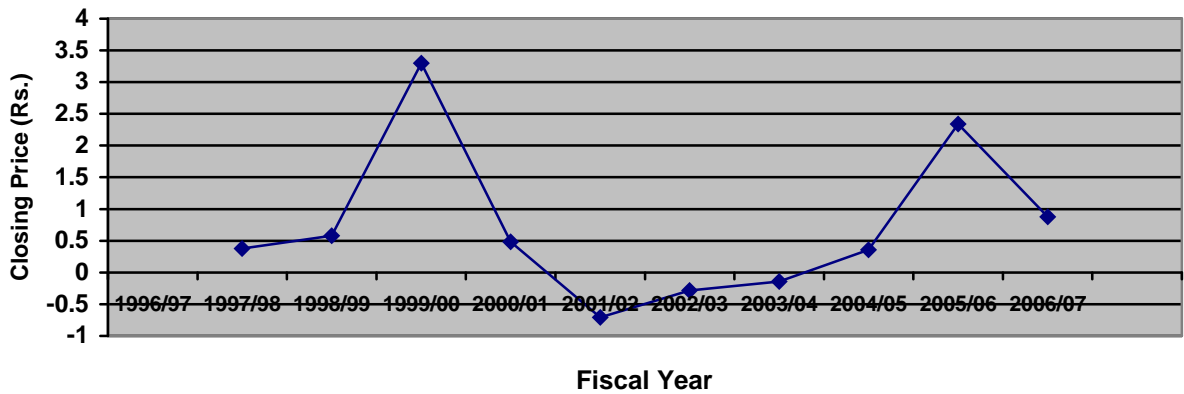


Table : 4.8

Statistical Analysis of the Common Stock of NFCL

Fiscal Year	Year end Price (P)	Dividend (D)	$R = \frac{D_t + \frac{P_t - P_{t-1}}{P_{t-1}}}{P_{t-1}}$	ZR	\bar{R}
1996/97	187	18			
1997/98	204	20	0.198	-0.122	0.1488
1998/99	300	22	0.578	0.258	0.06656
1999/00	470	28	0.660	9.34	0.1156
2000/01	560	30	0.255	-0.065	0.0042
2001/02	545	20	0.009	-0.311	0.0967
2002/03	455	20	-0.128	-0.419	0.1755
2003/04	360	36	-0.099	-0.485	0.2352
2004/05	295	30	0.097	-0.223	0.497
2005/06	680	30	1.4068	1.0868	1.181
2006/07	820	40	0.2647	-0.0553	0.0030
Total			3.20		1.9423

We have,

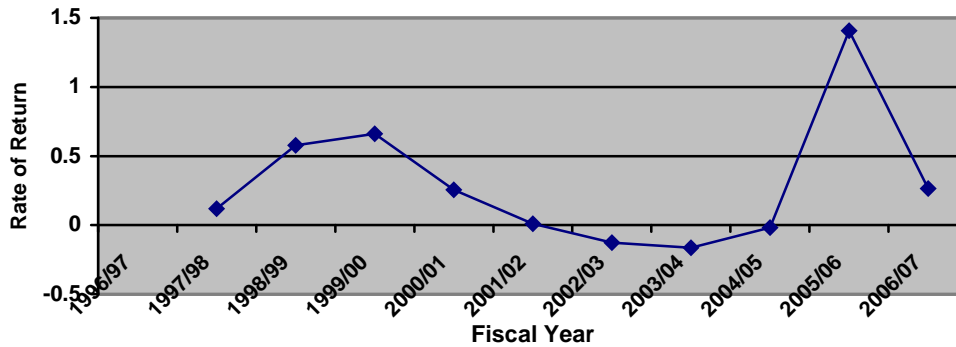
$$\text{Expected Return } (\bar{R}_j) \times E(R_j) \times \frac{\phi R_j}{n} \times \frac{3.20}{10} \times 0.32$$

$$\text{Standard Deviation } (\dagger) \times \sqrt{\frac{\phi(R_j - ZR_j)^2}{n \cdot Z1}} \times \sqrt{\frac{1.9423}{10 \cdot Z1}} \times 0.4645$$

$$\text{Coefficient of Variation } (CV_j) \times \frac{\dagger_j}{R_j} \times \frac{0.4645}{0.32} \times 1.4515$$

Figure: 4.8

Annual Rate of Return of Common Stock of NFCL



4.1.1.5 Nepal Share Market Company Limited (NSMCL)

Nepal Share Market Company Limited was established in 1993 under the company act, 1964. Its main objectives are to collect deposit and to provide loans and other financial services under the finance company act, 1985 and also to carry out capital market activities under the security Exchange Act, 1983.

Authorized capital = Rs 2,40,000,000
 Issued capital = Rs 1,20,000,000
 Paid up capital = Rs. 1,20,000,000
 The par value per share = Rs 100

Number of shareholder is 1400

NSMCL's shares are listed on Stock Exchange in 12 Mangsir 2050(28-10-1993)

Table : 4.9

Market Price Per Share and Dividend of NSMCL

Fiscal Year	Market Price Per Share(Rs.) (P)			Dividend Per Share (D)		
	High	Low	Closing	Cash(Rs.)	Stock(%)	Total(Rs.)
1996/97	110	50	105	-	-	-
1997/98	98	90	90	-	-	-
1998/99	108	90	100	10	-	10
1999/00	256	96	230	-	-	-
2000/01	300	180	180	-	-	-
2001/02	198	135	159	-	-	-
2002/03	200	125	125	-	-	-
2003/04	125	103	103	-	-	-
2004/05	122	103	120	-	-	-
2005/06	600	400	550	25	-	25
206/07	890	700	750	35	-	35

(Source: Refer trading annual report)

The closing price of the share of the Nepal Share Market Company Limited is in increasing trend from 97/98 to 99/00 and there is decreasing trend from 99/00 to 03/04 then after we can see increasing trend.

Figure : 4.9

End Year Price Movement of Common Stock of NSMCL

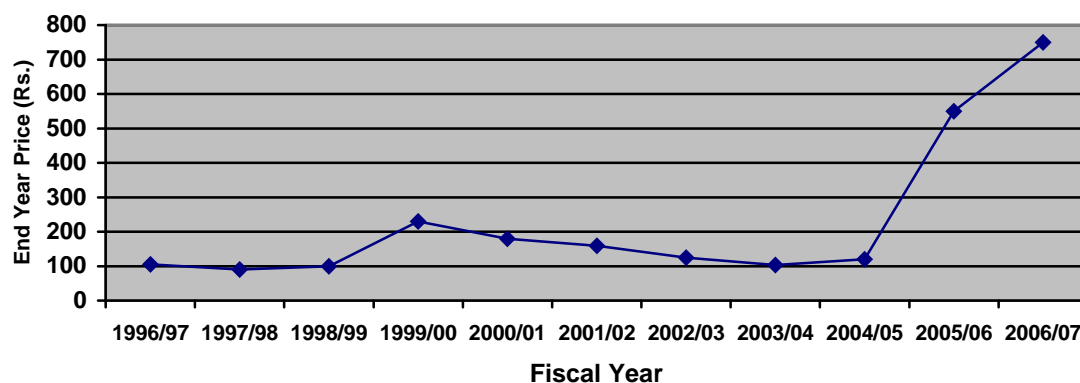


Table : 4.10

Statistical Analysis of the Common Stock of NSMCL

Fiscal Year	Year end Price (P)	Dividend (D)	$R = \frac{D_t + \Gamma(P_t - ZP_{t-1})}{P_{t-1}}$	$R - \bar{R}$	
1996/97	105	-			
1997/98	90	-	-0.143	-0.6460	0.4173
1998/99	100	10	0.222	-0.2810	0.790
1999/00	230	-	1.300	0.7970	0.6352
2000/01	180	-	-0.217	-0.7200	0.5184
2001/02	159	-	-0.117	0.6200	0.3844
2002/03	125	-	-0.214	-0.7170	0.5141
2003/04	103	-	-0.176	-0.6790	0.4610
2004/05	120	-	0.165	-0.3380	0.1142
2005/06	550	25	3.7917	3.2870	10.82
2006/07	750	35	0.423	-0.08	0.0064
Total			5.03		10.8064

We have,

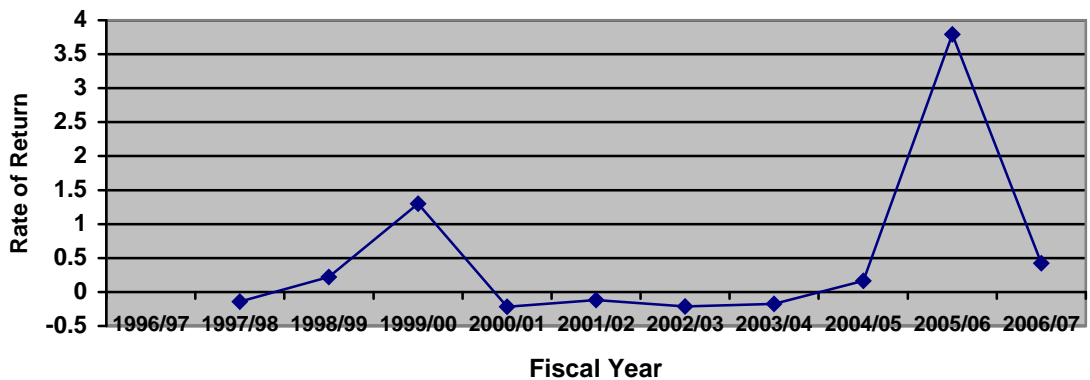
$$\text{Expected Return } (\bar{R}_j) \times E(R_j) \times \frac{\phi R_j}{n} \times \frac{5.03}{10} \times 0.5030$$

$$\text{Standard Deviation } (\sigma) \times \sqrt{\frac{\phi(R_j - \bar{R}_j)^2}{n \times Z1}} \times \sqrt{\frac{10.8064}{10 \times Z1}} \times 1.0958$$

$$\text{Coefficient of Variation } (CV_j) \times \frac{\sigma}{R_j} \times \frac{1.0958}{0.5030} \times 2.1785$$

Figure : 4.10

Annual Rate of Return of Common Stock of NSMCL



4.1.2 Comparisons of Expected Returns, Standard Deviation and Coefficient of Variance among selected finance companies

Table : 4.11
Expected Returns, S.D and CV of

Five Selected Finance Companies

S.N.	Company	Expected Return	Standard Deviation	Coefficient of Variation
1	KFL	0.522	0.672	1.28
2	NFS	0.619	1.25	2
3	NIDC CM	0.66	1.22	1.8485
4	NFCL	0.32	0.4645	1.45
5	NSMCL	0.5030	1.0958	2.1785

(Source: Refer Calculated Values of 4.2)

From the above table 4.11, it is clear that expected return of NIDC CM has highest return (66%) and NFCL has the lowest return (0.32%), the C.V of NSMCL (2.1785) is the highest and KFL (1.28) is the lowest, that means the return of NSMCL is more volatile and KFL is less volatile.

Figure : 4.11
Expected Return of Selected Five Finance Companies

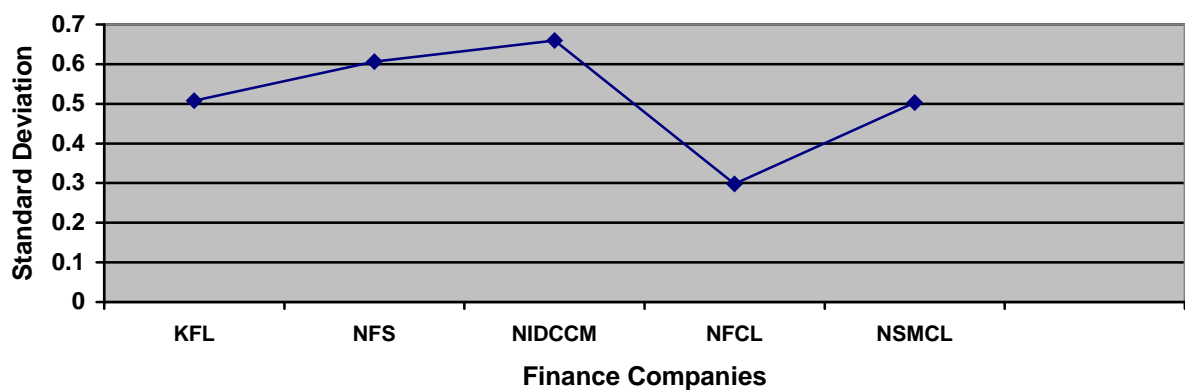


Table : 4.12

Comparison of weight of selected finance companies

S.N.	Finance company	Market	Weight
1	KFL	41.4	0.096
2	NFS	29.4	0.068
3	NIDC CM	87	0.203
4	NFCL	127.44	0.297
5	NSML	144	0.335
		429.24	

(Source: trading report of NEPSE on 7 July 2007)

Figure : 4.12

Standard Deviation of Selected Five Finance Companies

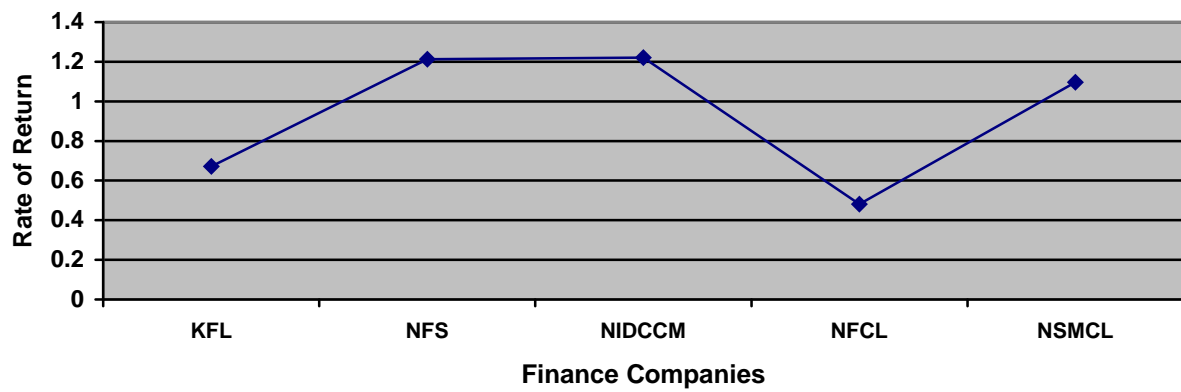
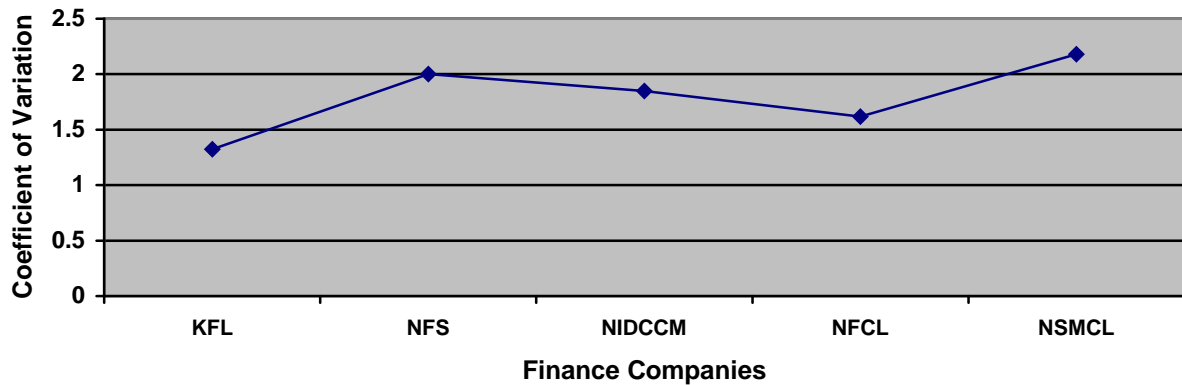


Figure : 4.13

Coefficient of Variation of Selected Five Finance Companies



4.1.5 Analysis of Inter Industry Comparison on the Basis of End Price

Before year 2001/02, the different company that was listed in NEPSE was categorized into six sectors i.e. Banks, Manufacturing & Processing Company, Hotel Trading Company, Finance Company and Insurance Company and others. But from the year 2001/02, it was categorized into eight sectors, splitting banking sector into commercial banks and development banks and finance company and insurance company as a separate sectors. So, for the convenient of the study in Table 4.19, the NEPSE index of commercial bank and development bank from year 2001/02 to 2003/04 as an average of the respective years and as so for the Insurance Company and Finance Company.

Table: 4.13

Sector Wise NEPSE Index at end Price of Each Year

F/Y	Banking	Manufacturing and Production	Hotel	Trading	Finance & Insurance	Others	Market
1992/93	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1993/94	254.94	236.44	615.60	136.55	682.83	304.33	226.03
1994/95	187.80	212.51	369.14	172.52	203.17	249.12	195.48
1995/96	155.63	198.41	371.16	206.08	194.53	216.15	185.61
1996/97	167.20	217.05	277.47	156.95	172.18	228.26	176.31
1997/98	194.95	226.65	244.49	160.58	176.32	221.59	163.35
1998/99	219.44	229.83	241.52	123.99	195.68	376.10	216.92
1999/00	397.17	340.59	346.15	123.74	305.98	308.46	360.70
2000/01	397.38	349.31	291.34	115.55	318.67	190.90	348.43
2001/02	219.35	273.67	216.51	102.20	262.29	77.34	227.54
2002/03	223.31	250.13	196.68	94.56	224.39	48.56	204.86
2003/04	224.75	194.76	194.76	95.88	221.13	141.74	207.92
2004/05	231.81	261.08	189.30	95.17	222.85	143.68	286.67
2005/06	365.94	301.11	220.77	148.11	321.31	248.2	386.83
0206/07	625.50	450.13	352.08	285.77	620.13	480.70	650.00

(Source: Trading report of NEPSE)

The detailed Calculation of realized return, expected return, standard deviation and coefficient of variance of each sector are shown at Appendix (AT-la-le) at the end of the study. Here the calculation coefficient of variance of finance sector and market are in the following.

4.1.5.1 Finance Sector

Realized return, expected return, standard deviation and coefficient of variance of finance sector are shown in following table 4.15 and finance sector's movement is shown in figure 4.16.

Table: 4.14
Statistical Analysis of the Common Stock of Finance Sector

Fiscal Year	Year end Price (P)	$R = \frac{FI_1 - ZFI_0}{FI_0}$	$(R - \bar{R})$	
1996/97	172.16			
1997/98	176.32	0.024	-0.1613	0.0260
1998/99	195.68	0.110	-0.0753	0.0057
1999/00	305.98	0.564	0.3787	0.1434
2000/01	318.67	0.041	-0.1443	0.0208
2001/02	262.29	-0.177	-0.3623	0.1313
2002/03	224.39	-0.144	-0.3293	0.1084
2003/04	222.85	-0.007	-0.1923	0.0370
2004/05	211.13	-0.008	-0.1933	0.0374
2005/06	321.31	0.52	0.3347	0.1120
2006/07	620.13	0.9300	0.7447	0.5546
Total		1.8530		1.1766

(source: Trading report of NEPSE)

We have,

$$\text{Expected Return } (\bar{R}_j) = \frac{\sum R_j}{n} = \frac{1.8530}{10} = 0.1853$$

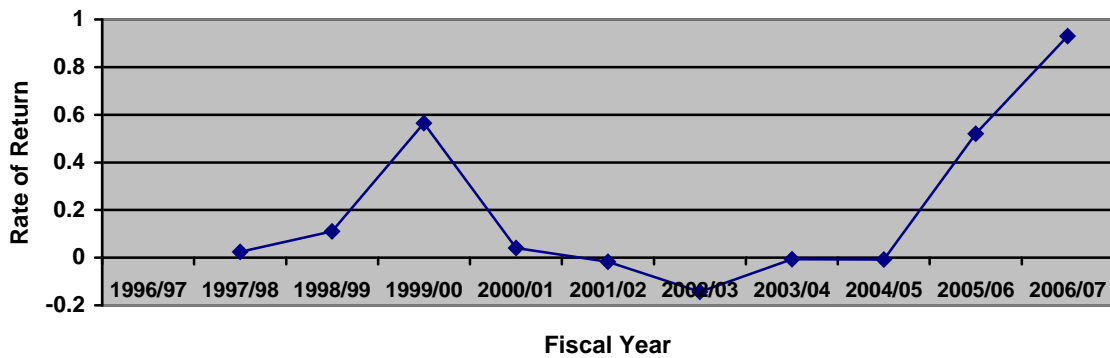
$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} = \sqrt{\frac{1.1766}{10}} = 0.3616$$

$$\text{Coefficient of Variation } (CV_j) = \frac{\sigma}{\bar{R}_j} = \frac{0.3616}{0.1853} = 1.9514$$

The expected rate of return of finance sector is 0.1853 i.e. 18.53%. Rate of return is not consistent during different year. The rate of returns in the year 2001 till 2005 has negative returns. The highest rate of return is 0.9300 i.e. in the year 06/07.

Figure: 4.14

Annual Rate of Return of Finance Sector



4.1.5.2 Market Risk and Return

The only one stock market of Nepal is Stock Exchange (NEPSE). Here NEPSE index represents the overall market movement. Realized return, expected return, standard deviation and coefficient of variance of market index are shown in following table 4.16 and NEPSE index movement and market return movement is shown in figure 4.17.

Table: 4.15

Statistical Analysis of the Common Stock of NEPSE Index

Fiscal Year	Year end Price (P)	$R = \frac{NI_1 - ZNI_0}{NI_0}$	$(R - \bar{R})$	
1996/97	176.31			
1997/98	163.35	0.074	-0.1260	0.0159
1998/99	216.92	0.328	0.128	0.0164
1999/00	360.7	0.663	0.4630	0.2144
2000/01	348.43	-0.034	-0.2340	0.0548
2001/02	227.54	-0.347	-0.5470	0.2992
2002/03	204.86	-0.100	-0.3	0.0900
2003/04	207.92	0.015	-0.1850	0.0342
2004/05	286.67	0.379	0.1790	0.0320
2005/06	386.83	0.3494	0.1494	0.0223
2006/07	650.70	0.68	0.48	0.2304
Total		2.00		1.0096

(Source: (Trading report of NEPSE))

We have,

$$\text{Expected Return } (\bar{R}_j) \times E(R_j) \times \frac{\phi R_j}{n} \times \frac{2}{10} \times 0.200$$

$$\text{Standard Deviation } (\dagger) \times \sqrt{\frac{\phi(R_j - ZR_j)^2}{n \times Z1}} \times \sqrt{\frac{1.0096}{10 \times Z1}} \times 0.3349$$

$$\text{Coefficient of Variation } (CV_j) \times \frac{\dagger_j}{R_j} \times \frac{0.3349}{0.2} \times 1.6746$$

The expected rate of return of the overall market is 0.2 (20%). During the different years the highest points of NEPSE Index is 650.70 recorded in the year 2006/07 while lowest point was 163.50 recorded in the year 1997/98.

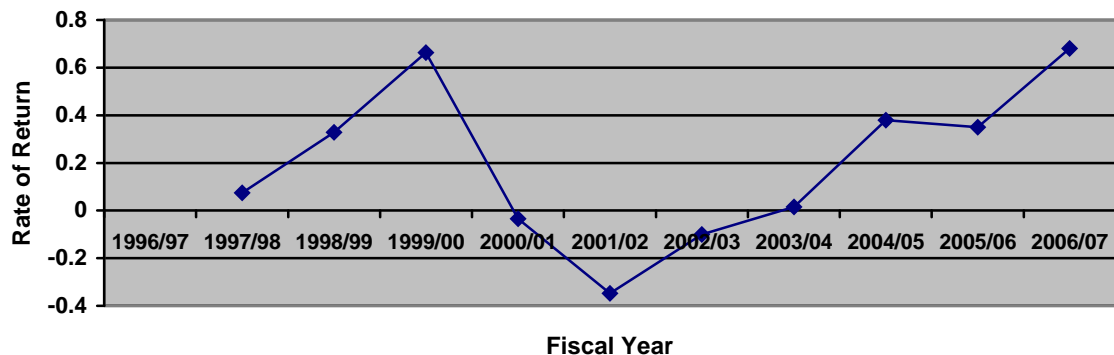
Where,

NI_0 = Starting NEPSE Index

NI_1 = Ending NEPSE Index

Figure : 4.15

Annual Rate of Return of Market Index



4.1.6 Comparison of Risk and Return of Different Sectors With Market Risk and Return

Risk and return of each sector is calculated on the basis of data provided and the model applied as per NEPSE. The expected return, standard deviation and coefficient of variance of sectors are shown in following table 4.17. Details of the calculation of these variables of each sector (beside finance sector and market) are shown in appendix (AT-la-le) at the end of this report.

Table No: 4.16
Expected Returns, S.D and CV of Different Sectors

S.N.	Sectors	Expected Return	Standard Deviation	Coefficient of Variation	Remarks
1	Bank	0.1978	0.3841	1.9418	
2	Finance	0.1853	0.3616	1.9514	
3	Hotel	0.0518	0.2701	5.21	
4	Manufacturing	0.1031	0.2618	2.5392	
5	Trading	0.1028	0.3563	3.4659	
6	Others	0.2737	0.7815	2.8553	
7	Market	0.20	0.3349	1.6746	

(Source: Refer Calculated Value from Table No. 4.14,4.15 and Appendix 1a-1e)

Expected Return

The expected return in other sector has highest (27.37%), where as the Hotel industries has lowest (5.18%) in overall sector compared to others.

Standard Deviation

Similarly on the basis of standard deviation other sector has highest (78.15%) and Manufacturing has the lowest value (26.18%)

Coefficient of Variance

The coefficient of variance of Hotel Sector is the highest (5.12) and coefficient of variance of market sector is the lowest (1.6746). It means investment on hotel sector is most volatile and investment on market sector is less volatile.

4.1.6.1 Test of Hypothesis

The Hypothesis-1 is based on the test of significance for difference between two sample independent sample means students (Student's 't' test)

Null Hypothesis (H₀)

$$H_0: \hat{\mu}_1 = \hat{\mu}_2$$

There is no significance difference between the portfolio return of the common stock of finance sector and overall market return. In other words overall return on common stocks of finance sector is equal to the market.

We have, Under H_0 , test statistics (t) is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where,

$$\bar{X}_1 = \text{Average return of the portfolio of finance sector} = 0.1853 \text{ (Source: Refer table 4.16)}$$

$$n_1 = n_2 = \text{No. of observation} = 10$$

$$\bar{X}_2 = \text{Average return of the portfolio of the market } (\bar{R}_m) = 0.20$$

$$S^2 = \text{Unbiased Sample Variance of Population}$$

Here,

$$S^2 = \frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2} = \frac{10(0.3616)^2 + 10(0.3349)^2}{10 + 10 - 2} = 0.1349$$

Where, S_1 = Standard deviation of finance sector

S_2 = Standard deviation of Market.

Therefore

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} = \frac{0.1853 - 0.20}{\sqrt{0.1349 \left(\frac{1}{10} + \frac{1}{10} \right)}} = -0.08949$$

$$\text{i.e. } |t| = 0.08949$$

Now, degree of freedom (d.f) = $n_1 + n_2 - 2 = 10 + 10 - 2 = 18$

From the student's t-distribution", the tabulated value of 't' for 18 degree of freedom (d.f) at 10%, 5%, 2% and 1% levels of significance are 1.33, 1.734, 2.552 respectively.

Conclusion

As the calculated value of 't' (0.08949) is less than the all tabulated value at 10%, 5%, 2% and 1% levels of significance, it is not significant and Ho is accepted. Thus we may conclude that there is no significant different between the portfolio return of the common stocks of finance sector and overall market return. In other words overall return on common stocks of finance sector is equal to the market.

4.1.7 Market Sensitivity Analysis

Analysis of market sensitivity gives very useful insight in the analysis and the selection procedure of common stock in the market which is explained by its beta co-efficient. Higher the beta greater is the sensitivity and higher will be the reaction by the individual common stock with the given movement in the market status. Beta measures the systematic risk, which cannot be eliminated through the means of diversification. Beta co-efficient of market is always 1. This statement can be provide as follows:

$$S_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} \times \frac{\sigma_m \rho_{jm}}{\sigma_m} = \frac{\text{Cov}(R_j, R_m)}{\sigma_m} \times \rho_{jm}$$

Where,

ρ_{jm} = Correlation between market return and individual stock's return,

Hence,

$$S_m = \frac{\text{Cov}(R_m, R_m)}{\sigma_m^2} \times \frac{\sigma_m \rho_{mm}}{\sigma_m} = \frac{\text{Cov}(R_m, R_m)}{\sigma_m} \times \rho_{mm} = 1$$

Hence, Beta coefficient of market is always equal to 1

Market sensitivity of stock is measures by it's beta coefficient. The beta coefficient of selected five companies are as follows:

Table No: 4.17

Beta Coefficient of Selected Five Companies

S.N	Finance Company	Beta Coefficient (S _j)
1	KFL	0.5615
2	NFS	2.1437
3	NIDC CM	2.7414
4	NFCL	0.695
5	NSMCL	0.9672

(Source: Refer appendix 2a-2d)

The table 4.19 shows that NIDC CM'S common stock is most sensitive because it's beta is highest and KFL'S common stock is least sensitive because it's beta is lowest.

Here using CAPM model, we have determined the ERR, RRR and evaluation of each stock, which are shown in table 4.18

Table : 4.18
Beta Coefficient of Selected Five Companies

S.N	Finance Company	Beta Coefficient (S _j)	RRR = $R_f + \beta_j (R_m - R_f)$	ERR	Price Situation
1	KFL	0.5615	0.123	0.508	Under price
2	NFS	2.1437	0.4	0.606	Under price
3	NIDC CM	2.7414	0.5047	0.66	Under price
4	NFCL	0.695	0.1466	0.2979	Under price
5	NSMCL	0.9672	0.1942	0.5030	Under price

(Source: Refer table 4.18 ,4.11)

Where,

R.f = Risk free rate of return = 0.025 (Quarterly economic bulletin, mid July 2007)

\bar{R}_m XMarket rate of return =0.20

Comparing RRR and ERR, Determine whether the stock is under pricing or over pricing. Above calculation shows that the stocks of all finance companies are under priced because their RRR is less than ERR

4.1.7.1 Test of Hypothesis-II

This Hypothesis-II is based on the test of significance for single mean Null Hypothesis

$H_0: \beta_1 = 1$, There is no significant different between the portfolio beta of financial sector and market beta.

We have,

Under H_0 , test statistics (t) is:

Where,

$$bp = W_j | s_j \times 1.28 \text{ (Source: Refer appendix AT-3a)}$$

$$S = \text{Estimated Population Standard Deviation} = 0.9343 \text{ (Source: Refer appendix AT-3b)}$$

n = No. of samples = 5 companies

$$t = \frac{bp - Z1}{\frac{S}{\sqrt{n}}} = \frac{1.28 - Z1}{\frac{0.9343}{\sqrt{5}}} = 0.67$$

Now, Degree of Freedom (d.f.) = n - 1 = 5 - 1 = 4

From the student's t-distribution, the tabulated value of 't' for 4-degree freedom at 10%, 5%, 2% and 1% level of significance are 2.132, 2.776, 3.747 and 3.747 respectively.

Conclusion

The calculated value of 't' is 0.67. As calculated value of 't' is less than the all tabulated value at 10%, 5%, 2% and 1% levels of significance, it is not significant and null hypothesis (H₀) is accepted. Thus we may conclude that there is no significant difference between the portfolio beta of financial sector and market beta. In other words, portfolio beta of finance sector is equal to the market beta.

4.1.8 Partition of Total Risk of Individual Finance Companies

We have,

Total risk = Systematic Risk + Unsystematic Risk

$$= s^2 + \sigma_m^2 + \text{Unsystematic risk}$$

$$\text{Unsystematic risk} = \sigma^2 - Z^2 s^2 - \sigma_m^2$$

Where,

$$\sigma^2 = \text{Total Variance of individual company}$$

$$s = \text{Beta}$$

$$\sigma_m^2 = \text{Total Market Variance}$$

For KFL Ltd

$$\begin{aligned} \text{Unsystematic risk} &= (0.672)^2 Z(0.5615)^2 | 0.1121 \\ &= 0.4162 \end{aligned}$$

$$\begin{aligned} \text{Systematic risk} &= (0.5615)^2 | 0.1121 \\ &= 0.03534 \end{aligned}$$

For NFS Co. Ltd

$$\begin{aligned} \text{Unsystematic risk} &= (1.23)^2 Z(2.1437)^2 | 0.1121 \\ &= 1.04 \end{aligned}$$

$$\begin{aligned} \text{Systematic risk} &= (2.1437)^2 | 0.1121 \\ &= 0.5151 \end{aligned}$$

For NIDC CM Ltd

$$\begin{aligned} \text{Unsystematic risk} &= (1.22)^2 Z(2.7414)^2 | 0.1121 \\ &= 0.64594 \end{aligned}$$

$$\begin{aligned} \text{Systematic risk} &= (2.7414)^2 | 0.1121 \\ &= 0.8424 \end{aligned}$$

For NFCL Ltd

$$\begin{aligned} \text{Unsystematic risk} &= (0.4615)^2 Z(0.695)^2 | 0.1121 \\ &= 0.1588 \end{aligned}$$

$$\begin{aligned} \text{Systematic risk} &= (0.695)^2 | 0.1121 \\ &= 0.0541 \end{aligned}$$

For NSMCL Ltd

$$\begin{aligned} \text{Unsystematic risk} &= (1.0958)^2 Z(0.9672)^2 | 0.1121 \\ &= 1.095 \end{aligned}$$

$$\begin{aligned} \text{Systematic risk} &= (0.9672)^2 | 0.1121 \\ &= 0.1048 \end{aligned}$$

4.1.9 Portfolio Analysis

A portfolio is a combination of different investment assets. The portfolio would be able to reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be added to a portfolio. It reduces a portfolio's total diversifiable risk to zero. Previous analysis is risk return is based on the investment in single security. They expected return of portfolio is simply a weighted average of the expected return of the securities comprising that portfolio the weights are equal to the proportion of total fund investment in each security. The sum of weight must be

100%. Analysis have shown that many Nepalese private investor placed their entire wealth in single asset investment if they construct a portfolio or group or investment in such kind of assets, which are negatively correlated. They can reduce unsystematic risk dramatically without loosing their return. Therefore, we need to extend our analysis of risk and return to portfolio context. Here, we are going analyze the portfolio. The analysis is based on two assets portfolio and the tools for analysis are described in the chapter-3, Research Methodology.

To analyze the two assets portfolios among the stock of five selected sample finance companies, First of all, we have to calculate the weight in each portfolio of two financial institutions with the calculation of covariance of two financial companies. And secondly, common stock of two selected sample finance companies is taken to construct the portfolio risks and portfolio returns of the two selected financial institutions.

Common stock of each five finance companies has already analyzed and has been shown in sections 4.1.1.1 to 4.1.1.5 so, here a detailed portfolio analysis of common stock of two sample finance companies and their respective covariance, risks and returns are shown.

4.1.9.1 Analysis of Risk Diversification

If the portfolio is created, it reduces the unsystematic risk dramatically without losing considerable return. Therefore, a brief analysis of risk and return is extended to portfolio context.

The expected return of a portfolio is simply a weighted average of the expected returns of securities comprising that portfolio. The weights are equal to the proportions of the total funds invested in each security.

"Not putting all eggs in one basket" or spreading the risks means simple diversification. The analysis is based on two assets and the tools for analysis are based on two assets and tools for analysis.

Table 4.21 shows the calculation of covariance of the returns of the given two stocks $Cov(R_A, R_B)$ and proportion of stock A (W_A) that minimizes the risk, standard deviation.

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

Where,

σ_A^2 = Standard Deviation of Stock A

σ_B^2 = Standard Deviation of Stock B

W_A = Proportion of Stock A

W_B = Proportion of Stock B

4.1.9.2 Portfolio Analysis Among Five Sample Finance Companies

For the five assets portfolio, let us say A, B, C, D and E be the common stock of the finance companies KFL, NFS, NIDC CM, NFCL and NSMCL respectively. To calculate the five assets portfolio risk, firstly covariance of the five assets has to be calculated.

Table No: 4.19
Portfolio Risk and Return

S.N	Portfolio	Weight	Covariance	\bar{R}_p	\bar{P}
1	KFL & NFS	W(A) = 1.129 W(B) = -0.129	0.5653	50.94%	66%
2	KFL & NIDC	W(A) = 1.021 W(B) = -0.021	0.4734	51.91%	67.16
3	KFL & NFCL	W(A) = -0.2556 W(B) = 1.2556	0.2556	26.83%	45.33%
4	KFL & NSMCL	W(A) = 1.325 W(B) = -0.325	0.599	28.81%	63.53
5	KFS & NIDC	W(A) = 0.3866 W(B) = 0.6134	1.362	64.4%	119.93%
6	NFS & NFCL	W(A) = -0.3653 W(B) = 1.3653	0.50	21%	33%
7	NFS & NSMCL	W(A) = -0.3815 W(B) = 1.3815	1.3498	45.87%	104.6%
8	NIDC & NFCL	W(A) = -0.2835 W(B) = 1.2835	0.446	22%	38.78%
9	NIDC & NSMCL	W(A) = 0.3238 W(B) = 0.6762	0.9350	55.38%	105.5%
10	NFCL & NSMCL	W(A) = 1.6295 W(B) = -0.6295	0.49	20.48%	97.34%

(Source: Appendix Table AT: 4a-4j)

By using diversification, we can eliminate risk. Diversification can only reduce risk but cannot increase return. Portfolio return is simply the average return of individual security's returns. Hence, average if high return is also high. While creating portfolio between NFS and NIDC, expected return is highest, 64.4% and their weight is 0.3866 and 0.6134.

4.1.10 Correlation

Most stocks are positively correlated not perfectly. In this situation, some risk can be reduced. Here correlation between each company is presented below.

4.2 Major Findings of the Study

Major findings of the study are summarized as below:

Expected Return, S.D. and C.V. of Banks are as below:

Bank	Expected Return	S.D.	C.V.	Remarks
KFL	0.522	0.672	1.28	Lowest C.V. Moderate C.V., S.D.
NFS	0.619	1.25	2	Moderate Return, S.D. C.V.
NIDC CM	0.66	1.22	1.8485	Highest Return and highest
NSMCL	.5030	1.10958	2.1785	Highest C.V. Moderate Return
NFCL	0.32	0.4645	1.45	Lowest Return Moderate SD., C.V.

(Source: Table 4.1)

On the basis of C.V. the coefficient of variation of NSMCL is high. NSMCL has 2.1785 unit or risk per 1 unit of return. NIDC CM has highest return (0.66) and highest S.D. (1.22)

Expected Return, S.D and C.V of each sector

S.N.	Sectors	Expected Return	S.D.	C.V.	Remarks
1	Bank	0.1978	0.3841	1.9418	
2	Finance	0.1853	0.3616	1.9514	
3	Hotel	.0518	.2701	5.21	Low Risk
4	Manufacturing	0.1031	0.2618	2.5392	
5	Trading	0.1028	0.3563	3.4659	
6	Others	0.2737	.7815	2.8553	
7	Market	0.20	0.3349	1.6746	

(Source: AT 1a-1c)

Expected return of other sector is found highest i.e. 27.37%, S.D. of other sector is also highest i.e. 0.7815 and expected return of hotel sector is lowest i.e. 5.18% and manufacturing sector has lowest S.D. i.e. 0.2618. As we know that the investment which has the highest coefficient of variation, return on that investment is more volatile and which has the lowest coefficient of variation, return on that investment is less volatile. From the study of difference investment sectors of Nepalese Capital Market, we found that coefficient of Variation of Hotel sector is highest i.e. 5.21. So Investment on hotel sector is most volatile. On the other hand, the coefficient of variation of market is lowest i.e. 1.67. So investment on market sector is less volatile.

) In hypothesis -I, the calculated value of 't' is (.8949) which is less than the all tabulated value at 10%, 5%, 2% and 1% levels of significance i.e. 1.33, 1.73, 2.10, 5.552 respectively. It means it is not significant and H_0 is accepted.

) Systematic risk of the difference companies under study are as below:

Beta of Each Companies

Company	Beta
KFL	0.5615
NFL	2.1437
NIDC CM	2.7414
NFCL	0.693
NSMCL	0.90

(Source: Table: 4.19)

-) It shows NIDC CM/s is high sensitive because it's beta is highest and KFL's common stock is least sensitive because its beta is lowest.
-) In hypothesis-II, the calculated value of 't' is 0.5088, which is less than all tabulated value at 10%, 5%, 2% and 1% level of significance. These are 2.13, 2.77, 3.74 and 3.74 respectively. It means it is not significant and null hypothesis is accepted.
-) All the companies under study are under priced

Correlation Between Each Company

	KFL	NFS	NIDC	NFCL	NCMCL
KFL	1	0.6749	0.5774	0.818	0.8134
NFS		1	0.8931	0.86	0.98
NIDC			1	0.7870	0.699
NFCL				1	0.9626
NSMCL					1

(Source: Appendix Table AT-50)

While creating portfolio of two assets, expected return on investing NFS and NIDC CM is found highest that is 64.4% and its S.D. is also the highest i.e. 119.9%.

Systematic Risk and Unsystematic Risk of Finance Companies

Company	Systematic Risk	Unsystematic Risk
KFL	0.03534	0.4162
NFS	0.5151	1.04
NIDC	0.8424	0.64594
NFCL	0.00541	0.1588
NSMCL	0.1048	1.0955

(Source: 4.1.8)

Portfolio management is a major board topic in investment analysis and management. Besides common stock, there are other different kinds of securities having different characteristics are available in Nepalese capital market. They are preference share, corporate bonds, government bonds, treasury bills etc. Construction of portfolio with considering all available securities is essential to get a maximum return with

minimum risk from stock market investment. This study has given only suitable example. Here only the portfolio of five assets from same industry is illustrated but there are so many opportunities set of portfolio in the market.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with the findings and conclusions derived from the study of above study. This chapter consists of three sections: the first section provides the summary of the study, the second section draws the conclusions of the study and the final section gives recommendations to the problem observed on the basis of the findings.

5.1 Summary

Risk and return is getting considerable attention in financial management central focus of finance is trade of between risk and return. And its major part, stock market and greatest glamour, not only for the professional or institutional investors but also for the individual or private investors. Development in the field of finance has led to the application of many new concepts and model to deal with various issues related to financial management.

The relationship between risk and return is described by investor's perceptions about risk and their demand for compensation. No investors will like to invest in risky assets unless he/she is assured of adequate compensation for the acceptance of risk. Hence, risk plays a central role in the analysis of investment. Investors often ask about an investment and like to know if the risk will command higher premium and the trade off between the two assumes a liner relationship between risk and risk premium.

Common stock is the most risky security and lifeblood of stock market. Because of higher expected return, an investment in common stock of a corporate firm neither ensures an annual return or principal. Therefore, investment in the common stock is very sensitive on the ground of risk. Dividends to common stock holders are paid only if the firm makes an operating profit after tax and preference dividend. Common stock has attracted more investors in Nepal. Rush in the primary market during the primary issue if one of the examples. Private C.S holders are the passive owners of the company. But private investors play a vital role in economic development of the nation by the mobilizing the dispersed capital in different form in the society.

In Nepal, the concept of financial institution was introduced when the first financial institution, Industrial Development Corporation in 1957. Later it was converted in Nepal Industrial Development Corporation in 1959 by specific charter. Then after three financial institutions were established in 1992 under the company act at 1964. They are NIDC Capital Market Ltd., Nepal Finance and Saving Co. Ltd., and National Finance Co. Ltd. Subsequently various financial institutions are established after then. Due to change in economic policy of the nations and adoption of open economic policy of the government, the established of the financial institutions are increasing. And the people's participation in security investment and stock trading is increasing unexpectedly. Even though the investors do not have enough knowledge to invest in security.

As overall economy, Nepalese stock market is in emerging trend. Nepalese people's participation in common stocks investment and stock trading is increasing unexpectedly. But common is the most risky security. To get success from it, we need sound knowledge about the situation of market and in which common stock we are going to invest. But we see that, due to lack of information and poor knowledge, Nepalese private investors cannot analyze the securities as well as market properly as a result there may be chance of loss. The investors are responsible for making rational investment decision. So, this rational knowledge is essential.

The main objective of the study is to analyze the risk and return in common stock investment of Nepalese finance companies. The study is focused on the common stock of listed 5 finance companies. Hence 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 related studies has been performed. Books, journals and Masters Research works are reviewed for the research purpose. Very limited articles about Nepalese capital market are found.

Secondary data from various source i.e. website of Finance Companies, SEBO/N, NEPSE, NRB, Books and Annual reports published by SEBO/N, NEPSE and insurance companies are analyzed. Par value of all Finance Companies (Sample Companies) equal as Rs. 100. Expected Rate of Return, Standard Deviation, Co-efficient of variation and beta co-efficient of individual Finance Companies are

calculated. Portfolio risk return and risk between companies are calculated. Sector wise risk return and beta co-efficient are also calculated. Correlation co-efficient between companies is also calculated.

5.2 Conclusion

Most of the people considered stock market investment as a black art that they have unrealistically optimistic or pessimistic expectations about stock market investment or perhaps a fear of the unknown. This study enables investors to put the returns they can expect and the risks they may take into better perspective. Nepalese stock market is in emerging stage. Its development is accelerating since the political change in 1990 in effect of openness and liberalization in national economy. But, Nepalese individual investors cannot analyze the securities as well as market properly because of the lack of information and poor knowledge about the analysis of securities for investment.

-) The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on the common stock of NIDC CM is maximum (i.e. 66%). Which is very high rate of return. This result exists because of the issued bonus share and cash dividend and increase in share price. Similarly expected return of the C.S of NFCL is found minimum (i.e. 32%).
-) In the context of different sectors like banking, finance, hotel, manufacturing, trading and other sectors. Expected return of other sector is highest i.e. 27.37% and it is most risky, because it has higher S.D. i.e. 0.7815. Standard deviation of manufacturing sector is lowest i.e. 0.2618. so, manufacturing sector is less risky. The expected return of overall market is 20%.
-) As it is known that the investment, which has the highest coefficient of variation, return on that investment is more on that investment is less volatile. From the study of difference investment sectors of Nepalese Capital Market, it is found that coefficient of variation of Hotel sector is highest i.e. 5.21. So Investment on Hotel Sector is most volatile. On the lowest i.e. 1.94. So investment on Bank is less volatile. It means return on Hotel Sector is more Volatile (high risk) and return on Bank Sector is less volatile (Less risky).
-) In Hypothesis-1, the calculated value of 't' is (0.08949) is less than all tabulated value at 10%, 5%, 2% and 1% level of significance i.e. 1.33, 1.73, 2.10 and 2.55

respectively. So it may be concluded that there is no significant difference between the portfolio return of the common stocks of finance companies and overall market return. In other words, overall return on common stock of finance company is equal to the market rate of return.

-) Standard deviation is only the measure of unsystematic risk, which is not defined by the market. Another major aspect of the risk is the beta coefficient (β). Beta coefficient explains the sensitivity or volatility of the stock with market. Higher the beta, greater the volatility. In this context, common stock of NIDC CM is most sensitive (i.e. $\beta = 2.7414$) and common stock of KFL is least sensitive (i.e. $\beta = 0.5615$). The finance's stock having the beta more than beta coefficient of market i.e. more than 1 is aggressive type of common stock and less than 1 is defensive stock. It can be found that NIDC CM, NFS have aggressive type of common stock and remaining finance companies have defensive stocks.
-) The test accepts the null Hypothesis at 10%, 5%, 2% and 1% level of significance. So it can be concluded that there is no significant difference between the portfolio beta of financial companies and market beta.
-) CAPM describes the relationship between risk and equilibrium return in this model, risk free rate plus a premium based on systematic risk of the security is equilibrium rate of return of the stock. Comparing expected rate of return and equilibrium rate of return, finance companies are under priced. This implies there is chance of increase of stock value in near future, So investor can purchase of CS of any companies.
-) Using Markowitz Diversification, risk could be diversified on investing in two or more assets. Investing on KFL and NSMCL, unsystematic risk could be reduced to 63.53%. Before diversification, risk of these companies are 67.2% and 109.58% respectively.
-) Correlation Coefficient between KFL and NIDC CM is very low i.e. 0.5774 and correlation between NFCL and NSMCL is very high i.e. 0.9626.
-) Diversification of fund by making a portfolio can reduce unsystematic risk of individual security significantly. If investors select the securities for investment, which have highly negative correlation of returns, the risk can be reduced totally. If the correlation between the returns of two stocks is highly positive, risk

reduction is not so significant. So, portfolio between the C.S of same industry cannot reduce risk properly.

-) However return cannot increase substantially, the risk can be reduce by diversification of funds in different stocks making portfolio of five sample stocks. Well diversification can eliminated the systematic risks of the finance companies.
-) Most of the investors invest only keeping the return in the mind but they are found unable to calculate the risk factor of the security. Most of the Nepalese private investors invest in single security. But it found that they do not make any analysis of portfolio before selecting securities. They invest their fund in different securities rather than analysis of the effect of portfolio. It seems that do not have knowledge of the risk diversification by using portfolio of their investment.

5.3 Recommendations

Following recommendations are forwarded on the basis of there search work. The recommendations are presented separately for inventors and institutions.

1. For Investors

To beat the stock market, proper analysis of individual security, industry and overall market is always required. Every one should analysis the contemporary political situation of the country. This is proved by past political situation and declining of NEPSE index. An investors should buy securities when market is rising (NEPSE index) and sell securities when market performance is falling, hold securities, which are performing better than the market.

Investors need to diversify their fund to reduce risk. Proper construction of portfolio will reduce considerable potential loss, which can be defined in terms of risk. But portfolio construction is dynamic job. For the portfolio construction, select the stocks that have higher return with low risk and stock from different industries.

This study suggests that similar stock cannot diversify the risk properly and some risk can be reduced by investing in constructing portfolios (5 assets) rather than investing in individual/single assets. So, the construction of portfolio among the common stock

of five assets i.e. KFL, NFS, NIDC CM, NFCL & NSMCL is recommended due to same expected rate of return with less risk.

Investor should invest in CS of NIDC CM so that investor could easily forecast rising or falling of his/her wealth position with respect to the market return since systematic risk of the NIDC is high. Higher the risk, higher the return.

In case of portfolio construction among many assets, it is recommended to invest in the assets whose correlation is negative since there will be more reduction or risk. Higher the coefficient of correlation, less degree of risk is reduced.

Analysis of personal risk attitude, needs and requirements will be helpful before making an investment decision in stock market. Investors should make several discussions with stockbroker before reaching at the decision. Investors should take make their decision on the basis of reliable of reliable information rather than the imagination and rumors.

2. For Institutions

NEPSE being a major operative body in the area of secondary market should keep on developing the different parameters related to the congenial functioning of the stock market. It needs to get into the modernization and further to this it needs to develop efficient and effective channels of information related to investment in companies listed.

Securities Exchange Board/ Nepal being the apex body in our nation for the regulation and development of capital market, it should initiate research and development program, seminars, workshops, training program etc. in interval of time. It should be stricter regarding rules and regulation in securities trading. SEBO/N seems to be more flexible towards corporations.

In order to develop the healthy economic system in the country government should be keeping devising and issuing rules and regulation regarding the operation of stock market. Government needs to manage government securities trading from NEPSE trading floor. Government needs to amend of rules and regulations regarding stock

trading time to time. Political stability is must for the economic prosperity and increasing trend of business.

The corporate firms should communicate the real financial statements. Value of assets and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.

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Appendix I (AT-1)

Appendix

Table: (AT-1a)

Realized Return, Standard Deviation and Expected Return and Coefficient of Variation of Banking Sector.

Fiscal Year	Year End Price (P)	$R = \frac{BI_1 - ZBI_o}{BI_o}$	$(R - \bar{R})$	$(R - \bar{R})^2$
1996/97	167.2			
1997/98	194.95	0.166	-0.0318	0.0010
1998/99	219.49	0.126	-0.0718	0.0052
1999/00	397.17	0.810	0.6122	0.3748
2000/01	379.38	-0.045	-0.2428	0.0590
2001/02	219.35	-0.422	-0.6198	0.3842
2002/03	223.31	0.018	-0.1798	0.0323
2003/04	224.75	0.006	-0.1918	0.0368
2004/05	231.81	0.031	-0.1668	0.0278
2005/06	365.94	0.5786	0.3808	0.1450
2006/07	625.50	0.7093	0.5115	0.2616
Total		1.9779		1.3277

(Source: Refer Table 4.13)

We have,

$$\text{Expected Return } (R_j) \times \frac{R_j}{n} \times 0.1978$$

$$\text{Standard Deviation } (\dagger) \times \sqrt{\frac{(R_j - \bar{R}_j)^2}{n \times 1}} \times \sqrt{\frac{1.3277}{9}} \times 0.3841$$

$$\text{Coefficient of Variation (C.V}_j) \frac{\dagger_j}{R_j} \times \frac{0.3841}{0.1978} \times 1.9418$$

Where,

BI_o = Last year's Banking Sector's Index

BI_1 = Ending Banking Sector's Index