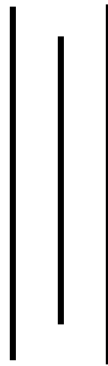


**IMPACT OF RISK AND RETURN ON SHARE PRICE  
WITH REFERENCE TO FINANCIAL SECTOR**

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**A Thesis Submitted to:  
Office of the Dean  
Faculty of Management  
Tribhuvan University**



*In partial fulfillment of the requirement for the Degree of  
Master of Business Studies (M.B.S)*

**Kathmandu, Nepal  
January, 2010**

## **RECOMMENDATION**

This is to certify that the Thesis

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I hereby declare that the work reported in this thesis entitled “**IMPACT OF RISK AND RETURN ON SHARE PRICE WITH REFERENCE TO FINANCIAL SECTOR**” submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master Degree in Business Studies (M.B.S.) under the supervision of **Prof. Dr. Kamal Das Manandhar** and **Dhurba Subedi** of Shanker Dev Campus.

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## ABBREVIATIONS

%	:	Percentage
&	:	And
A.D	:	Anno Domini
AGM	:	Annual General Meeting
B.S	:	Bikram Sambat
BOKL	:	Bank of Kathmandu Ltd.
C.V.	:	Co-efficient of Variation
CAMP	:	Capital Assets Pricing Model
DPS	:	Dividend per Share
e.g	:	Example
EBIL	:	Emirates Bank International Ltd.
Fig.	:	Figure
HBL	:	Himalayan Bank Ltd.
HMG	:	His Majesty's Government
i.e.	:	That is
JVBs	:	Joint Venture Banks
KFC	:	Kathmandu Finance Company Ltd.
Ltd.	:	Limited
MBA	:	Master of Business Administration
MBS	:	Master of Business Studies
MPS	:	Market Price per Share
NA	:	Not availability of Data
Nabil	:	Nabil Bank Ltd.
NBLB	:	National Bank Ltd., Bangladesh
NCC	:	Nepal Commerce Campus
NEFINSCO	:	Nepal Finance and Savings Company Ltd.

NEPSE	:	Nepal Stock Exchange Ltd.
NFC	:	National Finance Company Ltd.
NIBL	:	Nepal Indosuez Bank Ltd.
NIC	:	Nepal Insurance Company
NIDC CM	:	Nepal Industrial Development Corporation Capital Market Ltd.
NRB	:	Nepal Rastra Bank
NSMEC	:	Nepal Share Market Company Ltd.
OTC Market	:	Over The Counter Market
PIC	:	Premier Insurance Company
Rs.	:	Rupees
S.D.	:	Standard Deviation
SCBL	:	Standard Chartered Bank (Nepal) Ltd.
SEBO/N	:	Security Board of Nepal
T.U.	:	Tribhuvan University
UIC	:	United Insurance Company
Viz	:	Namely

# CHAPTER – I

## INTRODUCTION

### 1.7 General Background

Nepal is landlocked and fascinating country lying in the lap of Himalayas. This exotic land is blessed with an abundance of unspoiled natural beauty. However, economically, Nepal is considered as one of the least developed countries in the world. Lack of capital being the main reason behind the underdeveloped, results in the poorly developed economy. Planned economic developed has been the main process for Nepal to raise its economy. Recently, Nepal has adopted the path of economic development through liberalization. However, it is a known fact that any strategy for economic development requires a steady supply of funds for productive investment. Productive investment refers to the investment venture in productive enterprises.

For the growth and existence of the productive enterprises, there will be a need of short to medium to long-term capital funds. These required funds could be raised through financial market. Money market and capital market are the two components of financial market. Short-term funds are provided by money market whereas medium & long-term funds are provided by capital market. This study is mainly concerned with the study of capital market only. The two components of capital market are securities market & non-securities market. Among them, the main focus of this study is on securities market.

Securities market refers to the market where securities like government bonds, corporate bonds, debentures, ordinary shares, mutual funds & certificates, etc, are bought and sold as other commodities. There are two types of securities market existing in an economy viz. primary & secondary market. Primary market refers

to the market for new issue whereas secondary market principally refers to the stock market. Generally, stock market is considered as the major component of securities market. It has been a global phenomenon in the present world regardless of the size of the economy of any particular nation. It is a medium through which the corporate investment will be dispersed to many investors by issuing shares in the market. Similarly it is the medium through which the best investment opportunity will be provided to the investments.

It's a known fact that almost all of the profitable projects require a long-term venture of finance and most investors tend to avoid the risk and are often ready to tie their capital into the long-term commitment. So, stock market liquidity is very influential in the economic development of a country. Besides, stock market makes the investment less risky and more attractive because the investors can sell the securities quickly and easily if they want to get back their savings even before the project matures. Hence, stock market is very useful to the big organizations as well as the public investors.

As already mentioned that stock market principally refers to the secondary market in which brokers play primary role in making transactions for that they will receive commissions. Hence, brokers may be considered as the backbone of stock market for its smooth operation and growth. Thus, the stock market is a place where shares of listed companies are traded and transferred from one hand to another at a fair price through the organized brokerage system. As it is said that in an efficient market, prices fully reflect the available information.

For the smooth operation and to maintain requisite liquidity in the stock market, the market has to be efficient in pricing the shares. Today's era is organized as the era of competition. There is a cutthroat competition existing in the stock market also and the participants in the market would be dealing with the fair prices of the



securities only. In other words, it can be said that the actual prices of the security represent the best estimate of its intrinsic value. And the investors are very much conscious about the intrinsic value of the securities. Further, the pricing in the market allocates the scarce resources efficiently into the best usage on the interest of the country. Hence, stock market encourages savings, help channel savings into productive investment and encourage entrepreneurs improve the efficiency of investment. These activities are considered as a vital part of economic development of a country. In short it can be said that stock market plays a vital role in the economic development of any country. Now we can understand the role of stock market in the economic development of a country so, it should be made efficient. If the market is efficient in pricing the shares then it can be said as efficient stock market. Hence, pricing plays an important role in the efficient market. Pricing of the shares is very delicate process. Any carelessness in this process will result in the negative impact in the development of a country's economy. Pricing depends upon the lot of factors viz. economic factors, environmental factors, financial factors, etc. But in this study we are concerned with the financial factors with reference to the risk & return only, which are the most important factors in the pricing of the shares.

In Nepal, NEPSE, a nonprofit organization, is only an organization, which has authority to impart free marketability and liquidity to the government bonds and corporate securities by facilitating transactions in its trading floor through financial intermediaries. NEPSE has only authority in the pricing of the shares. People who buy shares are common stock holders and they are residual ownership of the firm or in other words they are investors. They are also the participants in the risk and return of their investment. Common stock may be considered as risky security. Hence price of the share highly depends upon the risk and return of the investment.

Risk and return of any investment is directly proportional to each other i.e. if there is high risk in an investment then there will be more chance of high return. "Risk was defined as the variability of the possible outcomes from that which was expected." As we know risk is the fact of investment. It is considered as a product of uncertainty whose magnitude depends upon the degree of variability in uncertain cash flows. In fact, risk is an indication of chance of losing investment. So, investors are generally found to be risk adverse. But one cannot forget the presence of risk in any investment. Without risk there will be no investment and without investment one cannot even imagine of the return. Different people have different interpretation regarding risks. For some, it's a fact, for others it is simply a lack of definite outcome, which can be any unknown unfavorable event. Hence risk is a degree of variation between real and expected outcomes.

Return is the result of risk i.e. return is the reward for taking risk. In other words, it is the income received in investment. People invest their belongings with an expectation of getting some reward for leaving its liquidity. So they are risk conscious, they only invest in those opportunities where they can get higher return. Investment decision are based on expectations about the future i.e. expectations for both risk and return. Rate of return is the most important outcome from an investment. Hence investors want favorable return to be yield by its stock and invest in those, which yield more return. The return on investment is dividend plus changes in market price of the shares. It is expressed in percent. Return is uncertain, so the actual return on investment in common stock may differ substantially from the expected return. However, return cannot be increased substantially but risk can be reduced by diversification of funds in different stocks making a portfolio. Hence, return is the motivation to the investors for taking more risk in future also.

A stock reflects the uncertainty about future return. The main source of uncertainty is the price at which the stock will be sold. Dividends tend to be much more stable than stock prices which contribute to the immediate return received by investors and at the same time reduce the amount of risk. Stock price is affected by economic factors such as interest rates, economic growth, inflation, etc. It is also affected by micro-economic factors such as specific policies enacted by a firm, policies of the government, policies of international trade, etc. Hence, the investment in common stock is considered as the risky investment. And the risk of which can be measured by its price volatility i.e. its beta.

### **1.8 Statement of the Problem**

In a rational investment decision, risk and return analysis plays a crucial role. This analysis helps to select the less risky as well as profitable investment area among the different alternatives.

Capital market in Nepal has short history. The concept of capital market had emerged only after the establishment of the NEPSE. After that it had grown rapidly within a very short span of time. Since, the problem of Nepalese Stock market have not been diagnosed and identified so, the policy makers are unable to make the appropriate policy for the development of the stock market. Most of the government efforts for the stock market have not contributed at its best to develop the market. Behavior of the stock prices shows the mis-valuation of the stock prices and the timely price-earning information is not made available to the investors. Besides our capital market do not have separate institutions, which can provide valuable information regarding stock market behavior, fluctuations in stock prices, risk-return analysis of individual and portfolio stock investment to the rational investors, which assist in accelerating the stock market efficiency. Due

to the lack of information, it is most likely that the stock intermediaries to an extent exploit investors that they may feel total wastage of money and time by investing in common stock.

Investors are responsible for making rational investment decision. But the lack of information and poor knowledge hinders the making of rational decision. Besides investors attitude and perception also plays important role in investment decision. In Nepal most of the investors do not have their own perception. They just go for others successful investment ventures. Further, they even can't understand the risk return behavior of the securities. Knowledge of business environment, stock price behavior, company's dividend policy, government policy towards general public investors, individual company's growth rate is very essential for an investors. Not only general public even the university graduates and postgraduates do not seem to have idea of the risk and return of the stock. Due to lack of information to analyze the risk and return on common stock investment, investors seem to be confused in making rational investment decision. Another serious problem in Nepalese Stock Market is the lack of value judgment to determine the stock prices. Besides the turnover of shares is very thin because the stock market of Nepal is operating in an immature stage but there has been continuous addition to the no. of listed companies.

For the development of proper investment situations the government has not given the requisite encouragement. The government does have plans and policies for it but they are merely a paper work, none of them have been implemented for the purpose. Investors are the main source of fund for any company and they are the backbone of economic development of the nation. But they are not given the required concern. It's because of lack of regular communications. In any sort of business, communication plays a crucial role, without it one will be isolated.

Hence, in Nepal, major weakness is seen in the implementation of stock market efficiency. The main reasons behind it are lack of education, lack of knowledge of risk and return, lack of policies, lack of information (communication), lack of resources and technologies, etc, that hinders the analysis of risk and return of individual and portfolio stock.

### **1.9 Objective of the Study**

This study aims to examine the role of risk and return in the price of shares. This study objects to find the in-depth knowledge about whether the risk and return factors of the investment affect the price of the shares or not. Hence, the basic objective of this study is to analyze the impact of risk and return on share price. To draw conclusion on the basic objective, many sub-objectives can be analyzed. So, the more specific objective, many sub-objectives can be analyzed. So, the more specific objectives are as follows:

1. To evaluate common stock investment in terms of risk and return;
2. To analyze whether the shares are overpriced or under priced;
3. To specify how risky to invest in the common stock;
4. To explore the risk minimization process; and
5. To provide feedback about the effect of risk and return analysis on the stock market in Nepal.

### **1.10 Significance of the Study**

This study will be more significant for exploring and increasing the stock investment. This study is used, as partial fulfillment for Masters of Business Studies. Besides it will provide little knowledge of Nepalese stock market. People had been entered in stock market without proper analysis due to the exaggeration and rumors about it. Now most of the participants repel from the stock market. This situation indicates that there is a high potentiality in stock investment, which

can be changed into fruitful investment by increasing transparency, flow of information and developing analytical power of public stock investors. And consequently this will increase the national economic wealth.

The analysis of risk and return is very important in making managerial decision. Besides, investors are responsible for making rational decision. So, this study is very significant for analyzing risk and return ultimately assisting investors in making rational decision. These studies also influence the risk and return of the shareholders consequently the risk and return analysis influences the market price of the stock. Hence, before making a deal investors must analyze the risk and return of an individual stock as well as the good portfolio between the investments.

Public participation in security investments had just increased unexpectedly after the political change in Nepal in the year 2046 B.S., but the expected target of success could not be reached. It's all because of insufficient and inadequate knowledge to the investors, which is an indication that there exist the tremendous potential for the growth of stock market. So, this study is significant in providing knowledge to the investors about the risk and return of their investment.

### **1.11 Limitations of the Study**

In spite of the conceptualization made, analysis performed and generalization drawn regarding the impact or risk and return analysis on share price, there may be many areas for the criticism in this study. Due to the time and resource constraints this study unexceptionally has as with some others the following limitations:

- ) This study is based on the tools developed in context of efficient market conditions but in reality it may not be so.

- ) No effort has been made to verify the data provided by the Nepal Stock Exchange Ltd (NEPSE) and others corporate bodies from their official records.
- ) The organizations taken under this study have totally different operation. They are listed with the stock market at different time. So, this might affect in the conclusions drawn, which are not examined.
- ) This study is to fulfill the partial requirement of the MBS program. So, it may not be precise.

### **1.12 Organization of the Study**

This study is organized in five chapters.

First chapter is named introduction, which deals with the basic of the study. This chapter covers General background, Statement of problem, Objectives of the study, Significance of the study, Limitations and Organization of the study.

Second chapter named review of literature deals with the study of available literatures already existed about the topic. This includes review from books, review from other thesis as well as the introduction of the organizations taken for this study.

Third chapter named research methodology deals with methodology, tools and techniques used for sources of data, hypothesis of the study, tools used for analysis of the collected data.

Fourth chapter named presentation and analysis of data is the main body of the study. It will analyses, interprets and scores the empirical findings of the study.

Fifth chapter named summary, conclusions and recommendation is the conclusive one. It summarizes the study, draws conclusions from the study and if necessary also recommends as per the conclusion. After this chapter there will be bibliography and appendices.



## **CHAPTER – II**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

In this section previous studies related to the subject matter of this research are reviewed to provide foundation for the present study. This study is simply the continuity in research. “The purpose of reviewing the literature is to develop some expertise in one’s area to see what new contributions can be made and to receive some ideas for developing a research design” (Wolff and Panta, 1999: 30).

Theoretical aspects of risk and return are explored in this aspect. In this chapter, some basic academic course books, journals and other, related studies are reviewed. There are very limited research works performed in this specific topic “Impact of Risk and Return on Share Price”. But some of the master degree thesis somehow related to this topic and independent studies carried out by researcher are also taken into consideration.

#### **2.2 Conceptual Framework**

Investment, risk and return are the financial terms, which are relatively associated with each other. Investment simply means sacrificing current fund for future cash inflows and the future is uncertain. Uncertainty obviously points out risk. So, in this section, books from different authors are reviewed to conceptualize the subject matter.

##### **2.2.1 Investment**

“Investment is the sacrifice of certain present value for the uncertain future rewards. According to Mr. Bhalla there are basically three concepts of investment” (Bhalla, 1983: 3).

1. Economic investment: i.e. an economists’ definition of investment.

2. Investment in a general or extended sense, which is used by ‘the man of the street’.
3. The sense in which it is going to be very much interested namely financial investment.

Broadly speaking an investment decision is a trade off between risk and return. The sacrifice takes place in the present and in certain. The reward comes later and the magnitude is generally uncertain. According to Z. Bodie, A. Kane & A.J. Marcus “An investment is the current commitment of money or other resource in the hope of reaping future benefits”.

Every investment entails some degree of risk. It’s commitment of money that is expected to generate additional money. An investment will select the investment that will provide the maximum future return at an acceptable level of risk. A wide range of investment alternative is available to individual investors. In addition to the traditional common stock, preferred stock and bond alternatives, other financial assets- such as convertible, warrants, rights, commodity future, financial future and options on individual common stock. Real assets alternative such as real estate, precious metals and collectibles are available for investment. This alternative investment fall into eight major categories (Cheney and Mosses, 1995:8 ).

1. 1 Equity securities
2. Short-term debt securities
3. Intermediate and long term debt securities
4. Hybrid securities
5. Derivative securities
6. Real assets
7. International investment

## 8. Other investment alternative

Among various investment alternatives, the preset study concerns with the common stock investment only.

### **Common Stock**

Common stock represents equity or an ownership position in a corporation. It is residual claim, in the sense that creditors and preference shareholders must be paid as scheduled before common stock holders can receive any payments. In bankruptcy common stock holders are in the principal entitled only to any value remaining after all other claimants have been satisfied.

According to Mr. Bhalla when investors buy common stock, they receive certificate of ownership as a proof of there being part owners of the company. The certificate states the number of share purchased and their par value (Bhalla, op.cit.p.196). Common Stock is the first security of a corporation to be issued and, in the event of bankruptcy, the last to be retired. It is the ownership interest of a corporation. Each share of stock is fraction of the rights and privilege that belongs to the owners of a business. A stock certificate is evidence of that fractional ownership.

Benjamin Graham has described the nature of common stock very aptly “Common Stocks have one important investment characteristics and one important speculative characteristic. Their investment value and average market price tend to increase irregularly but presently over the decade as their net worth builds up through the reinvestment of undistributed earning. However, most of the time common stocks are subject to irrational and excessive price fluctuation in both

directions as the consequences of the ingrained tendency of most people to speculate or gamble, i.e. give way to hope, fear and greed” (Graham, 1995:98).

As owners, common stockholders are entitled to certain rights and privileges according to J.M. Cheney & E.A. Moses: (Cheney & Moses, op.cit, pp. 411-416).

**i. Control:**

Common stock has voting rights that can be used to elect corporate directors that, in turn appoint the corporate officers.

**ii. Preemptive Right**

A preemptive right gives existing shareholders the first option to purchase a proportionate interest in a new issue of a corporation stock. The purpose of this provision is to protect stockholders against a loss of voting. Control and dilution in the value of their shares. The preemptive right is usually satisfied by the use of right offering.

**iii. Liquidation Rights**

As owners rather creditors, common stockholders receive no priority in the distribution of assets resulting from a liquidation of a corporation. Typically, after assets are sold and liabilities and preferred stockholders are satisfied, little if any cash will be available for common stockholders. Financial resources are available, even for periods when the corporation has experienced a loss.

**iv. Right to Income and Distribution of Additional Shares**

Common stock holders have no legal right to receive income distribution from the corporation. As a practical matter, however, the board of directions may declare cash dividends to the stockholders, provided the

### **Common Stock Values**

The common stock value includes par value, book value and market value. These terms are quite different and in some cases the dollar amounts of these values are not related for an individual stock.

#### **i. Par Value**

The face value of the stock, established at the time the stock is initially issued is par value. Without a stock split or other action by the board of directors, the par value of the stock does not change. In Nepal common stock are often issued at par value of Rs. 100.

#### **ii. Book Value**

Book value per share is calculated by dividing the total common equity on the balance sheet by the numbers of common shares outstanding. This figure represents the assets value per share after deducting liabilities and preferred stock. Typically, common stock in profitable corporation will be valued based on earning power and will sell at price significantly greater than book value.

#### **iii. Market Value**

Market value in the secondary markets is determined by supply and demand factors and reflects the consensus opinion of investors and traders concerning the “value” of the stock. Market value is influenced by many factors including economic and industry conditions, expected earning and dividends, and market and company risk consideration.

### 2.2.2 Return on Common Stock

When people buy common stock they give up current consumption in the hope of attaining future consumption. They expect to collect dividend and eventually sell the stock at a profit. According to Mr. J.C. Van Horne “The benefit associated with ownership includes the cash dividends paid during the year together with an appreciation in market price, or capital gain realized at the end of the year” (Van Horne, 1998:2). Returns are defined as the dividend yields plus the capital gain or loss. The relationship between levels of return on their relative frequencies is called probability distribution. It can formulate a probability distribution for the relative frequency of a firm’s annual return by analyzing its historical return over the previous year. But history never repeats itself exactly. Hence, after analyzing relative frequencies of historical return for individual company. It can form a probability distribution based on historical data plus the analysis for the industry, the outlook for the firm in its industry and another factors”.

The after tax increase in the value of initial investment is the investment return, the increase in value can come from two sources: a direct cash payment to the investor or an increase in market value of the investment relative to the original purchase price. An investment single period rate of return denoted by ‘r’ is simply the total return an investor would receive during the investment period or holding period stated as a percentage of the investments’ price at the start of the holding period.

$$r = \frac{(P_t + P_o) + D_t}{P_o}$$

Where,

r = Single period rate of return

- $P_t$  = Market price at the end of period 't'
- $P_0$  = Current market price or purchase price
- $D_t$  = Cash dividend received during time period 't'
- $P_t - P_0$  = Income from price appreciation (or loss from price depreciation) Sometimes called capital gains (or losses)

Above formula can be used to determine both actual single period return as well as expected return. Holding period's returns are often calculated for periods other than one year. Many holding periods returns over periods shorter or longer than one year are annualized. In general, if the length of the holding period is not specified, it is assumed to be one year.

### **2.2.3 Risk on Common Stock**

Risk is uncertainty associated with the end-of-period value of an investment. "Risk is the possibility or chance of meeting danger of suffering loss" as described by the Oxford Dictionary. Uncertainties and risks are the facts of life to the common stock holders. Different people perceive uncertainty and risk in different ways. Some perceived uncertainty as simply a lack of definite outcomes. It is anything that could happen any unknown event, which may be favorable or unfavorable. Other many people consider risk as a chance of happening some unfavorable event or danger of losing some value. The terminology uncertainty and risk are often used interchangeably.

Although it is not quite clear what previously uncertainty and risk means. Authorities in the field of finance and people concern about finance do agree that risk is the product of uncertainty. If we interpret certainty as a future outcome which is hundred percent sure to happen, uncertainty is then just the opposite of certainty that refers to all possible future outcomes none of which is known for

sure to happen. Risk in the other hand is the product of all potential outcomes expressed with probability associated with each of them and it is measured in terms of the degree of variability in the probability distribution of such outcome. “Risk defines most generally is the probability of the occurrence of unfavorable outcome. But risk has different meaning on different context. In our context two measure developments from the probability distribution have been used as initial measures of return and risk. They are the mean and the standard deviation of the probability distribution”.

Uncertainly and risk are treated separately in financial analysis. The practices are to translate the uncertainty into the mathematical value that represents the best estimate of all uncertainty values. In other words, uncertainty is taken care by calculating the expected value of all possible uncertain outcomes. But risk is treated differently. Although risk arises from uncertainty its magnitude depends upon the degree of variability in the uncertain cash flows, and it is measured in terms of standard deviation.

In project evaluation, risk, in fact is an indication of chance of losing investment value. The word chance here refers to the probability of loss in the investment project. In other words the project risk indicates the probability of return being less than the expected value –higher the risk.

### **Source of Risk**

According to Mr. J.C. Francis every investment involves uncertainty that make future investment returns risky. Sources of uncertainty that contribute to investment risk are as follows: (J.C. Francis, op. cit. p3).

#### **i. *Interest Rate Risk***



Interest rate risk is defined as the potential variability of return caused by changes in the market interest rates.

**ii. Purchasing Power Risk**

It is the variability of return an investor suffers because of inflation.

**iii. Bull-Bear Market Risk**

Bull –Bear Market risk arises from the variability in market returns resulting from altering bull and market forces.

**iv. Management Risk**

Management risk is defined as the variability of return caused by a decision made by a firm's management and board of directors. Furthermore, errors made by business managers can harm who invested in their firms.

**v. Default Risk**

Default risk is that portion of an investment's total risk that results from changes in the financial integrity of the investment. It is related to the probability that some or all the initial investment will not be returned.

**vi. Liquidity Risk**

Call ability risk and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. That portion of a security's total variability of return that drives from the possibility that the issue may be called is the call ability risk.

**vii. Convertible Risk**

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

#### **viii. Political Risk**

The variability of return accomplished through legislative judicial or administrative branches of the government are called political risk. Political risk can be further classified as international and domestic political risk.

#### **ix. Industry Risk**

An industry risk is that portion of an investment's total variability of return caused by events that affect the products and firms that make up an industry.

The uncertainties discussed above the higher the major sources of investment risk, but by no means do they make up an exhaustive test. If all the uncertainties could be listed, they would add up to total risk or total variability of return.

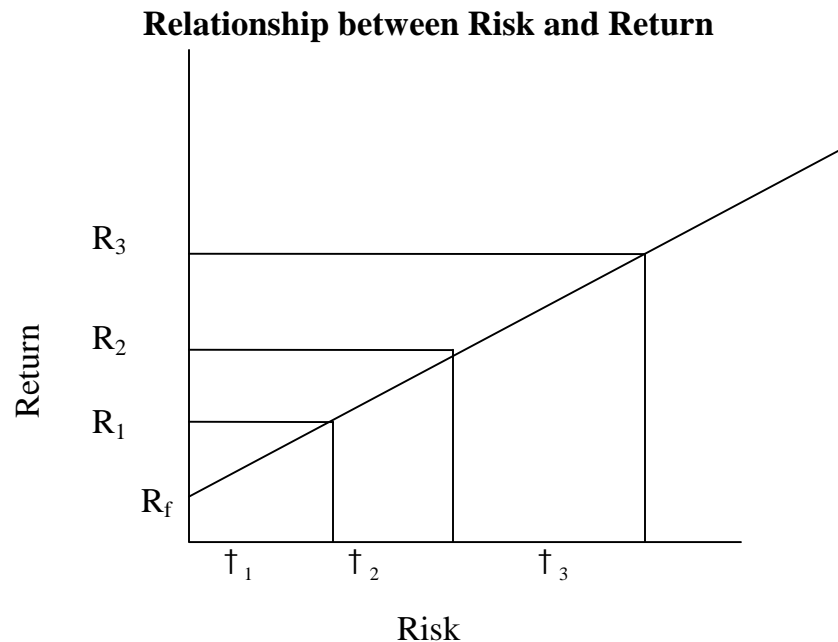
### **2.2.4 Relationship between Risk and Return**

Investors are generally risk averse. This implies that risky investment must offer higher expected return than less risky investment in order to make the people buy and hold them. The risk aversion attitude of investors portfolio theory was developed and being very important subject in the field of finance. "Any individual investment may differ substantially from the average risk and return statistics. That is why it is prudent to invest assets before investing" (Frances, op. cit. p. 17).

The relationship between the risk and return is described by investors' perception about risk and their demand for compensation. No investors will like to invest in

risky assets unless he is assured of adequate compensation for the assumption of risk. Therefore it is the investors required risk premiums that establish a link between risk and return. In a market dominated by rational investor high risk will command by rational premium and the trade – off between the two assumes a linear relationship between risk and risk premium. “The observe difference in both levels and variability of the rates of return across securities are indicative of the underlying risk return relation in the market” (Lorie, Dodd & Kempton 1983: 3).

**Figure 2.1**



“Rational investors would agree that an investment’s required return should increase as the risk of investment increase. Most investors would also agree how the expected rate of return should be calculated. But when the discussion turn to risk the debate begins” (J.M. Cheney & E.A. Moses, op. cit. p.41) .

The figure represents a higher premium for higher risk in liner fashion indicating a premium of  $(R_1-R_2)$  for  $\Xi_1$  degree of risk  $(R_2-R_f)$  for  $\Xi_2$  degree of risk and so on. The assumption of liner relationship states the risk premium increase or decrease

in proportion to a change in level of risk.  $R_f$  stands for return on risk free security. The partial interest is the different in rates of return across securities, since they provide valuable clues to the market's trade-off between risks and return. Scientific progress in any field depends on accurate measurement. Many measurements are interesting in them, by their most important scientific role is to test the validity of theory. Since most financial theory is focused on an explanation of the level, structure and behavior of rates of return, their accurate measurement is essential if the theory is to be tested and improved.

### **2.2.5 Portfolio Analysis**

The portfolio analysis begins where the security analysis ends and this fact has important consequences for investors. According to Mr. Bhalla "Portfolio, which are combination of securities, may not take on the aggregate characteristics of their individual parts." (V.K. Bhalla, op. cit. p. 427). Investment position is 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 for the creation of an efficient investment because it can reduce the variability of returns around the expected return.

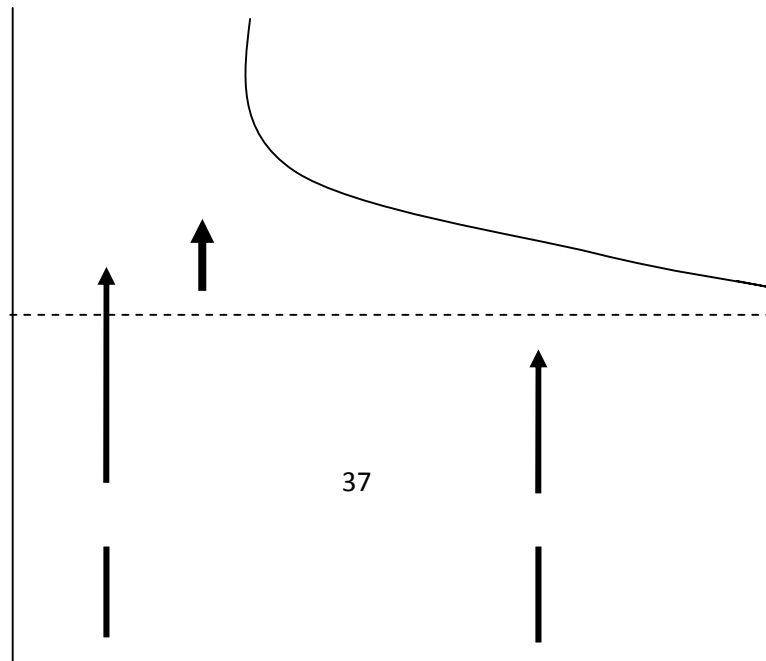
"The portfolio manager seeking efficient investments works with two kinds of statistics-expected return statistics and risk statistics. The expected return and risk statistics for individual assets are the exogenously determined input analyzed by the portfolio analyst. The objective of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor seems appropriate. All the information available to the securities analyst is supposed to be summarized in the risk-return statistics describing the investment candidates" (Francis, op. cit. p. 228).

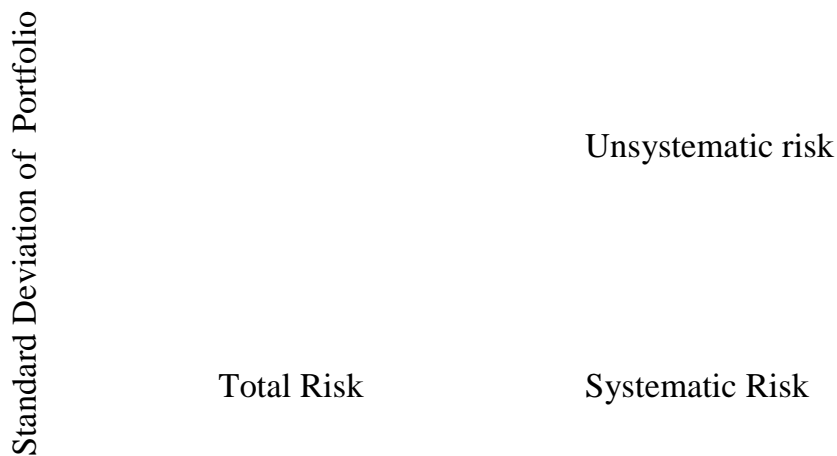
Investors rarely place their entire wealth in a single asset rather they construct a portfolio. Portfolio is simply an investment made on two or more than two securities. Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities.

“Diversification is essential to the creation of an efficient investment because it can reduce the variability of returns around the expected return”. There are two broad sources of uncertainties. The first is due to overall market risk-change in nation’s economy, tax reforms act, a change in world energy situation, business cycle, the inflation rate, interest rates, exchange rates and so forth. None of these macroeconomic factors can predict with certainty. These risks affect securities and consequently, cannot be diversified away. So, it is the systematic risk. Even the investors who hold a well-diversified portfolio will be exposed to this type of risk. The second risk component, however, is unique to a particular company being independent of economic political and other factors that effects securities in a systematic manner. It is the unsystematic risk. By diversification unsystematic risk can be reduced and even eliminated if diversification is efficient. Therefore, not all of the risk involved in holding a stock is relevant, part of it can diversified away.

**Figure 2.2**

**Unsystematic and Systematic Risk**






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“Uncertainty risk is reduced at a decreasing rate towards zero as more randomly selected securities are added to the portfolio. Various studies suggest that 15 to 20 stocks selected randomly are sufficient to eliminate most of the unsystematic risk of a portfolio. Thus a substantial reduction in unsystematic risk can be achieved with a relatively moderate amount of diversification”

There are different diversification techniques for reducing a portfolio risk (Frances, op. cit. p. 228).

**i. Simply Diversification**

Simple diversification can be defined as “not putting all the eggs in one basket”, or “spreading the risks”. Simple diversification was analyzed using random selections and equal weighing to stimulate the techniques naïve investors might employ. Using these naïve techniques to implement simple diversification does not nullify its ability to reduce risk in a diversified portfolio.

**ii. 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 diversification across industries is not much better than simply selecting securities.

### **iii. Superfluous Diversification**

If 10 to 15 different securities are selected for a portfolio, the maximum risk-reduction benefits from simple diversification have most likely been attained. Further spreading of the portfolio's assets as superfluous diversification and should be avoided. Superfluous diversification will usually result in the following portfolio management problems.

- ) If the portfolio contains dozens of different assets, the portfolio's management cannot consider the status of all of them simultaneously.
- ) The search for numerous different assets to buy will ultimately lead to the ill-informed purchase of investments that will not yield an adequate rate of return for the risk they bear.
- ) As the number of candidate securities for a portfolio increases, it will be more costly to do the necessary security analysis.
- ) Frequent purchase of small quantities of share will result in large broker's commissions than will less frequent purchase of larger blocks of shares.

#### **a) Simple Diversification across Quality Rating Categories**

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.

### **b) Markowitz Diversification**

Markowitz diversification may be defined as combining assets, which are less than perfectly positively correlated in order to reduce portfolio risk without sacrificing portfolio returns. It can sometimes reduce risk below the undiversifiable level. Markowitz diversification is more analytical than simple diversification and considers assets correlation (or covariance).

Markowitz 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.

- ) The expected return from an asset is the mean value of a probability distribution of future returns over some holding period.
- ) The risk of an individual asset of portfolio is based on the variability of return (i.e. the standard deviation or variance)
- ) Investments depend solely on their estimate of return and risk in making their investment decisions. This means that an investor's utility (indifference) curves are only a function of expected return and risk.
- ) Investors adhere to dominant principal. That is for any given level of risk, investors prefer assets with a higher expected return to assets with a lower expected return for assets with the same expected return investor prefer lower to higher risk.

### **2.2.6 Portfolio Return**

A portfolio is a collection of securities. Since it is rarely desirable to invest the entire funds of an individual or an institution in a single security, it is essential that



every security be viewed in a portfolio context. “The expected return of a portfolio depends on the expected return of security and amounts invested in each security in the portfolio” (Bhalla, op. cit., p. 427).

The expected return of a portfolio is simply a weighted average of the expected return of the securities containing in that portfolio. The weights are the proportion of total funds investment in each security. The weight must sum i.e. 100 percent. The general formula for expected return of a portfolio is given by

$$R_p = \sum_{j=1}^n W_j R_j$$

Where,  $R_p$  = Expected return of a portfolio consisting n securities.

$W_j$  = Proportion of wealth invested in security j.

$R_j$  = Expected return of security J

n = No. of securities in a portfolio.

### 2.2.7 Portfolio Risk

The calculation of a portfolio's risk is not a straight forward as the calculation of portfolios expected return. In order to calculate the risk of a portfolio, consideration must be given not only to the risk of individual assets in the portfolio and their relative weight but also to the extent to which the assets return move together. "By combining the measures of individual assets risk (variance of standard deviation), relative assets weight, and the co-movement of assets return (correlation or covariance), the risk of the portfolio can be estimate". "A fundamental aspect of portfolio theory is the idea that the riskiness inherent in any single assets held in a portfolio is different from the riskiness of that assets held in isolation".

#### The Standard Deviation of a Probability Distribution of Possible Portfolio Return is

$$\sigma_p = \sum_{j=1}^m \sum_{k=1}^m W_j W_k \sigma_{jk}$$

$m$  = Total number of securities in a portfolio

$W_j$  = proportion of wealth invested in security  $j$

$W_k$  = proportion of wealth invested in security  $k$

$\sigma_{jk}$  =  $\text{Cov}_{jk}$  = covariance between possible returns for security  $j$  and  $k$

### 2.2.8 CAPM (Capital Assets Pricing Model)

As already mentioned, total risk can be measured by the variance of returns. This total risk is partitioned into its systematic and unsystematic components. And in the context of systematic risk, the concept of CAPM is essential. In the book 'Investment analysis and portfolio management' written by Prasanna Chandra, he

had focused on capital asset pricing model. The CAPM predicts the relationship between the risk of an assets and its expected return. This relationship is very useful in many ways. First, it produces a benchmark for evaluating various investments. For e.g. when we are analyzing a security we are interested in knowing whether the expected return from it is in line with its fair return as per the CAPM. Second, it helps us to make an informed guess about the return that can be expected from an asset that has not yet been traded in the market. For e.g. how should a firm price its initial public offering of stock? Although the empirical evidence on the CAPM is mixed, it is widely used because of the valuable insight it offers and its accuracy is deemed satisfactory for most practical applications.” CAPM is a model that describes the relationship between risk and expected return. In this model, a security’s expected return is the risk free rate plus a premium base on the systematic risk of the security. This model is:

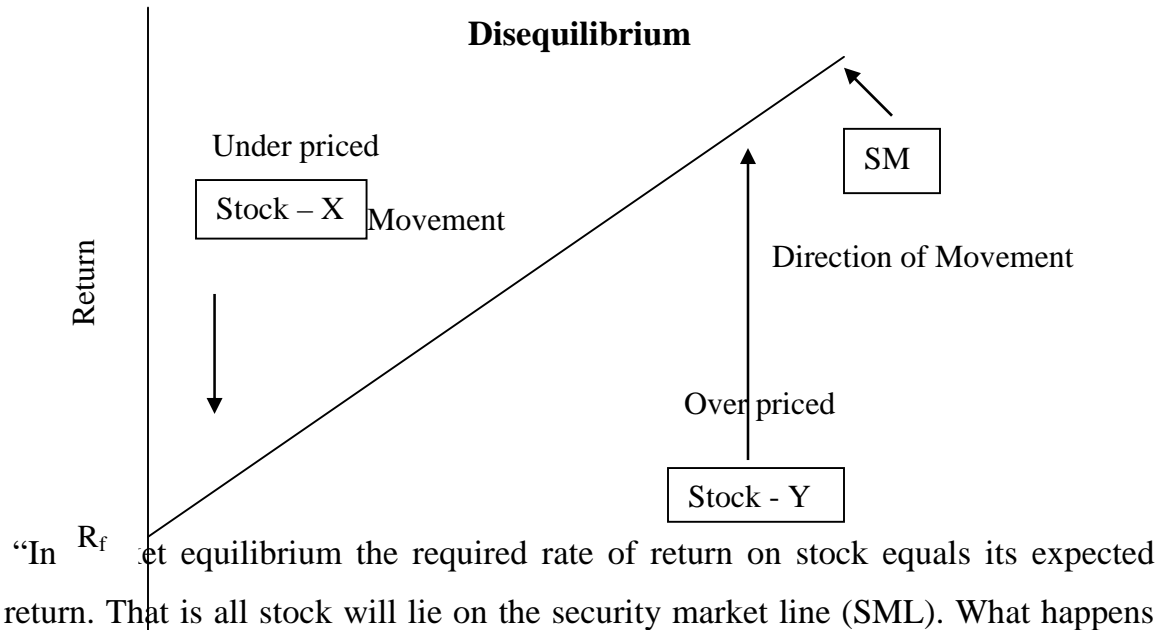
$$K_j = R_f + [ E (R_m) - R_f ] \beta_j$$

Where  $K_j$  is required rate of return for stock ‘j’,  $R_f$  is the risk free rate,  $E (R_m)$  is expected return for the market portfolio and  $\beta_j$  is the beta coefficient for stock ‘j’.

Here,  $\beta_j$  is a index of systematic risk. It measures the sensitivity of a stock’s return 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.

**Figure 2.3**

**Underpriced and Overpriced Stocks during Temporary Market**



when this is not so? Suppose Systematic Risk (Beta) the SML is drawn on the basis of what investors as a whole know to be the approximate relationship between the required rate of return and systematic or unavoidable risk. For some reason, two stocks call them x + y are improperly priced. Stock x is under price relative to the SML while stock y is overpriced.

As a result, stock x is expected to provide a rate of return greater than that required base on its systematic risk. In contrast, stock y is expected to provide lower return than that required to compensate for its systematic risk. Investors seeing the opportunity for superior returns by investing in stock x, should rush to buy it. This action would drive the price up and the expected return down. How long would this continue? It would continue until the market price was seen that the expected return would now lie on the security market line. In the case of stock y, investors holding this stock would sell it, recognizing that they could obtain a higher return for the same amount of systematic risk with other stocks. This selling pressure

would drive y's market price down and its expected return up until the expected return was on the SML. When the expected return for these two stocks returns to the SML, market equilibrium will again prevail as quoted by Mr. J. C. Van Horne.

The concept of risk and return as developed under CAPM has intuitive appeal and they are quite simple to understand. This concept is used in a number of financial decision-making such as valuation of securities, cost of capital measurement, investment risk analysis, etc. However, in spite of its intuitive appeal and simplicity, CAPM suffers from a number of practical problems, such as its unrealistic assumption, its validity is difficult to test, betas also do not seem to remain stable over time, etc. However, the value of a model depends not on the realism of its assumption, but on the validity of its conclusions. Extensive empirical analysis suggests that the conclusions of the CAPM are reasonably valid.

### **2.3 Review from Journals**

In this section available journals were reviewed and the subject matters related to the topic of this thesis were abstracted so as to know the new contributions made in this field.

An article published in the 'Business Age', Oct-Nov. 1999, entitled, "Stock Market Doing Pretty Well" by Mr. Navaraj Pokharel is reviewed here.

Pokharel had studied (1998) "Was it better to invest in common stock or not?" by the analysis of data from October 1998 to October 1999. He concluded that the shares of individual companies showed very good performance. Even the market price of nearly dead NCM Mutual fund has been doubled in this year. NEPSE index showed upward trend for all shares in this period. As an example of

appreciation of common stock investment he had quoted a feelings of a stock investor shared with his friend, who has deposited his saving into an attractive scheme of a finance company that would get him 14% interest per annum. Which goes like this – “The investment made in the shares of HBL in October last year before Dashain has fetched twice as much in returns now. If I had invested the same capital in the shares of Nepal Lever Limited or Bottlers Nepal (Terai), the capital appreciation would be more attractive than that.

According to Mr. Pokharel reasons behind the appreciation of the share price are as follows:

- ) Reasonably same companies have rewarded the shareholders over time
- ) Reduction on interest rate of money market diverted saving towards stock investment,
- ) Financial institutions and co-operatives have provided loan to the stock investors taking their shares as collateral. At the same time, healthy speculation is making the market interesting.
- ) Investors are being aware about the system. They tend to analyze the fundamentals of companies and are appearing more rational in their investment decision than they were before.
- ) Regulating authority is enforcing the required reform measures to maintain transparency.
- ) Continuity maintained in the Government policy is an added advantage to the market.

Finally, he suggested that the capital market needs more of infrastructure, which can facilitate the market, the size of the market could be made even bigger by introducing new instruments such as Government bonds. The institutional investors will then automatically pour in.

Another article published in the 'Business Age' June 2001 entitled "Nepal Share Market- An Investors Prospective" by Mr. Atma Ram Ghimire is also reviewed here.

Ghimire studied (June 2001) about some important trends of our capital market. He concluded that share prices are in decreasing trend due to a lot unbalanced factors. He had analyzed the NEPSE index from 1999 to 2001 and found that on March 3<sup>rd</sup> 1999 it was 178.81 [base 100 (Feb. 1994)], was 545.25, highest on December 2000 and on 17<sup>th</sup> May 2001, it plunged to 334.29. Major reason is the domination of banking sector's scrip in NEPSE. Beside, changes in share prices do not seem justified. After the declaration of bonus, divided, interim dividend, etc the share price were seen increased and after the confirmation that return is imminent, they were seen decreased.

All the components of our capital market are tame, weak and are perhaps for vested interest only. The securities board, the supreme body of this market is not playing effective role. The board has somehow supported the organizations in cheating the investors. For example, despite the objection of experts, the board gave Taragaon Regency the permission to increase the issued shares from 8 millions to 12 millions units for over subscription and the similar mistake is committed by giving almost the similar permission to Hotel Radisson also. In this way, the board is promoting the organizations to cheat the investors.

Another problem is the weak practices in its management, which seems to be without any regulatory functions. Even the share registrar and market maker are not showing concerned in their work and the board has not taken any action. There are no set rules (or they are not implemented) for transaction processing and certification delivery. Besides, most of the brokers are not properly educated and don't have required knowledge about the market. So, they are not supposed to

make right suggestions to the investors. These are some of the problems seen in our capital market from the investors' point of view. These sorts of mismanagement practices can't assist in the growth of this market.

As solutions to the problems stated above, Mr. Ghimire pointed out some key points. It is a known fact that our capital market is in its primitive stage. So, according to him, the primary requirement for the market is the immediate privatization to sustain the interest of the public investors and also for its sound growth. The board should give permission of free entry into the market to other qualified institutions also. Which can decrease the aloofness shown by the components of the market in the different stages. One of the prime motives for the investment is to earn return on it. Capital market is a long-term concept, which helps to yield good returns by investing on secured and good company in the long run. The general public has invested recklessly. They just believe what broker or the investor says about the scrip. So, they have right to be informed about the company before making the investment.

Finally, he concluded that the general investors should be alert and aware to all the situations stated above. They must receive the financial as well as other related information before they make investment, which will be helpful in making a rational investment decision for the investors.

#### **2.4 Review from Independent Studies**

Very few independent studies can be found in the topic 'Risk and return analysis'. Specifically, it is rare in the case of this research topic, 'Impact of risk and return on share price'. However, the available independent studies, which are related to the Nepalese stock Market and about shareholder's democracy, are reviewed here. Even though the studies were carried out long time back, they were supposed to give the intellectual background for the present study.



Radhe Shyam Pradhan (1993) carried out a study entitled “*Stocks Market Behavior on a small capital market- a case study in Nepal*”, which was published in *Financial Management Practices in Nepal* (1994). Among the different objectives, to assess the stock market behavior in Nepal seems related to this study. So, his conclusions were,

- ) Dividend per share and market price per share was positively correlated
- ) There was positive relationship between dividend payout and liquidity
- ) Higher the earnings on stocks larger the ratio of dividends per share to market price per share.

K.D. Manandhar (1998) carryout out a study entitled ‘*Dividend policy and value of the firm in small stock market, in the context of Nepal*’, published in *Management Dynamics*. The basic objective is to find out the financial variable that is related to market equity. But the objective does not seem to be related with the present study, still it is reviewed here. Because Manandhar had pointed out some problems in stock market of Nepal and dividend practices which are

- ) Most of the companies are undertaking the expectation of investors resulting in the low marketability of shares & trading floor of stock exchanges.
- ) Majority of the companies are declaring dividends less than risk free rate and market risk premium.
- ) The relationship between the earning, dividend pay out and expansion program do not match with financial needs of the companies.
- ) Companies do not follow sound dividend policy.

Hence, these are the reasons behind the low stock prices and low volume of stocks traded suffered by NEPSE these days.

Khagendra Prasad Ojha (2000) in the mini research paper entitled '*Financial Performance and Common Stock Pricing*', concludes that "An investment in common stock of a corporate firm, neither ensures annual return nor ensures the return of principle". Therefore, investment in common stock is very sensitive on the ground of risk. Dividend is paid only if the firm makes an operating profit after tax and preference dividend. The company can return the principle in case of its liquidation only to an extent of the residual asset after satisfying to all of its creditors and preferential shareholders. Besides, investors have to sacrifice their return on their investment in common stock, which could be earned investing fund elsewhere in the next best opportunity. Further, he added that the stock price in Nepal is determined more by other factors rather than the financial performance of the concerned company.

Narayan Prasad Paudel (2001) carried out a study in a topic of '*Investing in Shares of Commercial Banks in Nepal: An Assessment of Returns and Risk Elements*'. The objective of determining whether the share of commercial banks of Nepal were overpriced or under priced by analysis risk and return characteristics of the individual shares may influence this present study. So, it is reviewed here.

His findings were summarized as follows:

- ) Most of the individual share's appeared to be defensive as beta coefficient were less than one. Low beta shares were less volatile than the market as a whole. Only return on share of BOKL indicates that the share was more risky than market i.e. its beta is greater than one.
- ) Nabil, Nepal Indosuez Bank Ltd, HBL had higher expected equilibrium return than expected rate of return.
- ) The study showed that Nabil, NIBL, HBL were overpriced and others were under priced.

## 2.5 Review from Thesis

There are many MBS thesis found in the topic of this research work. So, the gists of some relevant thesis performed in the topic are presented in this section.

**Bhatta (1995)**, entitled '*Assessment of the performance of listed companies in Nepal*,' is reviewed. He addressed the following findings in risk and return character of the sample companies.

Investors expect higher returns from those stocks, which associate higher risk. Stock price doesn't contain all the information relating to the market and the company itself. So, the market return and risk both may not represent reality. However, the analysis based on the available information shows high priced stocks have higher beta risk than others so the companies with high priced stocks thus require higher returns to satisfy investors for their risk premium.

Investors in Nepal have not yet practices to invest in portfolio of securities. An analysis of the two securities portfolio shows that the risk can be totally minimizes if the correlation is perfectly negative. In this situation, risk can be totally diversified but when there is positive correlation ship between the returns then the risk is undiversifiable. So, negative correlation is preferred for the diversification of risk.

Bhatta (1990-1995) recommended to develop institutions to consult investors for risk minimization, to establish an information channel in NEPSE and to make proper amendment on trading rules. This study fails to focus the viewpoint of investors rather it concentrates on the companies and capital market. However, it explores some dimensions for further research in this subject matter.

**Khatiwada (1996)**, entitled '*A study on securities investment in Nepal*' is reviewed here. About the market price movement of common stock, he summarized that "leaving some exceptional cases aside, almost all the companies experience their market price going down by less than 50% in 1995. Even the banking group couldn't spare the share price going down.

More specifically, the year 1995 was a disheartening period for the stock price. It is because almost all the companies' share price during the year was down even some cases below the face value". But he hadn't studied about the reasons behind this deep declination in prices. He recommended to liberalization the government policy by removing capital control and barrier to attract foreign portfolio flows, which are essential for the development of stock market.

**Sapkota (2000)**, entitled 'Risk and Return analysis in common stock investment' includes eight commercial banks and is a very closely related study to this study.

"The main objective of the study is to analyze the risk and return of the common stocks in Nepalese stock market, the study is focused on the common stock of commercial banks." In this study Sapkota found that – "Banking industry is the biggest one in terms of market capitalization and turnover. Expected rate of return of on the common stock of Nepal Bank Limited is maximum (66.99%) and C.S. of Nepal SBI Bank Ltd. is found minimum. In this regard C.S. of NBL is most risky and C.S. of NSB is least risky. In the context of industries, expected return of finance and insurance industry is found highest. Expected return of banking industry is 60.83%". He concluded that "Common stock is the most risky security and life blood of stock market because of the higher expected return, C.S. attracts more investors. Private C.S. holders are the passive owners of the company. But the private investors play a vital role in economic development of the nation by

mobilizing the dispersed capital remained in different form in the society. As overall economy, Nepalese stocks market is in emerging state. Its development is accelerating since the political change in 1990 in effect of openness and liberalization in national economy. But lack of information and poor knowledge, Nepalese private investors can not analyze the securities as well as market properly".

Sapkota has recommended following points:

a) Recommendation of private investors:

- ) Stocks market investment is a risky job. Although there is a chance of more return than of expected, there is also a chance of heavy loss. So, it should really only investment money in the stocks market in the stocks market that it need not for other communities. The stock market is undoubtedly risk in the short term and investors needs to be prepared for it.
- ) Private investors should try and workout their attitude towards the risk of various investments strategies.
- ) Investors need to diversify their funds to reduce risk. Proper constructions of portfolio never takes any considerable loss.

b) Recommendation to the Government(HMG)

- ) HMG needs to the manage the trading of government securities in NEPSE in spite of Nepal Rstra Bank (NRB). The Government securitie are assumed as risk free security and trading of these securities at the same palace to investors so that they can diversify their fund properly to construct optimal portfolio. This will also increase the strength of stock market and more specifically, NEPSE as well.

J Government needs amendment of rules and regulation regarding stock market in time to time. Without implementation of rule and regulation, it is meaning less to do any thing. There are serious problems in implementation. Hence, HMG needs to monitor to make active to all the components of stocks as well as Market Properly.

Sapkota (2000) recommended to private investors to be prepared for long term because the stock market is undoubtedly risky in short term, to diversify fund for the reduction of risk, to select the stocks from different sectors for the construction of effective portfolio. To HMG, he recommended, to manage the trading of Government securities in NEPSE in spite of NRB, which helps in strengthening the efficiency of stock market as well as NEPSE, to make amendment in rules and regulations in regular basis.

**Neupane (2003)**, conducted a research in the topic of "*Risk and Return Analysis with reference to listed commercial banks*) is also related to this study. In this study, he has taken six listed commercial bank in account and has given following conclusion:

"The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on the common stock of SCBNL is maximum ( i.e. 128.60%), which is very high rate of return. In reality this rate exist only due to the affect of un realistic annual return because of the issue of bonus share and increase in share price. Similarly expected return of C.S. of Himalayan Bank Ltd. is found minimum (i. e. 28.94%)".

About the risk his has concluded, "Risk is the variability of returns, which is measured in terms of standard deviation. On the basis of S.D., common stock of

NBBL is most risky since it has high S.D. and C.S. of HBL is list risky because of its lowest S.D. other hand,. We know that coefficient of variation (C.V.), is more rational basis of investment decisions, which measures the risk per unit of return. On the basis of C.V., common stock of NABIL is the best among all banks. NABIL has 0.8600 unit of risk per unit of return. But C.S. of NBBL has the highest risk per unit of return".

He has recommended the following points:

- ) NEPSE need to initiate to develop the different programs for private investors. Such as investors meetings and seminars in different subjects matters like "Trading Rules and Regulation" etc. On the other hand NEPSE is following "Open Cry System" of trading even in the edge of digital technology. It should be modernized. It needs to developed efficient and effective information channel and top provide up to date data.
- ) Government need to amend the rules and regulation regarding stocks market in time to time and to make the policy that protects the individual investor's right.
- ) The corporate firms should communicate the real financial statements. Value of asset and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be madder to maximize the value of the firm and value per share.

**Pandey (2000)**, entitled '*Risk and Return Analysis of Common Stock Investment*' of insurance companies had concluded that 'Among all the securities common stock is known to be the most risky security. Higher the risk, higher will be the return. Most of the investors are attached to common stock security because of its higher expected return. As for the investors, it is important to analyze each investment in the companies to potential return with the risk and average the

potential returns from an investment should compensate for the level of risk undertaken. If proper allocation of assets is performed, it can reduce risk and can be eliminated if well diversified.

**Dhungana (2001)**, entitled '*Risk and Return Analysis of Finance Companies in Nepal*' had concluded that "opening of trading floor through its licensed member in 1994/95 brought big rumors about stock market and dramatic movement was developed in it. At that time, having shares of any company had been a matter of prestige in public". Among the selected finance companies, it was observed that expected return on common stock of NIDC capital markets is maximum and that of Nepal Share Market Co. Ltd. (NSMEC) is minimum. Similarly NIDC is most risky and NSMEC is found least risky. The portfolio between the common stock of same industry can't reduce risk properly. Portfolio investment of NIDC and NEFINSCO has no portfolio effect because they are highly positively correlated.

## **2.6 Research Gap**

Research and Return both have strong impact on investment. Risk and Return are the most important part of finance. Large number of research are available bearing the topic " Impact of Risk and Return on Share Market" among many, few researchers are studied and considered in this study. This study covers the relevant data and information of the latest five years i.e. fiscal year 2060/61 to 2064/65 which has not been studied before. This study has selected three top most commercial banks of Nepal as sample banks and some financial companies i.e. Himalayan Bank Limited, Standard Chartered Bank Limited, and Nabil Bank Limited . Nepal Finance and Saving Company, National Finance Company and Kathmandu Finance Company. Which are not studied together in the previous studies/ researches? In this study, calculation of optimal proportion of wealth, portfolio risk, portfolio return and correlation of each possible portfolios among



sample banks have been calculated separately, which has not been calculated on other studies.

## **CHAPTER - III**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research Methodology refers to overall research process. It's a systematic way to solve the problem by the investor's through investing in some scientific topic, which involves collecting information, analyzing and interpreting the data. Research is a systematic and organized effort to investigate a specific problem that needs a solution. In other words it is as organized, systematic, data-based, critical, scientific inquiry or investigation into specific problem, undertaken with the objective of finding answer or solutions to it. Since the principle objective of this research work is to analyze the impact of risk and return on share price, suitable methodology as demanded by the study is followed. It is intended to use simple research methodology, which will be very easy to understand. So this chapter includes research design, sources of data, hypothesis and tools used for the analysis.

#### **3.2 Research Design**

This research is based on recent historical data. This study was carried out to get the empirical result on the impact of risk and return on share price. To conduct the study, both descriptive and analytical research approach were adopted. Descriptive approach was utilized for conceptualization, problem identification, conclusion and suggestions for the study. Analytical approach was followed for presentation and analysis o data.

#### **3.3 Sources of Data**

Both primary and secondary sources were approached for data collection. For primary data, opinion survey had been undertaken with the NEPSE staffs, stockbrokers and some investors.

Secondary data were collected from the related organizations. Required information such as NEPSE index, market price, closing price of the stock, etc. were collected from NEPSE. Financial statements and annual reports are provided by the concerned organizations. Besides the main sources of data are annual reports of NEPSE, annual reports of individual organization. All available published and unpublished materials concerning the study as well as some journal abstracts were used in this study.

### **3.4 Population and Sample**

NEPSE has 108 listed companies out of which 11 companies are JVBs, 35 are finance companies and 13 are insurance companies. Among them, 3 JVBs, 4 finance companies and 3 Insurance companies have been taken as sample in this study. It is assumed that these samples represented risk and return of the whole respective organizations. Organizations, which are taken as sample, are as follows:

#### **Commercial Banks:**

(i) Nabil Bank Ltd., (ii) Himalayan Bank Ltd., (iii) Standard Chartered Bank Nepal Ltd.

#### **Finance Companies:**

(i) NIDC Capital Markets, (ii) Nepal Finance and Saving Company Ltd., (iii) National Finance Company Ltd., (iv) Kathmandu Finance Company Ltd.

### **Insurance Companies:**

- (i) Nepal Insurance Company Ltd., (ii) Premier Finance Company Ltd., (iii) United Insurance Company Ltd.

This research was undergone by taking 3 JVBs, 4 Finance companies and 3 Insurance companies as samples. However, for hypothesis testing, overall listed stocks were considered as a population and 3 JVBs, 4 Finance companies and 3 Insurance companies as samples.

### **3.5 Tool for the Analysis**

There are many tools, which are used to analyze this research study. Some of them are as follows:

#### **i) Required Rate of Return (R)**

It is already mentioned that return is the income received plus any change in market price. So, it is generally expressed as a percentage of the beginning market price of the investment.

Symbolically,

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

Where

R=required rate of return

D<sub>t</sub> = Case dividend received at time t

P<sub>t</sub> = Price of a stock at time t

P<sub>t-1</sub> = Price of a stock at time t-1

#### **ii) Expected Rate of Return [E(R<sub>j</sub>)]**

This is one of the main tools to analyze this research study. Generally, the expected rate of return is obtained by arithmetic mean of the past year's return .

Symbolically,

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

Where ,

$E(R_j)$  =  $\overline{R_j}$  = Expected rate of return

n = No of years

### iii) Standard Deviation ( $\sigma$ )

It is a statistical tool, which measures the unsystematic risk i.e.it measures the variability of a distribution of return around its mean. It is the square root of variance.

Symbolically,

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

Where,

$\sigma_j$  = Standard deviation of return on stock 'j' during the time period n.

### iv) Coefficient of Variation(c.v.)

It measures the relative risk, which is the ratio of standard deviation of returns to the mean of that distribution.

Symbolically,

$$c.v. X \frac{\dagger_j}{R_j}$$

Where,

$\dagger_j$  = Standard Deviation

$\overline{R_j}$  = Mean of Return

v) Beta Coefficient (  $s$  )

It measures the sensitivity of a stock's return on the market portfolio.

Symbolically,

$$s_j X \frac{\text{cov}(R_j R_m)}{\dagger_m^2}$$

Where,

$s_j$  = Beta Coefficient of Stock j

Cov (RjRm) = Covariance between Rj and Rm

$$= \frac{(\overline{R_j Z R_j})(\overline{R_m Z R_m})}{n Z 1}$$

$\dagger_m^2$  = Variance of market return.

### 3.6 Hypothesis

Following Hypothesis will be drawn out.

#### Hypothesis 1

$H_0: \bar{r} = \bar{r}_0$ , i.e. There is no significant difference between the average return of sample companies' common stock and overall market return. In other words, average return on the common stock of sample companies is equal to the market return.

$H_0: \bar{r} = \bar{r}_0$ , i.e. There is significant difference between the average return of the sample companies' common stock and overall market return. In other words, average return on the common stock of sample companies is not equal to the market return.

## **Hypothesis 2**

$H_0: \bar{\beta} = \bar{\beta}_0$ , i.e. There is no significant difference between the portfolio beta of the sample companies' common stock and the market beta. In other words, average beta of the individual company's common stock is equal to 1.

$H_0: \bar{\beta} \neq \bar{\beta}_0$ , i.e. There is significant difference between the portfolio beta of the sample companies' common stock and the market beta. In other words, average beta of the individual company's common stock is not equal to 1.

## **CHAPTER- IV**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1 Introduction**

In this section raw form of data about selected companies, which were collected from various sources are changed to an understandable presentation using tools as mentioned in the previous chapter i.e. research methodology. This chapter is the heart of this study that is fully related to analysis and interprets various outcomes. The analysis of data consists of organizing, tabulating and performing risk return analysis of a common stock.

#### **4.2 Analysis of Individual Companies**

There are 108 companies listed in NEPSE till 16<sup>th</sup> July 2003 . This study is focused on finance sector, which is categorized into Commercial banks, Finance Companies and Insurance Companies. So three companies from each Banks and Insurance Companies and four from Finance Companies are selected as a sample for the present study.

##### **4.2.1 Nabil Bank Ltd.**

The closing price is regarded as the market price per share of Nabil. So the highest recorded market price, the lowest market price, the closing price, cash dividend , stock dividend, total dividend per share and the realized return of the Nabil throughout the sample years are given in table 4.1 below .



**Table 4.1**  
**MPS, DPS and Realized Rate of Return of Nabil Bank**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma(P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	675	415	430	30	50%	380*	-
2003/04	762	404	700	50	-	50	0.7442
2004/05	1492	700	1400	55	25%	430**	1.6143
2005/06	2301	1310	1500	40	-	40	0.1000
2006/07	1500	465	735	30	-	30	-0.4900
2007/08	875	700	735	NA	NA	NA	0
<b>Total</b>							<b>1.9685</b>
<b>Mean</b>	Expected Return = $\bar{R} \times \frac{R}{N} \times \frac{1.9685}{5} \times 0.3937$						
<b>S.D.</b>	Standard Deviation = $\dagger \times \sqrt{\frac{(R Z \bar{R})^2}{N Z 1}} \times \sqrt{\frac{2.635}{4}} \times 0.8116$						
<b>C.V.</b>	Coefficient of Variation = $cv \times \frac{\dagger}{R} \times \frac{0.8116}{0.3937} \times 2.0615$						

Source: Annex - I

\* 30+50 % X 700 = 380

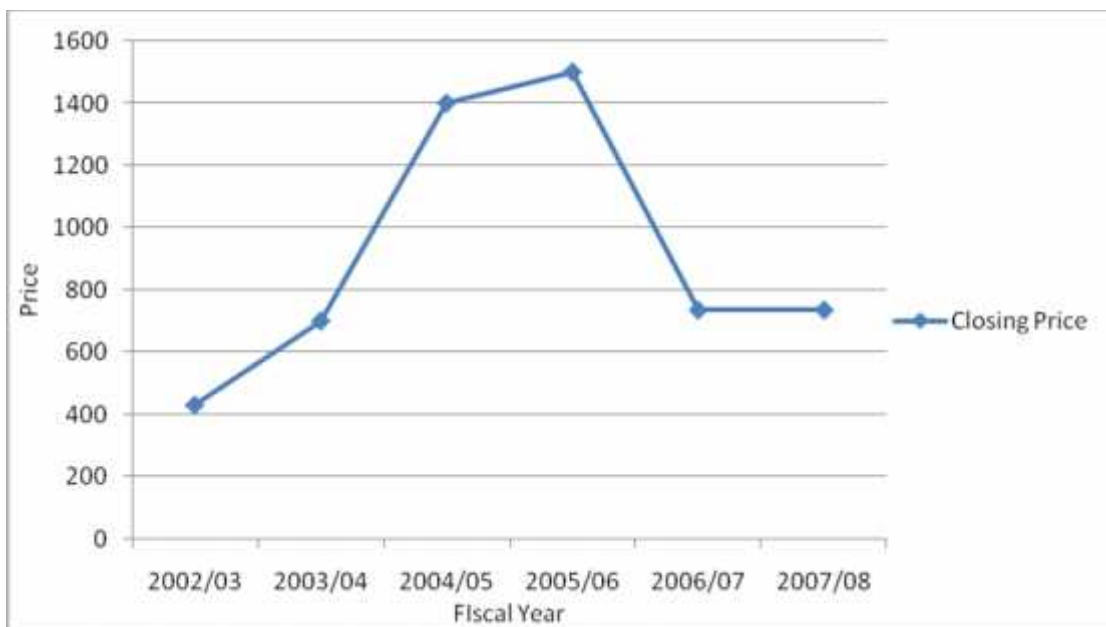
\*\* 55+ 25 % X 1500 = 430

The above table shows that MPS of the organization is in increasing trend till the year 2005/06 and is decreased and constant thereafter. MPS ranges between Rs 430 and Rs 1500. It is maximum in the year 2005/06 and minimum in the year 2002/03. The organization is distributing dividend regularly through the years .

The realized rate of return of the organization is higher in the year 2004/2005 (i.e. Rs 1.6143) and is minimum in the year 2006/07 (i.e. in the negative value ). The mean, S.D. and coefficient of variation of the return of the organization are 39.37%, 81.16% and 2.0615 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.1**

**Trend line showing year-end price Movement of Nabil**



#### **4.2.2 Standard Chartered Bank Ltd.**

The closing price is regarded as the marked price per share of SCB. So, the highest recorded marked price, the lowest recorded marked price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the SCB throughout the sample years are given in Table 4.2 below.

**Table 4.2**  
**MPS, DPS and Realized Rate of Return of SCB**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma (P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	1200	705	840	70	50%	651*	-
2003/04	1338	775	1162	80	50%	1073*	1.6607
2004/05	2050	1181	1985	100	-	100	0.7943
2005/06	3111	1860	2144	100	-	100	0.1305
2006/07	2100	1000	1550	100	-	100	-0.2304
2007/08	1760	1380	1640	NA	NA	NA	0.0581
<b>Total</b>							<b>2.4132</b>
<b>Mean</b>	$\bar{R} \times \frac{2.4132}{5} \times 0.4826$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{2.2977}{4}} \times 0.7579$						
<b>C.V.</b>	Coefficient of Variation = $cv \times \frac{0.7579}{0.4826} \times 1.5705$						

Source: Annex - I

\* Cash + Bonus% X Next Year's MPS = 70+ 50% X 1162 = 70+581 = 651

\*\* 80 + 50% X 1985 = 80 + 993 = 1073

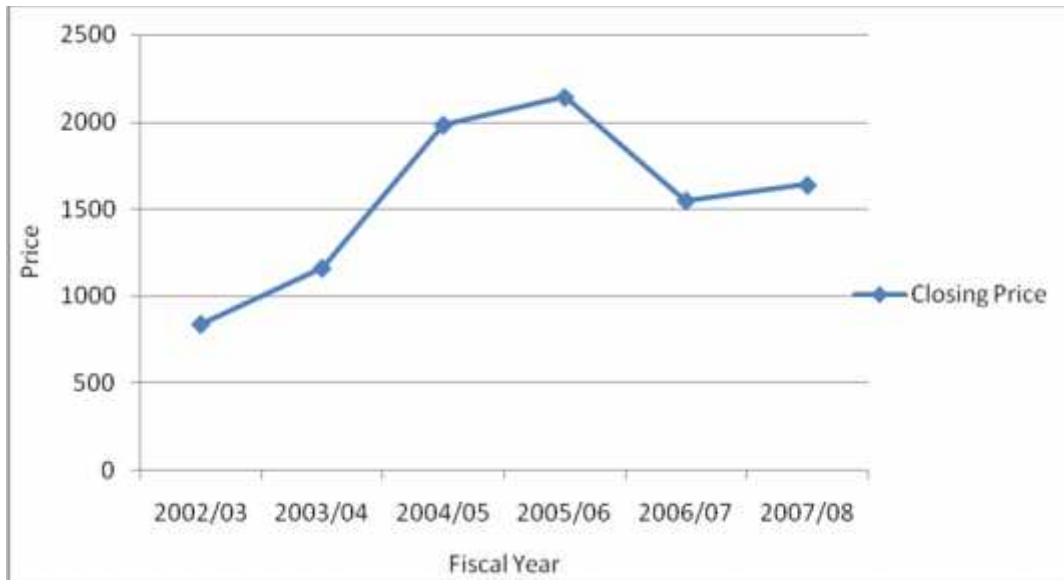
The about table shows that MPS of SCB is fluctuating, is which is increasing in the year 2005/06 but in 2006/07 it is decreased and again in 2007/08, increased. The MPS range between Rs 840 and Rs. 2144. It is maximum in the year in 2005/06 and is minimum in the year 2002/03. The organization is regularly distribution for its shareholders.

The realized rate of return of the company is maximum in the year 2003/04(i.e. 1.6607)and minimum in the year 2006/07 (i.e. in the negative value).The mean, standard deviation and coefficient of variation of the return of the company are

48.26%,75.79% and 1.5705 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.2**

**Trend line showing year-end price movement of SCB**



### **4.2.3 Himalayan Bank Ltd.**

The closing price is regarded as the market price per share of HBL. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the HBL throughout the sample years are given in table 4.3 below.

**Table 4.3**

**MPS, DPS and realized rate of return of Himalayan Bank**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma(P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	775	625	755	50	60%	650*	-
2003/04	1200	700	1000	50	25%	474**	0.9536
2004/05	1780	1000	1700	50	25%	425***	0.1250
2005/06	2726	1325	1500	27.5	30%	327.5#	0.0750
2006/07	1530	610	1000	25	10%	108.6##	-0.2609
2007/08	950	750	836	NA	NA	NA	-0.1640
<b>Total</b>							<b>1.7287</b>
<b>Mean</b>	$\bar{R} \times \frac{1.7827}{5} \times 0.3457$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{1.6779}{4}} \times 0.6477$						
<b>C.V.</b>	$cv \times \frac{0.6477}{0.3457} \times 1.8736$						

Source: Annex - I

\* Cash + Bonus% X Next Year's MPS = 50 + 60 % X 1000 = 650

\*\* 50 + 25% X 1700 = 475

\*\*\* 50 + 25 % X 1500 = 425

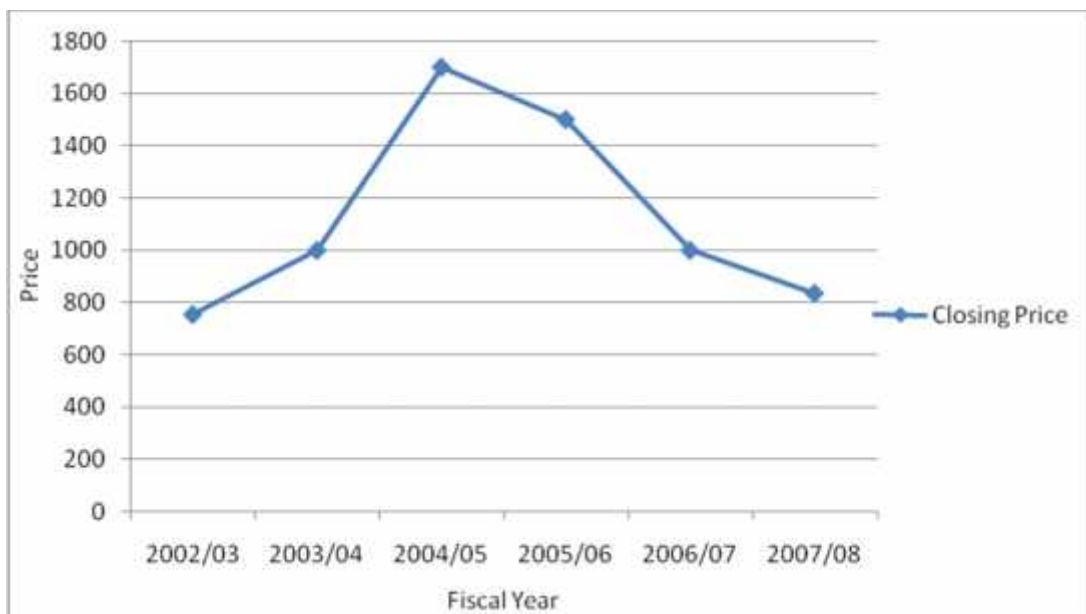
# 27.5 + 30% X 1000 = 327.5

## 25 + 10% X 836 = 108.6

The above table shows that the MPS of the organization is in increasing trend till the year 2004/2005 and is in decreasing trend thereafter. MPS ranges between Rs 1700 and Rs 755. It is maximum in the year 2004\2005 and is minimum in the year 2002/03. The organization is distributing dividends regularly through the years for its shareholders.

The realized rate of return of the organization is maximum in the year 2004/2005 (i.e. Rs 1.1250) and is minimum in the years 2007/08 (i.e. in negative value). The mean, S.D. and coefficient of variation of the return of the organization are 34.57%, 64.77% and 1.8736 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.3**  
**Trend Line showing Year-end Price Movement HBL**



#### **4.2.4 NIDC Capital Markets Ltd.**

The closing price is regarded as the market price per share of NIDC CM. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend, total dividend per share and the realized return of the NIDC CM throughout the sample years are given in Table 4.4 below.

**Table 4.4**  
**MPS, DPS and Realized Rate of Return of NIDC**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma (P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	305	300	300	-	-	-	-
2003/04	301	300	300	15	-	15	0.0500
2004/05	300	203	203	15	-	15	-0.2733
2005/06	875	426	600	15	-	15	2.0296
2006/07	600	175	175	-	-	-	-0.7083
2007/08	180	125	125	NA	NA	NA	-0.2857
<b>Total</b>							<b>0.8123</b>
<b>Mean</b>	$\bar{R} \times \frac{0.8123}{5} \times 0.1625$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{4.6479}{4}} \times 1.0779$						
<b>C.V.</b>	$cv \times \frac{1.0779}{0.1625} \times 6.6332$						

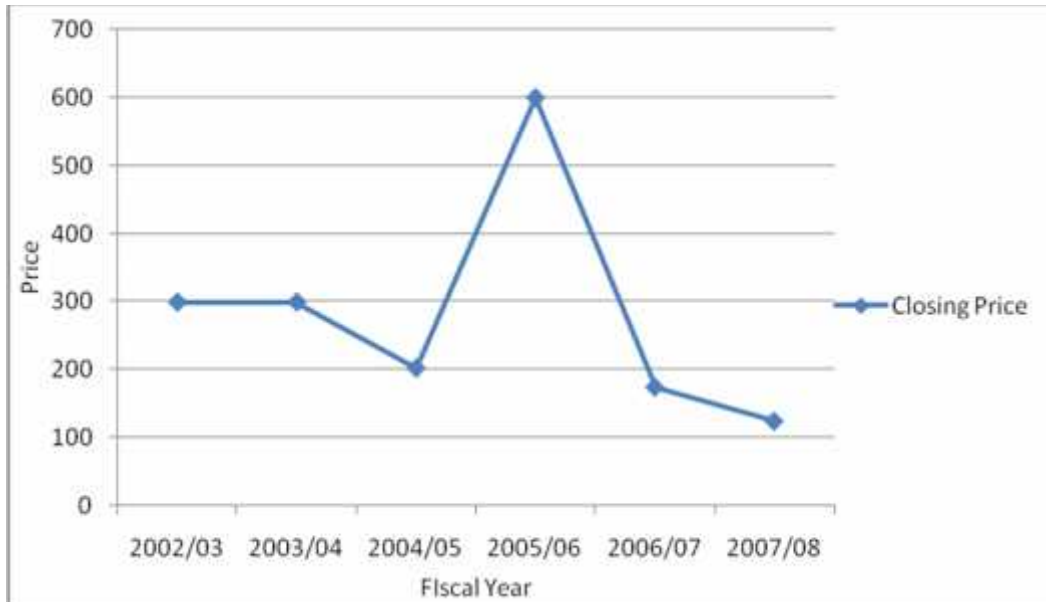
Source: Annex - I

The above table shows that MPS of NIDC Capital Market Ltd is fluctuating through the five years. MPS ranges between Rs 600 and Rs 125. It is maximum in the year 2005/06 and is minimum in the year 2007/08. The company is distributing dividends regularly till 2007/08 but thereafter no dividends had been declared.

The realized rate of return of the company is maximum in the year 2005/06 (i.e. Rs 2.0296) and is minimum in the year 2004/2005 (i.e. in negative value). The mean, standard deviation and coefficient of variation of the company are 16.25%, 107.79% and 6.6332 respectively. Trend line showing year- end price movement is presented below.

**Figure 4.4**

**Trend Line showing Year-End Price Movement of NIDC**



#### **4.2.5 Nepal Finance and Saving Company**

The closing price is regarded as the market price per share of NEFINSCO. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized of the NEFINSCO throughout the sample years are given in the table 4.5 below.



**Table 4.5**

**MPS, DPS and Realized Rate of Return of NEFINSCO**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma (P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	179	115	141	-	-	-	-
2003/04	150	-	125	15	-	15	-0.0071
2004/05	400	144	375	5.26	100%	295.26*	4.3621
2005/06	871	290	290	-	-	-	-0.2267
2006/07	300	260	300	15	-	15	0.0862
2007/08	290	176	176	NA	NA	NA	-0.4133
<b>Total</b>							<b>3.8012</b>
<b>Mean</b>	$\bar{R} \times \frac{3.8012}{5} \times 0.7602$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{16.3688}{4}} \times 2.0229$						
<b>C.V.</b>	$cv \times \frac{2.0229}{0.7602} \times 2.6610$						

Source: Annex- I

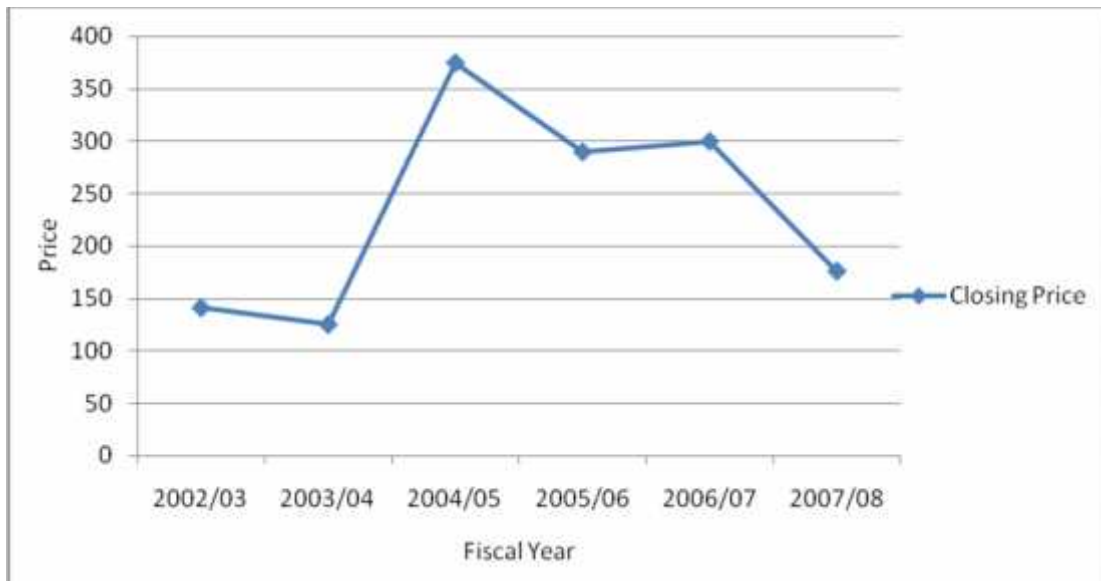
\* 5.26 + 100% X 290 = 295.26

The above table shows that MPS of the company is fluctuating through the years. MPS ranges between RS 375 and RS 125. It is maximum in the year 2004/2005 and is minimum in the year 2003/04. The company had distributed to its shareholders in the years 2003/04, 2004/2005 and 2006/07. No dividends were declared in the year 2005/06 and 2007/08.

The realized rate of return of the company is maximum in the year 2004/2005 (i.e. Rs 4.3621). The mean, S.D. and CV of the return are 76.02%, 202.29% and 2.6610 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.5**

**Trend Line showing Year- End Price Movement of NEFINSCO**



#### **4.2.6 National Finance Company**

The closing price is regarded as the market price per share of NFC. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the NFC throughout the sample years are given in Table 4.6 below.

**Table 4.6**  
**MPS, DPS and Realizes Rate of Return of NFC**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma (P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	220	180	210	20	-	20	-
2003/04	300	200	300	22	-	22	0.5333
2004/05	470	300	470	28	-	28	0.66
2005/06	701	470	560	30	-	<sup>30</sup>	0.2553
2006/07	615	470	545	20	-	<sup>20</sup>	0.0089
2007/08	515	414	455	-	20%	91 <sup>*</sup>	0.0018
<b>Total</b>							<b>1.4593</b>
<b>Mean</b>	$\bar{R} \times \frac{1.4593}{5} \times 0.2919$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{0.3594}{4}} \times 0.2997$						
<b>C.V.</b>	$cv \times \frac{0.2997}{0.2919} \times 1.0267$						

Source: Annex - I

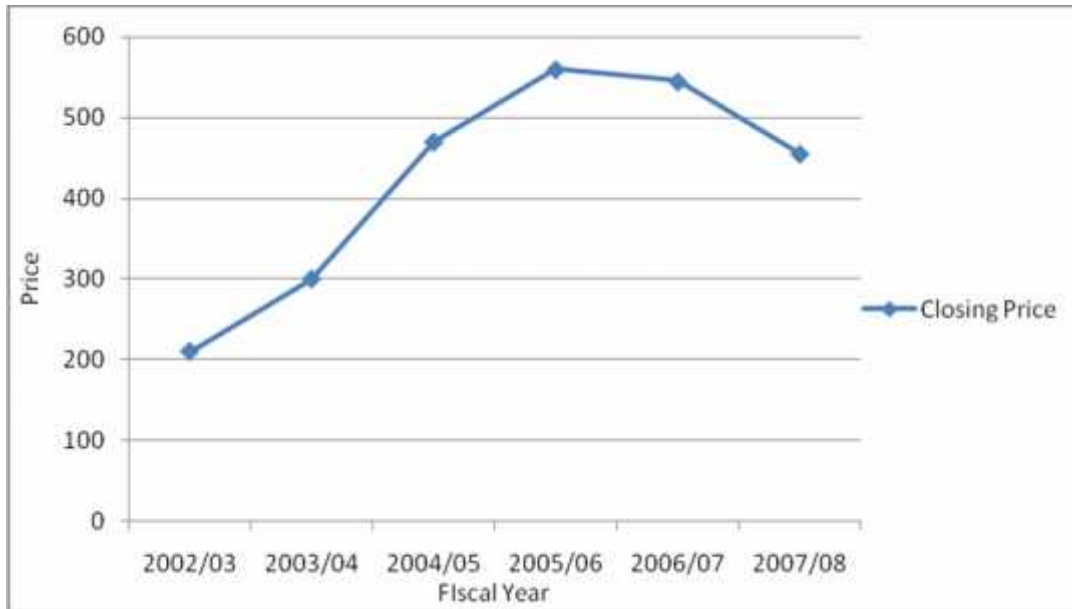
\* 0.20% X 455 = 91 (Next Year's MPS is assumed as Rs. 455)

The about table shows that MPS of the company is in increasing trend till 2005/06 and in decreasing trend thereafter. MPS ranges between Rs 560 and Rs 210. It is maximum in the year 2005/06 and is minimum in the year 2002/03. The company had distributed dividend regularly through the years to its shareholders.

The realized rate of return of the company is maximum in the year 2004/2005 (i.e. Rs 0.66) and is minimum in the year 2007/08 (i.e. Rs 0.0018). The mean, S.D. and CV of the return are 29.19%, 29.97% and 1.0267 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.6**

**Trend Line Showing Year-End Price Movement of NFC**



#### **4.2.7 Kathmandu Finance Company**

The closing price is regarded as the market price per share of KFC. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the KFC throughout the sample years are given in Table 4.7 below.

**Table 4.7**  
**MPS, DPS and Realized Rate of Return of KFC**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma (P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	100	71	95	12	-	12	-
2003/04	111	89	98	16	-	16	0.2000
2004/05	305	100	295	20	-	20	2.2143
2005/06	370	270	321	23	-	23	0.1661
2006/07	350	271	305	12	-	12	-0.0125
2007/08	310	230	235	NA	NA	NA	-0.2295
<b>Total</b>							<b>2.3384</b>
<b>Mean</b>	$\bar{R} \times \frac{2.3384}{5} \times 0.4677$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{3.93}{4}} \times 0.9912$						
<b>C.V.</b>	$cv \times \frac{0.9912}{0.4677} \times 2.1193$						

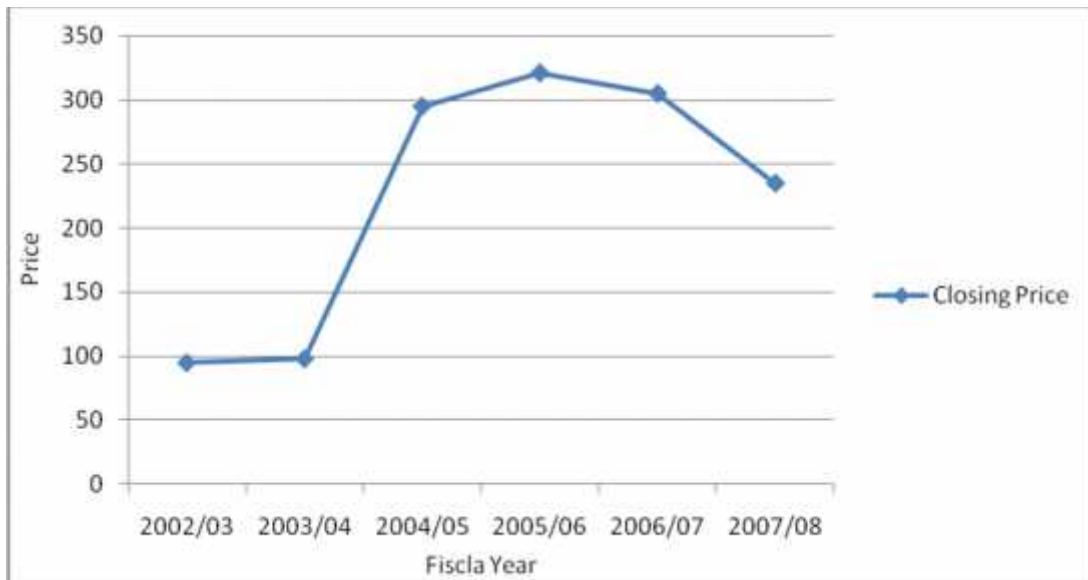
Source: Annex - I

The above table shows that MPS of the company is in increasing trend till 2005/06 but is in decreasing trend thereafter. MPS ranges between Rs 321 and Rs 95. It is maximum in the year 2005/06 and minimum in the year 2002/03. The company is distributing dividends regularly through the years except 2007/08.

The realized rate of return of the company is maximum in the year 2004/2005 (I.e. 2.2143) and minimum in the year 2006/07 (i.e. in negative value). The mean, S.D., and Coefficient of Variation of the company are 46.77%, 99.12% and 2.1193 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.7**

**Trend Line Showing Year-End Price Movement of KFC**



#### **4.2.8 Nepal Insurance Company**

The closing price is regarded as the market price per share of NIC. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the NIC throughout the sample years are given in Table 4.8 below.

**Table 4.8**

**MPS, DPS and Realized Rate of Return of NIC**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma(P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	410	365	410	45	20	137*	-
2003/04	520	351	460	25	-	25	0.1829
2004/05	695	460	695	-	-	-	0.5109
2005/06	840	600	620	10	25	140**	0.0935
2006/07	671	430	520	-	-	-	-0.1613
2007/08	500	415	456	NA	NA	NA	-0.1231
<b>Total</b>							<b>0.5029</b>
<b>Mean</b>	$\bar{R} \times \frac{0.5029}{5} \times 0.1006$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{0.2938}{4}} \times 0.2710$						
<b>C.V.</b>	$cv \times \frac{0.2710}{0.1006} \times 2.6938$						

Source: Annex

\* 45+ 20% X 460 = 137

\*\* 10+ 25% X 520 = 140

The above table shows that MPS of company is in increasing trend till year 2004/2005 and is in decreasing trend thereafter. MPS ranges between Rs 695 and Rs 410. It is maximum in the year 2004/2005 and is minimum in the year 2002/03. The company had declared dividend for the year 2002/03, 2003/04 and 2005/06 but no dividend were declared for other years.

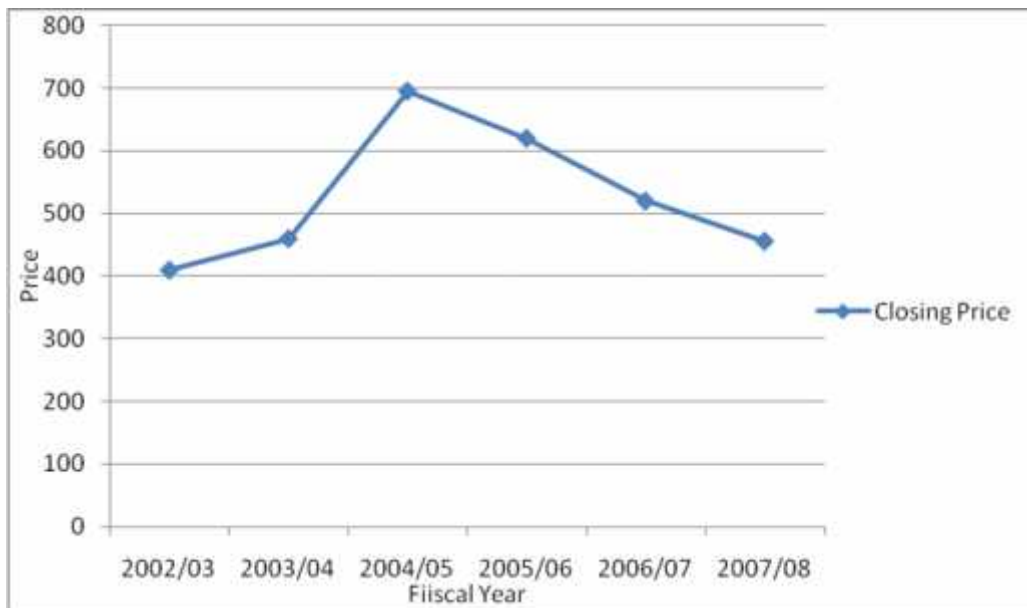
The realized rate of return is maximum in the year 2004/2005 (i.e. Rs 5109) and is minimum in the year 2006/07 (i.e. in negative value). The mean, S.D. and CV of the company are 10.06%, 27.10% and 2.6938 respectively. Trend line showing year-end price movement is presented below.





**Figure 4.8**

**Trend Line showing Year-end Price Movement of NIC**



#### **4.2.9 Premier Insurance Company**

The closing price is regarded as the market price per share of PIC. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the PIC throughout the sample years are given in Table 4.9 below

**Table 4.9**  
**MPS, DPS and Realized Rate of Return of PIC**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma(P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	122	71	122	10	-	10	-
2003/04	126	95	125	10	-	10	0.1066
2004/05	250	115	250	10	-	10	0.0800
2005/06	300	220	220	13	-	13	-0.0680
2006/07	230	154	154	10	-	10	-0.1818
2007/08	200	160	460	NA	NA	NA	-0.1765
<b>Total</b>							<b>0.5029</b>
<b>Mean</b>	$\bar{R} \times \frac{0.7603}{5} \times 0.1521$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{1.131}{4}} \times 0.1521$						
<b>C.V.</b>	$cv \times \frac{0.5317}{0.1521} \times 3.4957$						

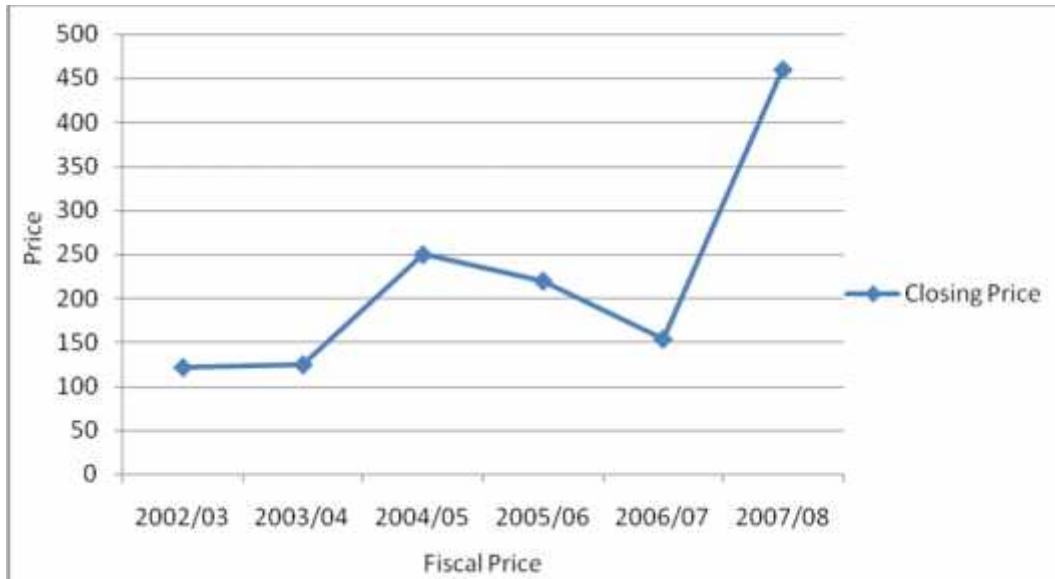
Source: Annex - I

The above table shows that MPS of the company is in increasing trend till the year 2004/05 and is in decreasing trend thereafter. MPS ranges between Rs 250 and Rs 122. It is maximum in the year 2004/05 and is minimum in the year 2002/03. The company is distributing dividend regularly through the years.

The realized rate of return of the company is maximum in the year 2004/2005 (i.e. Rs 1.08) and is minimum in the year 2006/07 (i.e. in negative value). The mean, S.D. and CV of the return are 15.21%, 53.17% and 3.4957 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.9**

**Trend Line showing Year-end Price Movement of PIC**



#### **4.2.11 United Insurance Company**

The closing price is regarded as the market price per share of UIC. So, the highest recorded market price, the lowest recorded market price, the closing price, cash dividend, stock dividend, total dividend per share and the realized return of the UIC throughout the sample year are given in Table 4.10 below.

**Table 4.10**  
**MPS, DPS and Realized Rate of Return of UIC**

Fiscal Year	MPS			DPS			Realized Return $R \times \frac{D_1 \Gamma (P_1 Z P_0)}{P_0}$
	High	Low	Closing	Cash	Stock	Total	
2002/03	107	90	101	10	-	10	-
2003/04	130	0	127	10	-	10	0.3564
2004/05	295	121	245	15	-	15	1.0472
2005/06	335	220	228	-	-	-	-0.0694
2006/07	240	160	190	17	-	17	-0.0921
2007/08	185	120	138	4	-	4	-0.2526
<b>Total</b>							<b>0.9895</b>
<b>Mean</b>	$\bar{R} \times \frac{0.9895}{5} \times 0.1979$						
<b>S.D.</b>	$\dagger \times \sqrt{\frac{1.105}{4}} \times 0.5256$						
<b>C.V.</b>	$cv \times \frac{0.5256}{0.1979} \times 2.6559$						

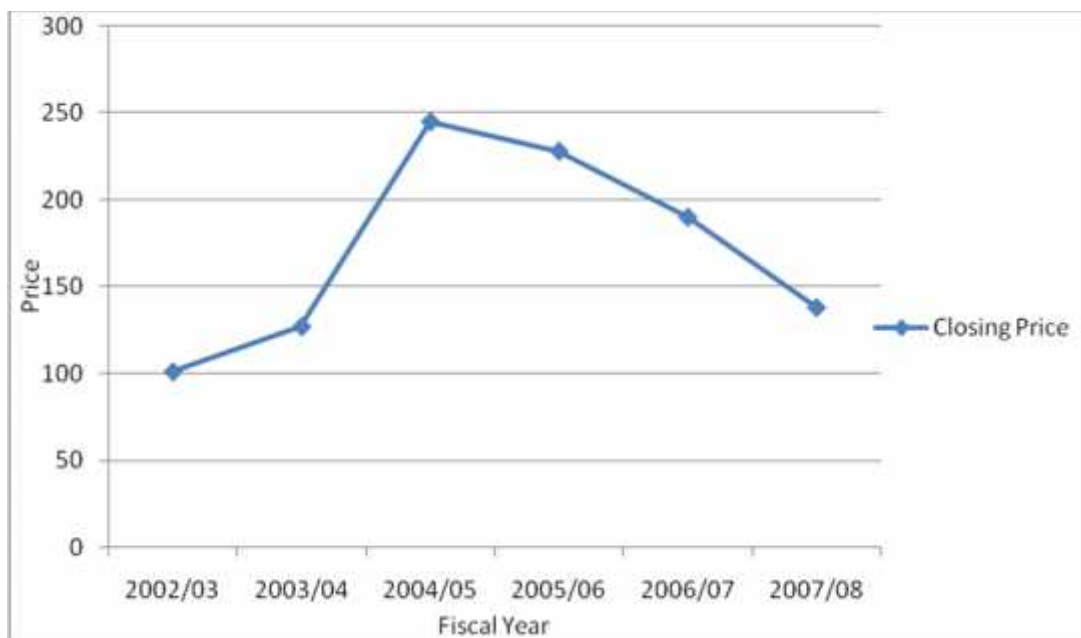
Source: Annex- I

The above table shows that MPS of the company is in increasing trend till the year 2004/05 but is in decreasing trend thereafter. MPS ranges between Rs 245 and Rs 101. It is maximum in the year 2004/05 and is minimum in the year 2002/03. The company is distributing dividends regularly except for the year 2005/06.

The realized rate of return of the company is maximum in the year 2004/05 (i.e. Rs 1.0472) and is minimum in the year 2005/06 (i.e. in negative value). The mean, S.D. and C.V. are 19.79%, 52.56% and 2.6559 respectively. Trend line showing year-end price movement is presented below.

**Figure 4.10**

**Trend Line showing Year-end Price Movement of UIC**



### 4.3 Inter- Firm Comparison

#### 4.3.1 On the basis of Market Capitalization

**Table 4.11**

**Market Capitalization 16<sup>th</sup> July 2008**

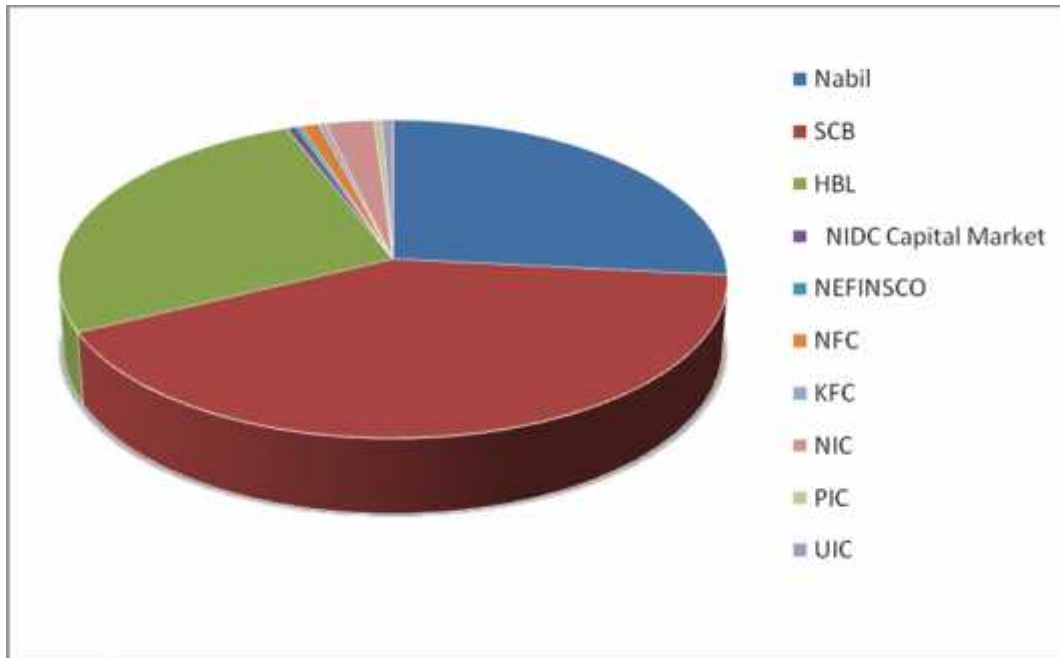
Name of Company	Outstanding Equity	Closing Price	Market Capitalization ( In Million)	%	Rank
Nabil	4909950	735	3608.81	26.62	2 <sup>nd</sup>
SCB	3395488	1640	5568.60	41.07	1 <sup>st</sup>
HBL	4290000	836	3586.44	26.45	3 <sup>rd</sup>
NIDC Capital Market	600000	125	75.00	0.55	7 <sup>th</sup>
NEFINSCO	200000	176	35.20	0.26	10 <sup>th</sup>
NFC	300000	455	136.50	1.01	5 <sup>th</sup>
KFC	200000	235	47.00	0.35	9 <sup>th</sup>
NIC	631768	456	360.23	2.66	4 <sup>th</sup>
PIC	300000	140	57.60	0.42	8 <sup>th</sup>
UIC	600000	138	82.80	0.61	6 <sup>th</sup>
<b>Total</b>	<b>15427206</b>	<b>4936</b>	<b>13558.18</b>	<b>100</b>	<b>-</b>

The above table shows the market capitalization of selected organization on 16<sup>th</sup> July 2008. It is the total value of company in the market at specified time period.

On the basis of market capitalization, Standard Chartered Bank Ltd is the largest and NEFINSCO is the smallest company among the selected companies. The ranking of the companies from highest to lowest is SCB, Nabil, HBL, NICO, NFC, UIC, NIDC Capital Market capitalization is 41.07, 26.62, 26.45, 2.66, 1.01, 0.61, 0.55, 0.42, 0.35, 0.26 respectively.

Pie Chart showing the market capitalization of selected companies is presented below:

**Figure 4.11**  
**Pie Chart showing Market Capitalization**



### 4.3.2 On the basis of Risk and Return

**Table 4.12**

**Comparative Risk- Return of Sample Companies**

<b>Name of Company</b>	<b>Expected Return</b>	<b>Standard Deviation</b>	<b>Coefficient of Variation</b>	<b>Ranking on the basis of <i>cv</i></b>
Nabil	0.3937	0.8116	2.0615	4 <sup>th</sup>
SCB	0.4826	0.7579	1.5705	2 <sup>nd</sup>
HBL	0.3457	0.6477	1.8736	3 <sup>rd</sup>
NIDC Capital Market	0.1625	1.0779	6.6332	10 <sup>th</sup>
NEFINSCO	0.7602	2.0229	2.6610	7 <sup>th</sup>
NFC	0.2919	0.2997	1.0267	1 <sup>st</sup>
KFC	0.4677	0.9912	2.1193	5 <sup>th</sup>
NIC	0.1006	0.2710	2.6938	8 <sup>th</sup>
PIC	0.1521	0.5317	3.4957	9 <sup>th</sup>
UIC	0.1979	0.5256	2.6559	6 <sup>th</sup>

The above table shows the expected return, S.D., and coefficient of variation of the selected companies. Detail calculation is presented in Annex-1.

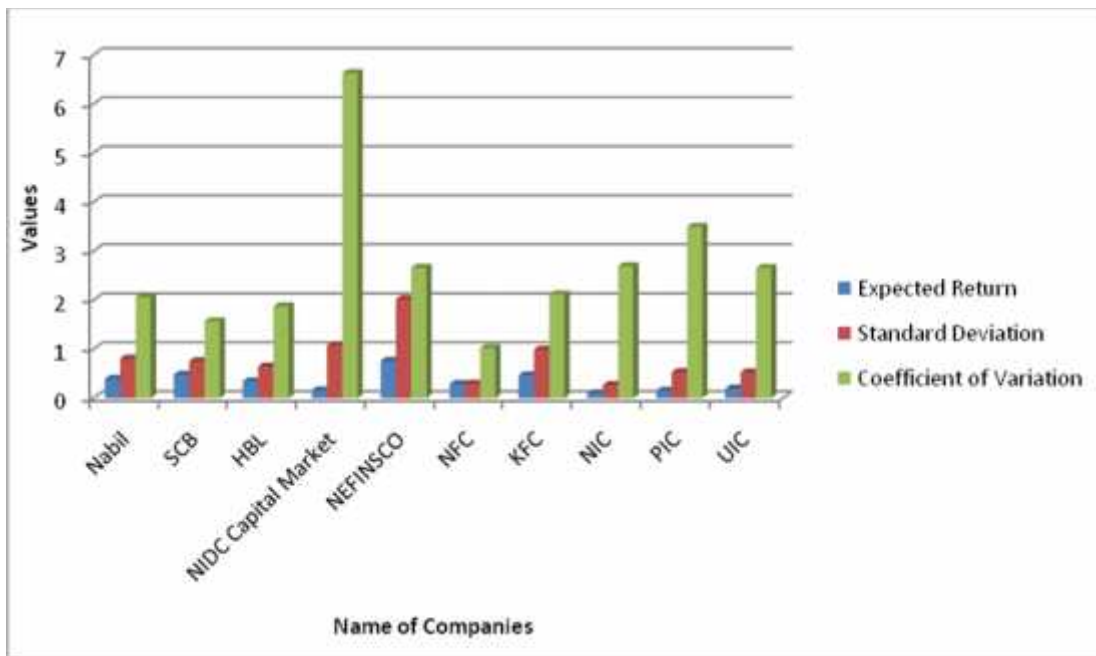
The expected return of SCB is the highest and that of NIC is the lowest. The expected return of the selected companies covers a high variation i.e. from 48.26% to 10.06%.

Standard deviation also predicts the different position of the return fluctuation of the selected companies. S.D. ranges between 202.29% and 27.10%. The highest fluctuation of return is observed for NEFINSCO whereas lowest fluctuation is observed for Nepal Insurance Company.

The relative measure of risk return trade off i.e. coefficient of variation shows the remarkable variation among the selected companies. The CV ranges between 6.6332 and 1.0267. The lowest CV is observed for NFC and highest for NIDC Capital Market. The coefficient of variation measure indicates the selected companies are less consistent or more variable. Ranking of the selected companies on the basis of CV from consistent to less consistent are NFC, SCB, HBL, Nabil, KFC, UIC, NEFENSCO, NIC, PIC and NIDC Capital Market respectively.

**Figure 4.12**

**Bar Diagram showing Comparison of Risk and Return**



#### 4.5 Analysis Of Market Risk and Return

In Nepal, there is only one stock market called Nepal Stock Exchange Ltd (NEPSE). The overall market movement is represented by market index (ie NEPSE index). The NEPSE index is adjusted and changed continuously with this NEPSE base market portfolio return, its standard deviation and coefficient of variation is presented below





**Table 4.13**  
**Market Risk and Return**

<b>Fiscal Year</b>	<b>NEPSE Index ( NI)</b>	$R_m \times \frac{NI_1 - ZNI_0}{NI_0}$	$R_m \times \overline{ZR_m}$	$(R_m \times \overline{ZR_m})^2$
2002/03	163.35	-	-	-
2003/04	216	0.3279	0.2259	0.0510
2004/05	360.70	0.6628	0.5608	0.3145
2005/06	348.43	-0.0340	-0.1360	0.0185
2006/07	227.54	-0.3469	-0.4516	0.2039
2007/08	204.86	-0.0997	-0.2017	0.0407
<b>Total</b>		<b>0.5101</b>		<b>0.6286</b>

We have,

$$\text{Mean}(\overline{R_m}) \times \frac{R_m}{n} \times \frac{0.5101}{5} \times 0.1020$$

$$\text{Standard Deviation } (\sigma_m) \times \sqrt{\frac{(R_m \times \overline{ZR_m})^2}{n \times 1}} \times \sqrt{\frac{0.6286}{4}} \times 0.3964$$

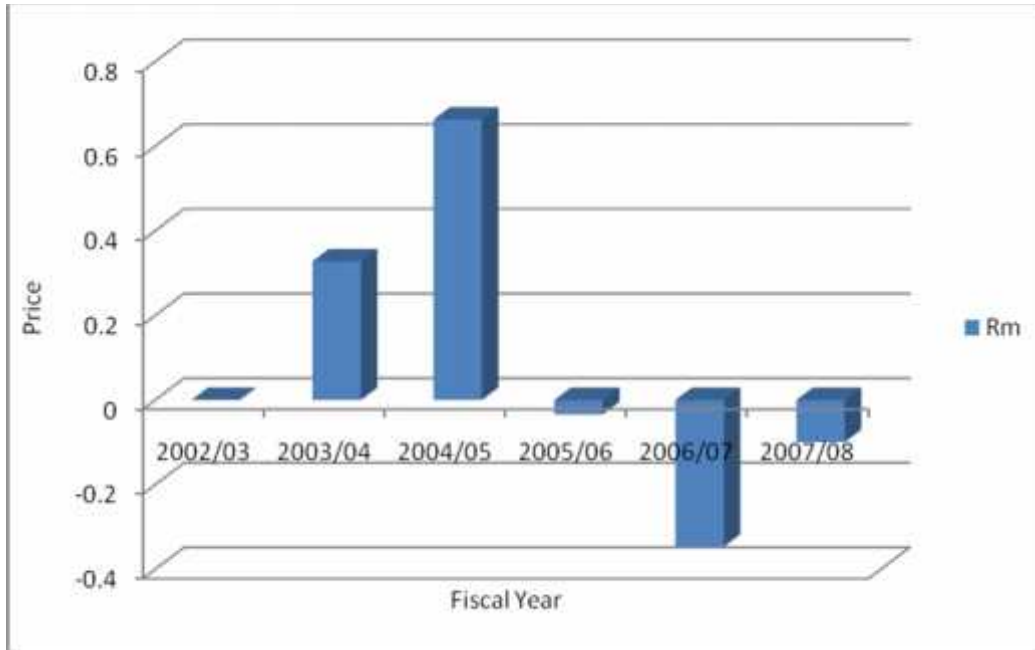
$$\text{Variance } \sigma_m^2 \times (0.3964)^2 \times 0.1517$$

$$\text{Coefficient of Variation } (cv) \times \frac{\sigma_m}{R_m} \times \frac{0.3964}{0.1020} \times 3.8863$$

Market return is calculated on the basis of NEPSE index for each year. The above table shows that the NEPSE index is in increasing trend till 2004/2005 and is in decreasing trend thereafter. It ranges between 163.35 and 360.7. It is maximum in the year 2004/2005 and is minimum in the year 2002/03. The average return of the market is 10.20%, standard deviation of the market is 39.64%, market variance is 15.71% and the coefficient of variation is 3.8863. Trend line & the bar diagram of the market return for the sample years is given below.

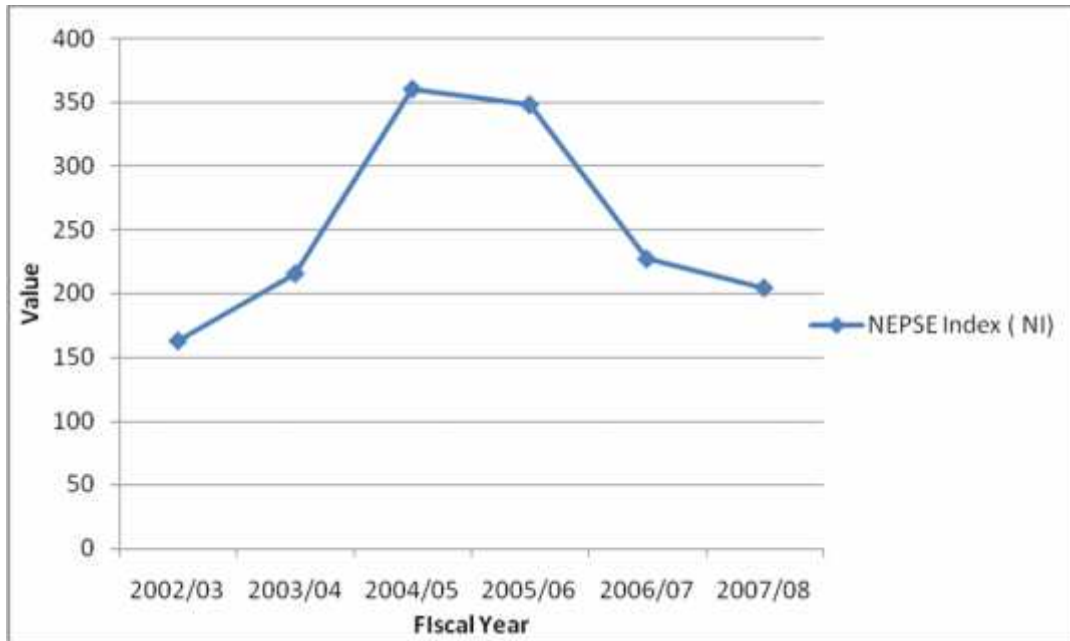
**Figure 4.13**

**Bar Diagram showing Market Return**



**Figure 4.14**

**Trend Line showing NEPSE Index**



#### 4.5 Analysis of Market Sensitivity

As per Capital Assets Pricing Model, securities expected return should relate to its degree of systematic risk and not to its degree of total risk. Systematic risk is the thing that matters to investor holding a well-diversified portfolio. Market sensitivity of stock is explained by its beta coefficient, measure of systematic risk. The greater the beta the greater will be the risk and the expected return.

**Table 4.14**

#### Calculated Beta Coefficient

Company	Beta
Nabil	2.0400
SCB	1.4265
HBL	1.5710
NIDC	0.7447
NEFINSCO	4.0134
NFC	0.7199
KFC	2.0968

NIC	0.6575
PIC	1.2050
UIC	1.2260

The above table shows the calculated value of beta coefficient of selected companies. Detail calculation is presented in Annex I.

The beta coefficient of selected Companies ranges between 4.0134 times and 0.6575 times. NEFENSCO has the highest beta (i.e.4.0134)among the selected companies. All the selected companies except NIDC, NFL, and NIC are considered as an aggressive investment since their beta is greater than that of market ( $S_m \times 1$ ).NIDC, NFL and NIC can be categorized as a defensive since there is less than that of market. The closest beta to the market is of PIC however it is aggressive.

#### 4.10 Analyzing Status of the Stock

If the required rate of return is higher than expected rate of return, the stock is said to be overpriced and an investor may sell the stock or may involved in short selling. If the required rate of return is lower than expected rate of return a stock is said to be under-priced security and an investor can make buying strategy of this type of stock. Hence, the status of the stock of the sample companies is presented below.

**Table 4.15**  
**Status of Stock of Sample Companies**

Name of Companies	S	$R_f$ (%)	$\overline{R_m}$ (%)	Required Rate of Return (%) $E(R_j) \times R_f \Gamma(\overline{R_m} Z R_f) S_j$	Expected Return (%)	Status of the Stock
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Nabil	2.0400	4.2	10.20	16.4400	39.37	Under Priced
SCB	1.4265	4.2	10.20	12.7590	48.26	Under Priced
HBL	1.5710	4.2	10.20	13.6260	34.57	Under Priced
NIDC	0.7447	4.2	10.20	8.6682	16.25	Under Priced
NEFINSCO	4.0134	4.2	10.20	28.2804	76.02	Under Priced
NFC	0.7199	4.2	10.20	8.5194	29.19	Under Priced
KFC	2.0968	4.2	10.20	16.7808	46.77	Under Priced
NIC	0.6575	4.2	10.20	7.9650	10.06	Under Priced
PIC	1.2050	4.2	10.20	11.4300	15.21	Under Priced
UIC	1.2260	4.2	10.20	11.5560	19.79	Under Priced

*Source: Economic Survey, 2059/ 60 (HMG, Ministry of Finance)*

Note:  $R_f$  is assumed to be the weighed average interest rate of Government Treasury Bill determined by NRB.

The above table shows that the entire selected sample companies' stocks are underpriced since their expected return is higher than the required rate of return. Hence, as already mentioned, the underpriced securities are recommended to buy but for the efficient decision other dimensions of analysis are also essentials. So, investors should make buying strategy for this type of securities for the betterment of their investment decision.

## **4.11 Testing of Hypothesis**

### **1<sup>st</sup> Hypothesis**

This hypothesis is based on the test of significance for double means. (Students t-test). The detail calculation of 1<sup>st</sup> Hypothesis is shown in Annex II-A.

Null Hypothesis ( $H_0$ ):  $\sim X \sim_0$  or  $\sim X \sim 0.1020$  i.e. there is no significant difference between the average return of sample companies' common stock and overall

market return. In other words, average return on the common stock of sample companies is equal to the market return.

Alternative Hypothesis ( $H_1$ ):  $\neq$  or  $>$  0.1020 i.e. there is significant difference between the average return of sample companies' common stock and overall market return. In other words, average return on the common stock of sample companies is not equal to the market return.

Under the  $H_0$  test Statistics,

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}} \sim t_{n_1 + n_2 - 2}$$

Where,  $\bar{x}_1$  (Average Return of the Sample Companies) =  $\bar{R}_{SC}$  X 0.3355

$\bar{x}_2$  (Average Market Return) =  $\bar{R}_m$  X 0.1020

$n_1 = n_2$  (No. of observation) = 5

$S^2$  (Estimated S. D.) =  $\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}$

Here,  $s_1$  = (S.D. of Sample Companies) =  $s_{SC}$  X 0.2007

$s_2$  = (S.D. of Market) =  $s_m$  X 0.3964

$$s^2 = \frac{5 \times (0.2007)^2 + 5 \times (0.3964)^2}{5 + 5 - 2}$$

$$= \frac{1.0035 + 1.982}{8} = \frac{2.9855}{8} = 0.3732$$

Now,

$$t_{cal} = \frac{0.3355 - 0.1020}{\sqrt{0.3732 \left( \frac{1}{5} + \frac{1}{5} \right)}} \times \frac{0.2335}{0.3864} = 0.6043$$

The tabulated value of t- statistics at  $(n_1 + n_2 - 2)$  i.e. 8 degree of freedom at 10%, 5%, 2% and 1% level of significance are 1.860, 2.306, 2.896 and 3.335 respectively.

### Decision

Since the calculated value is less than the tabulated value at 10%, 5%, 2% and 1% level of significance. So, Null Hypothesis is accepted which means that there is no significant different between the average return of sample companies' common stock and overall market return or average on the common stock of sample companies is equal to the market return

### 2<sup>nd</sup> Hypothesis

It is also based on the test of significance for single mean (Students t-test). The detail calculation of 2<sup>nd</sup> Hypothesis is shown in Annex II-B.

Null Hypothesis ( $H_0$ ):  $\bar{X} = 1$  i.e. there is no significant different between the portfolio beta of sample companies' common stock and market beta. In other words, average beta of the sample companies' common stock is equal to one.

Alternative Hypothesis ( $H_1$ ):  $\bar{X} \neq 1$  i.e. there is significant difference between the portfolio beta of sample companies' common stock and the market beta. In other words, average beta of the sample companies' common stock is not equal to one.

Under the  $H_0$  test Statistics( $t$ )



$$t = \frac{\bar{x} - Z}{\frac{s}{\sqrt{n}}} \sim t_{n-1}$$

Where,

$\bar{x}$  = Weighted average of Beta ( $\sum w_j \beta_j$ ) = 1.6030

$Z$  = Market Beta = 1

$s$  = Unbiased estimated S.D. of sample companies' beta =  $\sqrt{\frac{(\sum w_j \beta_j - Z)^2}{n-1}} = 0.9987$

$n$  = 10

Now,

$$t = \frac{1.6030 - 1}{\frac{0.9987}{\sqrt{10}}} = 1.909$$

$t_{cal}$  = 1.909

The tabulated value of t statistics at ( $n-1$ ) i.e. 9 degree of freedom at 10%, 5%, 2% and 1% level of significance are 1.833, 2.262, 2.821 and 3.250 respectively.

### Decision

Since the calculated value is less than the tabulated value at 5%, 2% and 1% level of significant, null hypothesis is accepted. On the contrary, at 10% level of significance, the case is in positive. But t-test is done authentically at 5% level of significance. So, null hypothesis is accepted, which means that there is no significant difference between the portfolio beta of sample companies' common stock and the market beta or average beta of the sample companies' common stock is equal to one i.e.  $\beta = 1$ .

### 4.12 Regression Analysis

Regression is the statistical tool, which is used to determine the statistical relationship between two variables and to make estimation of one variable on the basis of the other variable. In this study, the future realized rate of return is predicted by the help of regression analysis. Regression assumes that the two variables are closely related. Thus, it determines the average probable change in one variable based on certain amount of change in another. The future return is predicted on the base of realized return of respective year for individual organizations, which is given below.

### **Nabil Bank Limited (Nabil)**

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of Nabil's respective year by using least square method which is shown in Table 4.16.

**Table 4.16**

#### **Regression Analysis of Nabil Bank Limited**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.7442	-1.4884	4	1.1123	
2004/05	-1	1.6143	-1.6143	1	0.7530	
2005/06	0	0.1000	0	0	0.3937	
2006/07	1	-0.4900	-0.4900	1	0.0344	
2007/08	2	0	0	4	-0.3249	
Total	0	1.9685	-3.5927	10		

We have,

The least square equation is  $Y_c = Xa + bX$

We know,

$$X \sum X_0$$

$$a = \frac{\sum Y}{n} = \frac{1.9685}{5} = 0.3937$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{3.5927}{10} = 0.3593$$

Hence, the line is  $Y_c = 0.3937 + 0.3593X$

When  $X = 2$ ,  $Y_c = 0.3937 + 0.3593(2) = 1.1123$

When  $X = 1$ ,  $Y_c = 0.3937 + 0.3593(1) = 0.7530$

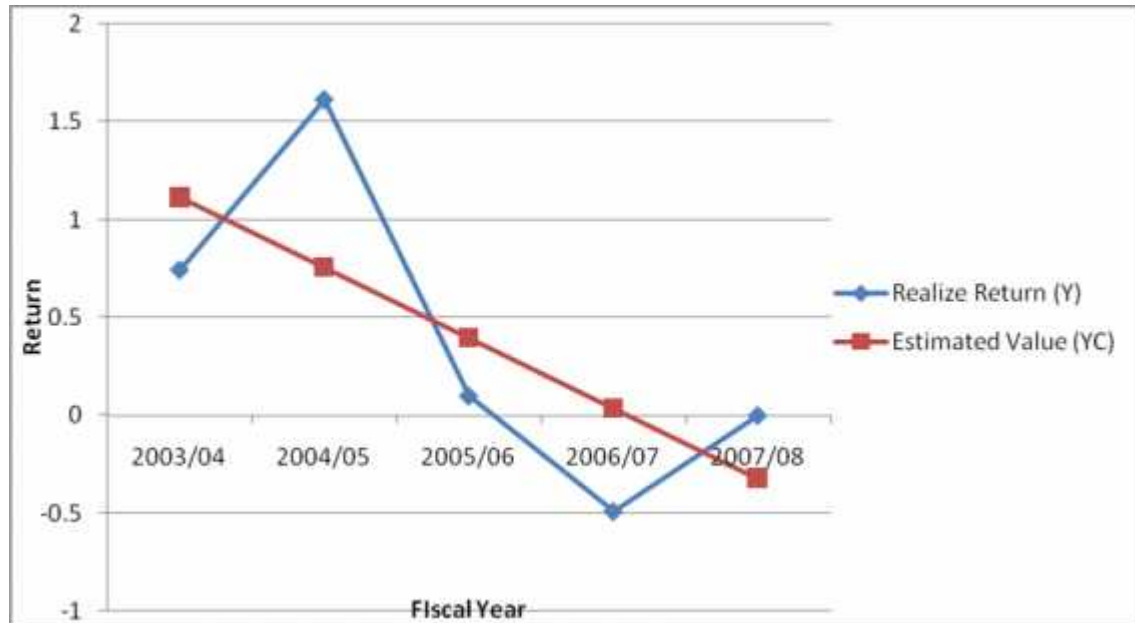
When  $X = 0$ ,  $Y_c = 0.3937 + 0.3593(0) = 0.3937$

When  $X = 1$ ,  $Y_c = 0.3937 + 0.3593(1) = 0.7530$

When  $X = 2$ ,  $Y_c = 0.3937 + 0.3593(2) = 1.1123$

**Figure 4.15**

**Line of best fit showing Realized and Estimated Value of Return of NABIL**



Above figure shows the movement of common stock of Nabil's realized rate of return and estimated rate of return. In the beginning the realized return is in

increasing trend and is maximum in the 2004/05. Then it starts to decline till the year 2006/07 which is in negative value then again it is increasing. That shows the realized return is fluctuating throughout the sample years. Similarly, the estimated rate of return is seen in decreasing trend through the sample years and is in negative value in the 2007/08.

### Standard Chartered Bank Limited (SCB)

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of SCB' respective year by using least square method which is shown in table 4.17.

**Table 4.17**  
**Regression Analysis of SCB**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	1.6607	-3.3214	4	2.0526	
2004/05	-1	0.7943	-0.7943	1	1.6296	
2005/06	0	0.1305	0	0	1.2066	
2006/07	1	-0.2304	-0.2304	1	0.7836	
2007/08	2	0.0581	0.1162	4	0.3606	
<b>Total</b>	<b>0</b>	<b>2.4132</b>	<b>-4.2299</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = Xa + bX$

We know,

$$a = \frac{Y}{n} - \frac{X}{n} \frac{\sum XY}{\sum X^2} = \frac{2.4132}{5} - \frac{0}{5} \frac{-4.2299}{10} = 1.2066 + 0.84598 = 2.05258$$

$$b = \frac{XY}{X^2} = \frac{4.2299}{10} = 0.4230$$

Hence, the line is  $Y_c = 1.2066 + 0.4230X$

When  $X = 2$ ,  $Y_c = 1.2066 + 0.4230(2) = 2.0526$

When  $X = 1$ ,  $Y_c = 1.2066 + 0.4230(1) = 1.6296$

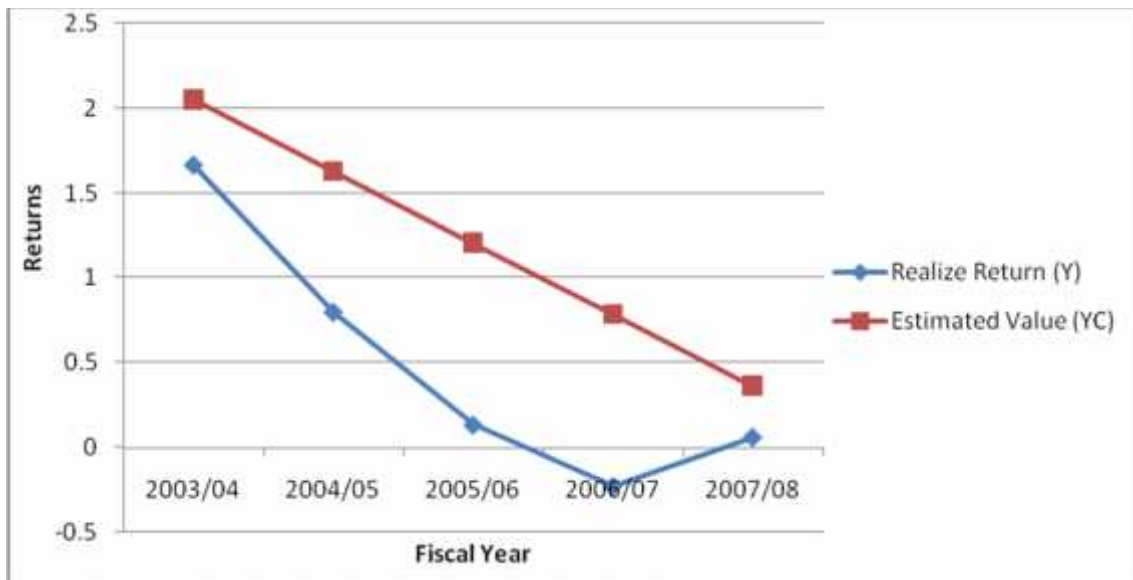
When  $X = 0$ ,  $Y_c = 1.2066 + 0.4230(0) = 1.2066$

When  $X = 1$ ,  $Y_c = 1.2066 + 0.4230(1) = 1.6296$

When  $X = 2$ ,  $Y_c = 1.2066 + 0.4230(2) = 2.0526$

**Figure 4.16**

**Line of best fit Showing Realized and Estimated Value of Return of SCB**



Above figure shows the movement of common stock of SCB's realized rate of return and estimated rate of return. The realized rate of return is in decreasing trend and is negative in the year 2006/07 then after it is increasing. The realized rate is maximum in the year 2003/04 and is minimum in the year 2006/07. Similarly, the estimated rate of return is also in the decreasing trend

throughout the sample years. The estimated rate of return is greater than the realized rate of return through the years but in recently the realized rate is increasing.

### Himalayan Bank Limited (HBL)

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of HBL's respective year by using least square method which is shown in Table 4.18.

**Table 4.18**  
**Regression Analysis of HBL**

Fiscal Year	Deviation from 2005/06 (X)	Realize Return (Y)	XY	X <sup>2</sup>	Estimated Value (Y <sub>c</sub> )	Remarks
2003/04	-2	0.9536	-1.9072	4	0.8699	
2004/05	-1	0.1250	-0.1250	1	0.6078	
2005/06	0	0.0750	0	0	0.3457	
2006/07	1	-0.2609	-0.2609	1	0.0836	
2007/08	2	-0.1640	-0.3280	4	-0.1785	
<b>Total</b>	<b>0</b>	<b>1.7287</b>	<b>-2.6211</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{1.7287}{5} = 0.3457$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-2.6211}{10} = -0.2621$$

Hence, the line is  $Y_c = 0.3457 - 0.2621X$

When  $X = 2$ ,  $Y_c = 0.3457 - 0.2621(2) = 0.8699$

When  $X = Z_1$ ,  $Y_c = 0.3457$   $Z = 0.2621(Z_1)$   $X = 0.6078$

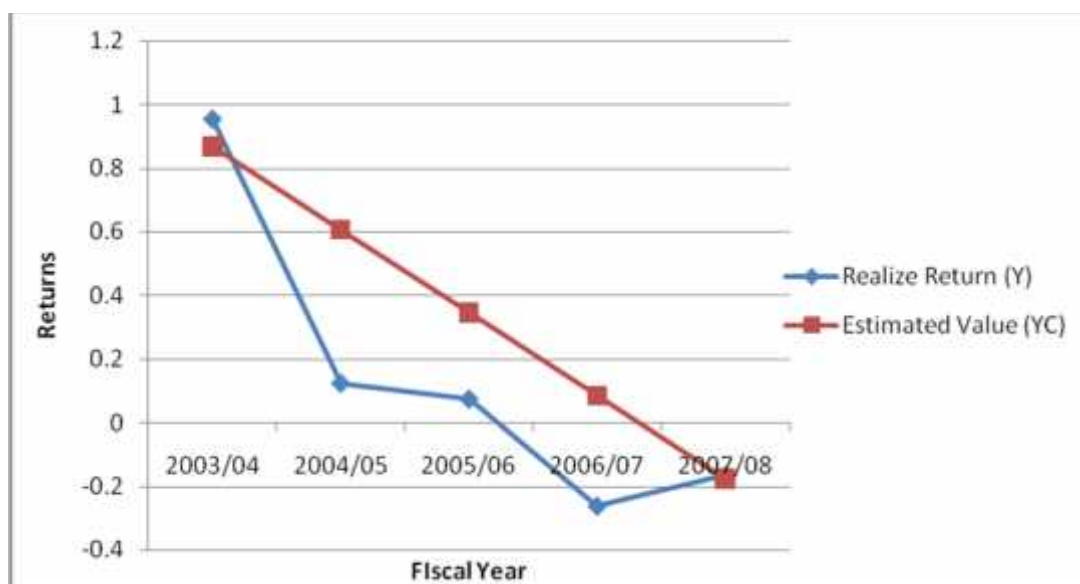
When  $X = 0$ ,  $Y_c = 0.3457$   $Z = 0.2621(Z_0)$   $X = 0.3457$

When  $X = 1$ ,  $Y_c = 0.3457$   $Z = 0.2621(1)$   $X = 0.0836$

When  $X = 2$ ,  $Y_c = 0.3457$   $Z = 0.2621(2)$   $X = 0.1785$

**Figure 4.17**

**Line of best fit Showing Realized and Estimated Value of Return of HBL**



Above figure shows the movement of common stock of HBL's realized rate of return and estimated rate of return. The realized rate of return is in decreasing trend throughout the sample years. It is maximum in the year 2003/04 and are in negative values in the years 2006/07 and 2007/08. Similarly, the estimated rate of return is also in the decreasing trend through the sample years. The estimated rate of return is highest in the year 2003/04 and is negative in the year 2007/08. The realized return is greater than the estimated value in the year 2003/04 and the remaining years, it is lower than the estimated value.

### **NIDC Capital Markets (NIDC CM)**

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of NIDC CM's respective year by using least square method which is shown in Table 4.19.



**Table 4.19**  
**Regression Analysis of NIDC**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.0500	-0.1000	4	0.3837	
2004/05	-1	-0.2733	0.2733	1	0.2731	
2005/06	0	2.0296	0	0	0.1625	
2006/07	1	-0.7083	-0.7083	1	0.0519	
2007/08	2	-0.2857	0.5714	4	-0.0587	
<b>Total</b>	<b>0</b>	<b>0.8123</b>	<b>-1.1064</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{0.8123}{5} = 0.1625$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-1.1064}{10} = -0.1106$$

Hence, the line is  $Y_c = 0.1625 - 0.1106X$

When  $X = 2$ ,  $Y_c = 0.1625 - 0.1106(2) = 0.3837$

When  $X = 1$ ,  $Y_c = 0.1625 - 0.1106(1) = 0.2731$

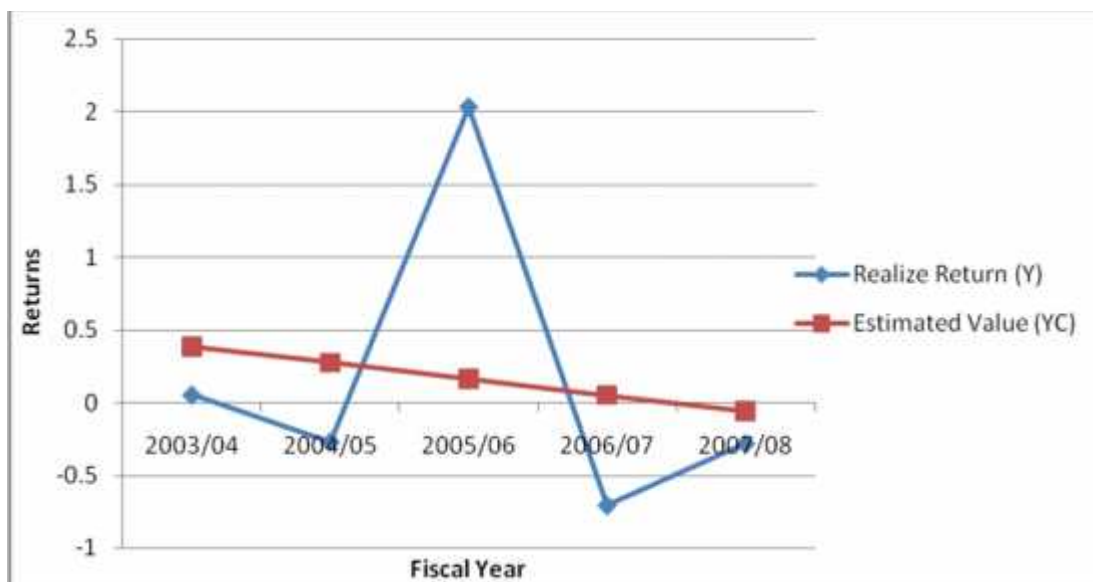
When  $X = 0$ ,  $Y_c = 0.1625 - 0.1106(0) = 0.1625$

When  $X = -1$ ,  $Y_c = 0.1625 - 0.1106(-1) = 0.0519$

When  $X = -2$ ,  $Y_c = 0.1625 - 0.1106(-2) = -0.0587$

**Figure 4.18**

**Line of best fit showing Realized and Estimated Value of Return of NIDC**



Above figure shows the movement of common stock of NIDC's realized rate of return and estimated rate of return. The realized rate of return is decreasing till the year 2004/05 and then it is increased dramatically in the year 2005/06. Again it is decreasing in the year 2006/07 and then it is gradually increasing in the year 2007/08. It is maximum in the year 2005/06 and is minimum in the year 2006/07. This shows the fluctuating trend of realized rate of return. Similarly, the estimated rate of return is in decreasing trend throughout the sample years. It is in negative value in the year 2007/08.

### **Nepal Finance and Saving Company (NEFINSCO)**

As already mentioned that the regression analysis predicts the future values. So, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of NEFINSCO's respective year by using least square method which is shown in Table 4.20.



**Table 4.20**

**Regression Analysis of NEFINSCO**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.0071	0.0142	4	1.7778	
2004/05	-1	4.3621	-4.3621	1	1.2690	
2005/06	0	-0.2267	0	0	0.7602	
2006/07	1	0.0862	0.0862	1	0.2514	
2007/08	2	-0.4133	-0.8266	4	-0.2574	
<b>Total</b>	<b>0</b>	<b>3.8012</b>	<b>-5.0883</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{3.8012}{5} = 0.7602$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-5.0883}{10} = -0.5088$$

Hence, the line is  $Y_c = 0.7602 - 0.5088X$

When  $X = 2$ ,  $Y_c = 0.7602 - 0.5088(2) = 1.7778$

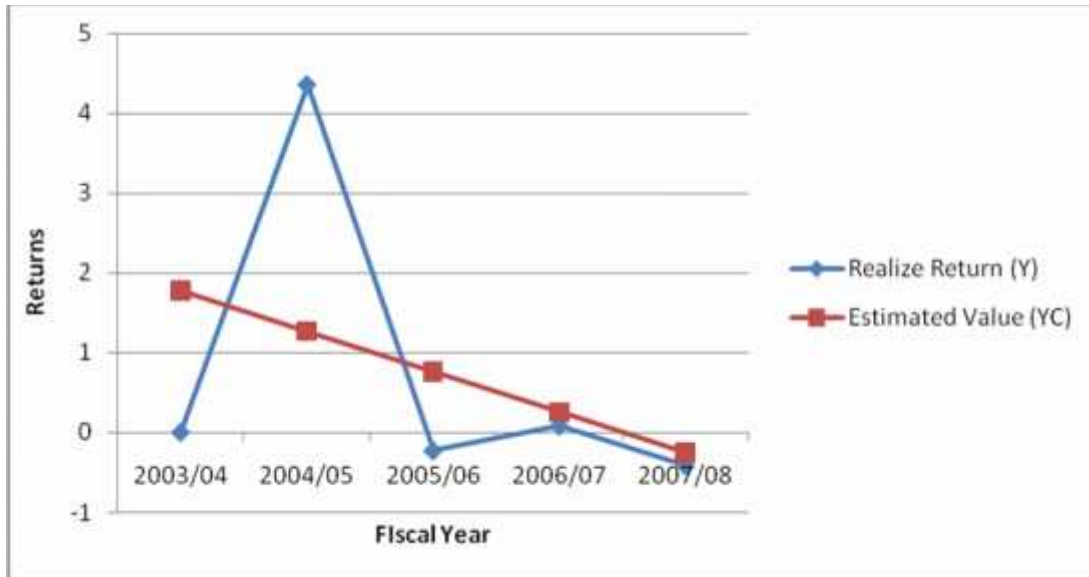
When  $X = 1$ ,  $Y_c = 0.7602 - 0.5088(1) = 1.2690$

When  $X = 0$ ,  $Y_c = 0.7602 - 0.5088(0) = 0.7602$

When  $X = 1$ ,  $Y_c = 0.7602 - 0.5088(1) = 0.2514$

When  $X = 2$ ,  $Y_c = 0.7602 - 0.5088(2) = -0.2574$

**Figure 4.19**  
**Line of best fit showing Realized and Estimated Value of Return of**  
**NEFINSCO**



Above figure shows the movement of common stock of NEFINSCO's realized rate of return and estimated rate of return. The realized rate of return is in increasing trend till the year 2004/05 then in decreasing trend then after. In other words, it can be said that the realized rate of return is fluctuating through the sample years. It is maximum in the year 2004/05 and is in negative value in the year 2006/07 and 2007/08. Similarly, the estimated rate of return is in decreasing trend. In the recent year the estimated return is in negative value.

### **National Finance Company (NFC)**

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of NFC's respective year by using least square method which is shown in Table 4.21.

**Table 4.21**  
**Regression Analysis of NFC**

Fiscal Year	Deviation from 2005/06 (X)	Realize Return (Y)	XY	X <sup>2</sup>	Estimated Value (Y <sub>c</sub> )	Remarks
2003/04	-2	0.5333	-1.0666	4	0.6347	
2004/05	-1	0.6600	-0.6600	1	0.4633	
2005/06	0	0.2553	0	0	0.2919	
2006/07	1	0.0089	0.0089	1	0.1205	
2007/08	2	0.0018	0.0036	4	-0.0509	
<b>Total</b>	<b>0</b>	<b>1.4593</b>	<b>-1.7141</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{1.4593}{5} = 0.2919$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-1.7141}{10} = -0.1714$$

Hence, the line is  $Y_c = 0.2919 - 0.1714X$

When  $X = 2$ ,  $Y_c = 0.2919 - 0.1714(2) = 0.6347$

When  $X = 1$ ,  $Y_c = 0.2919 - 0.1714(1) = 0.4633$

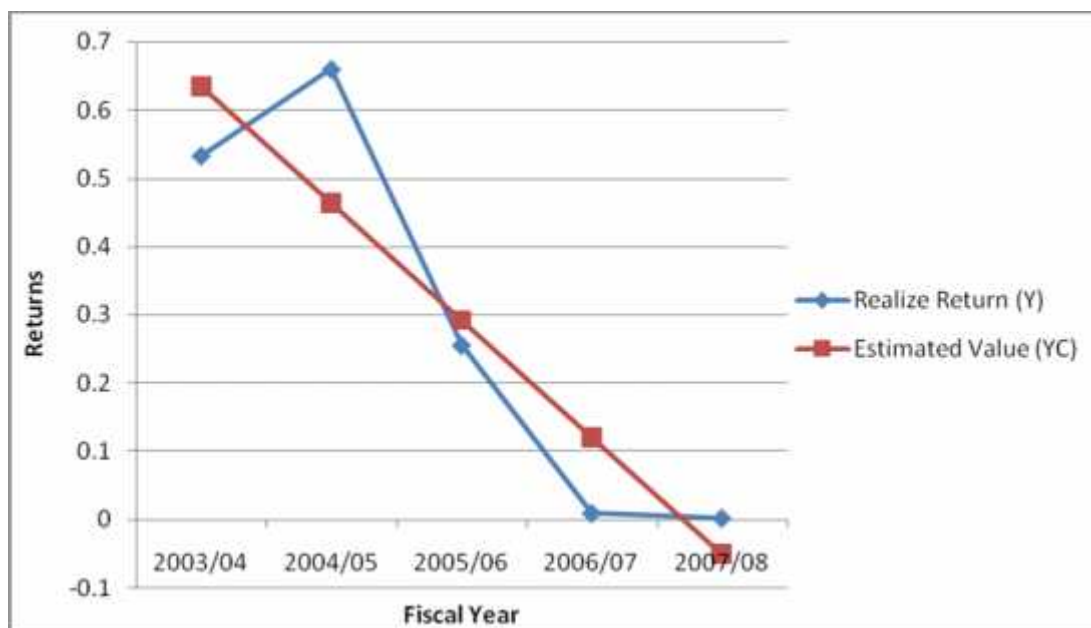
When  $X = 0$ ,  $Y_c = 0.2919 - 0.1714(0) = 0.2919$

When  $X = -1$ ,  $Y_c = 0.2919 - 0.1714(-1) = 0.1205$

When  $X = -2$ ,  $Y_c = 0.2919 - 0.1714(-2) = -0.0509$

**Figure 4.20**

**Line of best fit showing Realized and Estimated Value of Return of NFC**



Above figure shows the movement of common stock of NFC's realized rate of return and estimated rate of return. The realized rate of return is increasing till the year 2004/05. Then it is decreasing till 2006/07. Then after it is constant. The realized return is maximum in the year 2004/05 and is minimum in the year 2006/07. Similarly, the estimated rate of return is in decreasing trend. It is maximum in the year 2003/04 and is in negative value in the year 2007/08.

### **Kathmandu Finance Company (KFC)**

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of KFC's respective year by using least square method which is shown in Table 4.22.

**Table 4.22**  
**Regression Analysis of KFC**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.2000	-0.4000	4	1.0849	
2004/05	-1	2.2143	-2.2143	1	0.7763	
2005/06	0	0.1661	0	0	0.4677	
2006/07	1	-0.0125	-0.0125	1	0.1591	
2007/08	2	-0.2295	-0.4590	4	-0.1495	
<b>Total</b>	<b>0</b>	<b>2.3384</b>	<b>-3.0858</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{2.3384}{5} = 0.4677$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-3.0858}{10} = -0.3086$$

Hence, the line is  $Y_c = 0.4677 - 0.3086X$

When  $X = 2$ ,  $Y_c = 0.4677 - 0.3086(2) = 1.0849$

When  $X = 1$ ,  $Y_c = 0.4677 - 0.3086(1) = 0.7763$

When  $X = 0$ ,  $Y_c = 0.4677 - 0.3086(0) = 0.4677$

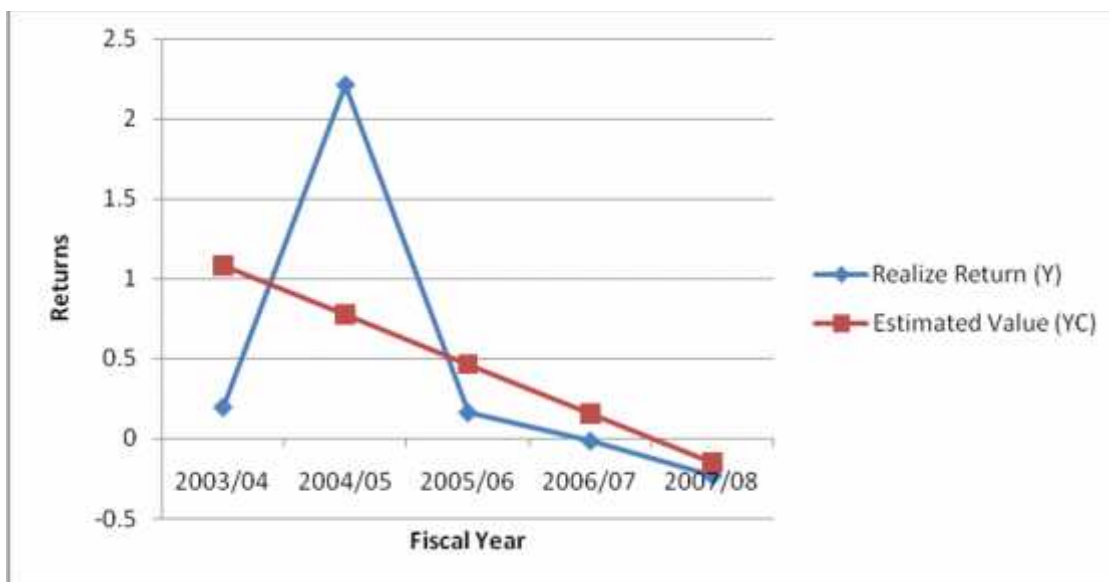
When  $X = 1$ ,  $Y_c = 0.4677 - 0.3086(1) = 0.1591$

When  $X = 2$ ,  $Y_c = 0.4677 - 0.3086(2) = -0.1495$



**Figure 4.21**

**Line of best fit showing Realized and Estimated Value of Return of KFC**



Above figure shows the movement of common stock of KFC's realized rate of return and estimated rate of return. The realized rate of return is in increasing trend till 2004/05 then after it is decreasing trend. The realized return is fluctuating throughout the sample years. It is maximum in the year 2004/05 and is in negative value in the years 2006/07 and 2007/08. Similarly, the estimated rate of return is in decreasing trend. It is maximum in the year and 2003/04 and is in negative value in the year 2007/08.

### **Nepal Insurance Company (NIC)**

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of NIC's respective year by using least square method which is shown in Table 4.23.

**Table 4.23**  
**Regression Analysis of NIC**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.1829	-0.3658	4	0.3574	
2004/05	-1	0.5109	-0.5109	1	0.2290	
2005/06	0	0.0935	0	0	0.1006	
2006/07	1	-0.1613	-0.1613	1	-0.0278	
2007/08	2	-0.1231	-0.1231	4	-0.1562	
<b>Total</b>	<b>0</b>	<b>0.5029</b>	<b>0.5029</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{0.5029}{5} = 0.1006$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{1.2842}{10} = 0.1284$$

Hence, the line is  $Y_c = 0.1006 + 0.1284X$

When  $X = 2$ ,  $Y_c = 0.1006 + 0.1284(2) = 0.3574$

When  $X = 1$ ,  $Y_c = 0.1006 + 0.1284(1) = 0.2290$

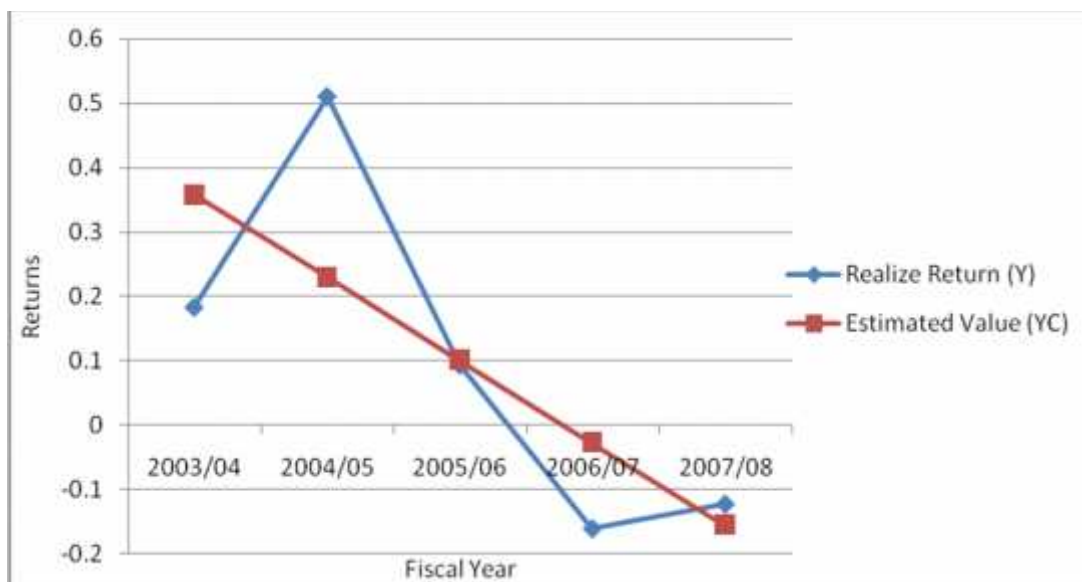
When  $X = 0$ ,  $Y_c = 0.1006 + 0.1284(0) = 0.1006$

When  $X = 1$ ,  $Y_c = 0.1006 + 0.1284(1) = 0.0278$

When  $X = 2$ ,  $Y_c = 0.1006 + 0.1284(2) = 0.1562$

**Figure 4.22**

**Line of best fit showing Realized and Estimated Value of Return of NIC**



Above figure shows the movement of common stock of NIC's realized rate of return and estimated rate of return. The realized rate of return is in increasing trend till 2004/05 and is in decreasing trend till 2006/07 then after it is increasing recently. It is maximum in the year 2004/05 and is in negative value in the years 2006/07 and 2007/08. That means the realized return is fluctuating through the sample years. Similarly, the estimated rate of return is in decreasing trend. It is maximum in the year 2003/04 and is in negative value in the years 2006/07 and 2007/08.

### **Premier Insurance Company (PIC)**

As already mentioned that the regression analysis predicts the future values, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of PIC's respectively year by year by using least square method which is shown in Table 4.24.

**Table 4.24**  
**Regression Analysis of PIC**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.1066	-0.2132	4	0.5177	
2004/05	-1	1.0800	-1.0800	1	0.3349	
2005/06	0	-0.0680	0	0	0.1521	
2006/07	1	-0.1818	-0.1818	1	-0.0307	
2007/08	2	-0.1765	-0.3530	4	-0.2135	
<b>Total</b>	<b>0</b>	<b>0.7603</b>	<b>-1.8280</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = a + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{0.7603}{5} = 0.1521$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-1.8280}{10} = -0.1828$$

Hence, the line is  $Y_c = 0.1521 - 0.1828X$

When  $X = 2$ ,  $Y_c = 0.1521 - 0.1828(2) = 0.5177$

When  $X = 1$ ,  $Y_c = 0.1521 - 0.1828(1) = 0.3349$

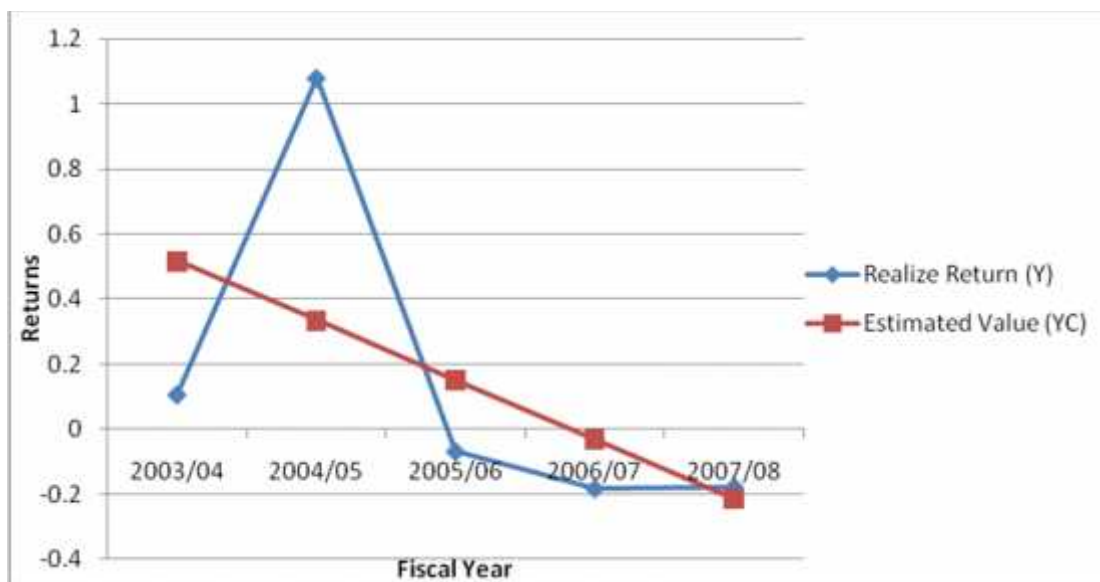
When  $X = 0$ ,  $Y_c = 0.1521 - 0.1828(0) = 0.1521$

When  $X = 1$ ,  $Y_c = 0.1521 - 0.1828(1) = -0.0307$

When  $X = 2$ ,  $Y_c = 0.1521 - 0.1828(2) = -0.2135$

**Figure 4.23**

**Line of best fit showing Realized and Estimated Value of Return of PIC**



Above figure shows the movement of common stock of PIC's realized rate of return and estimated rate of return. The realized rate of return is in increasing trend till 2004/05 and is in decreasing trend thereafter. It is maximum in the year 2004/05 and is in negative value in the year 2005/06, 2006/07 and 2007/08. Similarly, the estimated rate of return is in decreasing trend through the sample years. It is maximum in the year 2003/04 and is in negative value in the years 2006/07 and 2007/08.

### **United Insurance Company (UIC)**

As already mentioned that the regression analysis predicts the future values. So, the future realized rate of return for each year are estimated on the base of realized rate of return on common stock of UIC's respectively year by year by using least square method which is shown in Table 4.25.

**Table 4.25**  
**Regression Analysis of UIC**

<b>Fiscal Year</b>	<b>Deviation from 2005/06 (X)</b>	<b>Realize Return (Y)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>Estimated Value (Y<sub>c</sub>)</b>	<b>Remarks</b>
2003/04	-2	0.3564	-0.7128	4	0.6693	
2004/05	-1	1.0472	-1.0472	1	0.4336	
2005/06	0	-0.0694	0	0	0.1979	
2006/07	1	-0.0921	-0.0921	1	-0.0378	
2007/08	2	-0.2526	-0.5052	4	-0.2735	
<b>Total</b>	<b>0</b>	<b>0.9895</b>	<b>-2.3573</b>	<b>10</b>		

We have,

The least square equation is  $Y_c = Xa + bX$

We know,

$$\sum X = 0$$

$$a = \frac{\sum Y}{n} = \frac{0.9895}{5} = 0.1979$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-2.3573}{10} = -0.2357$$

Hence, the line is  $Y_c = 0.1979 - 0.2357X$

When  $X = 2$ ,  $Y_c = 0.1979 - 0.2357(2) = 0.6693$

When  $X = 1$ ,  $Y_c = 0.1979 - 0.2357(1) = 0.4336$

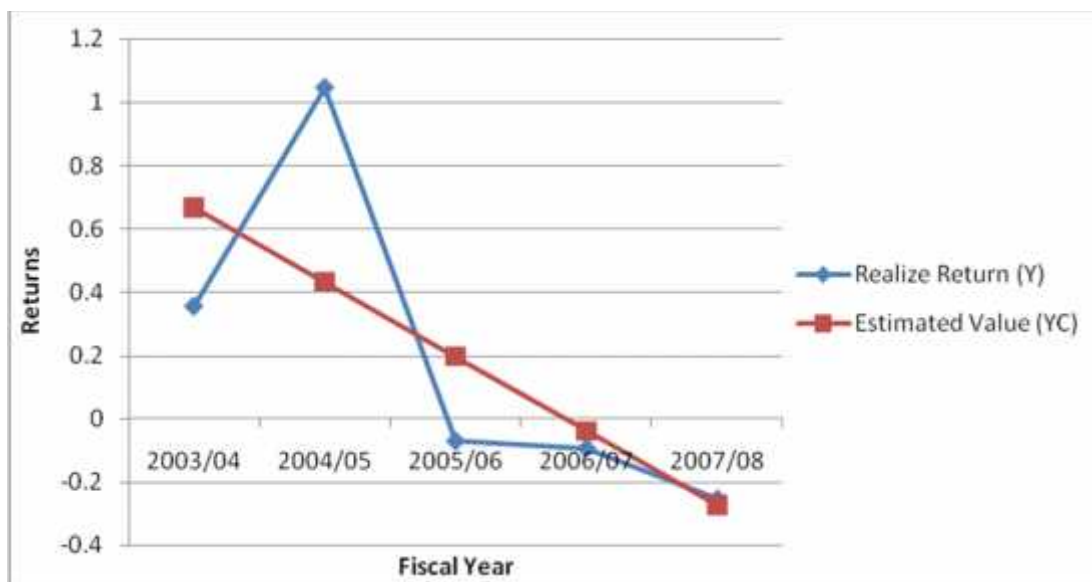
When  $X = 0$ ,  $Y_c = 0.1979 - 0.2357(0) = 0.1979$

When  $X = -1$ ,  $Y_c = 0.1979 - 0.2357(-1) = -0.0378$

When  $X = -2$ ,  $Y_c = 0.1979 - 0.2357(-2) = -0.2735$

**Figure 4.24**

**Line of best fit showing Realized and Estimated Value of Return of UIC**



Above figure shows the movement of common stock of UIC's realized rate of return and estimated rate of return. The realized rate of return is in increasing trend till the year 2004/05 and is in decreasing trend thereafter. It is maximum in the year 2004/05 and is in negative value in the years 2005/06, 2006/07 and 2007/08. Similarly, the estimated rate of return is in decreasing trend through the sample years. It is maximum in the year 2003/04 and is in negative value in the years 2006/07 and 2007/08.

### **4.13 Portfolio Analysis**

Analysis of risk and return so far is based on the investment in single security, i.e. held on isolation. Now, the analysis will be based on two assets portfolio. The portfolio analysis is performed to develop a portfolio that has the maximum return at whatever level of risk, an investor sees appropriate.

A portfolio is a combination of different investment assets, which will be able to reduce unsystematic or diversifiable risk. It can even reduce the portfolio's total diversifiable risk to zero. In the portfolio construction, correlation between the returns of the securities plays a significant role in risk reduction. If the correlation is perfectly positive (or +1) then the portfolio cannot reduce any level of risk. On the contrary, if it is perfectly negative (or -1), then the proper combination of the two securities will be able to reduce the unsystematic risk.

Most of the Nepalese investors not being aware of portfolio construction, invest their entire wealth in single asset. But if they understand the importance of portfolio analysis then there will be less chances of losing their return. Hence, the present study leaves rooms for further diversification impact on portfolio return and risk. In the present study first portfolios were constructed among banking sector and finance sector. Second portfolios were constructed among finance and insurance sector. Lastly, portfolio among banking sector and insurance sector were constructed. The portfolio risk, portfolio return and correlation among the securities are presented below. Detail Calculations presented in Annex III.

**Table 4.26**

**Portfolio Effect among Different Companies' Risk and Return**

Name of the Co. (A)	Name of the Co. (B)	$W_A$	$W_B$	$\bar{R}_A$	$\dagger_A$	$\bar{R}_B$	$\dagger_B$	$R_p$	$\dagger_p$	$X_{AB}$
Nabil	NIDC	0.6319	0.3681	0.3937	0.8116	0.1625	1.0079	0.3086	0.6327	- 0.0496
SCB	NEFINSCO	0.9517	0.0483	0.4826	0.7579	0.7602	2.0299	0.4960	0.7519	0.2520
HBL	NFC	-0.7905	1.7905	0.3457	0.6477	0.2919	0.2997	0.2494	0.0999	0.9829
NIDC	UIC	0.2324	0.7676	0.1625	1.0779	0.1979	0.5256	0.1897	0.4323	- 0.1920
NEFINSCO	PIC	-0.3383	1.3383	0.7602	2.0229	0.1521	0.5317	- 0.0536	0.1507	0.9774



NFC	NIC	0.4133	1.4133	0.4677	0.9112	0.1006	0.2710	0.0511	0.2708	0.9910
KFC	KFC	1.3903	- 0.3903	0.2919	0.2997	0.1521	0.5317	0.3465	0.4255	0.8290
NIC	Nabil	1.8564	- 0.8564	0.1521	0.5317	0.3937	0.8116	- 0.0548	0.2570	0.9302
PIC	SCB	1.1370	- 0.1370	0.1006	0.8116	0.4826	0.7579	0.0483	0.5122	0.6198
UIC	HBL	1.4234	- 0.4234	0.1979	0.7579	0.3457	0.6477	0.1353	0.1507	0.9080

The above table shows the portfolio effect of ten portfolios constructed within selected industries. The negative proportion of wealth indicates the borrowings on that security.

The portfolio between Nabil and NIDC capital Market shows that optimal proportion of wealth invested in Nabil is 0.6319 and NIDC CM is 0.3681 (WA+WB=1). The expected return and standard deviation of the portfolio are 30.86% and 63.27% respectively. The correlation between the two securities is -0.0496, which is perfectly negative correlated i.e. the proper combination of the securities can reduce the unsystematic risk totally.

The portfolio between SCB & NEFINSCO shows the optimal proportions of wealth invested are 0.9517 & 0.0483 respectively. The expected return of the portfolio is 49.60% & its S.D is 75.19%. The correlation between the two assets is 0.2520. Though highly positively correlated, the portfolio shows some effect, as the risk of the portfolio is lower than the risk of individual investment.

The portfolio between HBL& NFC whose correlation is 0.9829 shows that the optimal proportion of wealth invested in security are -0.7905 and 1.7905

respectively. The negative sign indicates the borrowing of 79.05% by HBL investing it along with all the inevitable fund of NFC. The portfolio's expected return and standard deviation are 24.94% and 9.99% respectively. Though highly positively correlated, some portfolio effect can be seen, as the portfolio risk is lower.

The portfolio between NIDC CM and UIC whose correlation is -0.1920 shows that the optimal proportion of wealth invested in each security are 0.2324 & 0.7676 respectively. The negative correlation refers to the portfolio effect for the reduction of risk. The expected return of the portfolio is 18.97% and its S.D. is 43.23%.

The portfolio between NEFINSCO and PIC shows that the optimal proportion of wealth invested in NEFINSCO is -0.3383 and PIC is 1.3383. The negative sign indicates the borrowing of 33.83% by NEFINSCO investing it along with the fund of PIC. The portfolio's expected return and S.D. are -5.36% and 15.07% respectively. The correlation between the two securities is 0.9774, which shows the portfolio effect, as the risk of the portfolio is lower than the risk of the individual investment. Though the return of the portfolio is in negative value risk can be reduced optimally, so the portfolio effect can be seen.

The portfolio between KFC and NIC whose correlation is 0.9910 shows that the optimal proportion of wealth invested in each security are -0.4133 and 1.4133 respectively. The negative proportion indicates the borrowing of 41.33% by KFC to invest along with the fund of NIC. Even the highly positive correlation shows the portfolio effect, as the portfolio risk is lower. The expected return and S.D. is -5.11% and 5.15% respectively.

The portfolio between NFC and PIC shows that optimal proportion of wealth invested in NFC is 1.3903 and in PIC is -0.3903 i.e. the borrowing of 39.03% by PIC investing along with the fund of NIC. The expected return and S.D. of the portfolio are 34.65% and 27.08% respectively. The correlation between the two securities is 0.8290, which is positively correlated but the risk of the portfolio is seen lower. That means some portfolio effect exist in the construction of portfolio.

The portfolio between PIC and Nabil also shows the portfolio effect. The optimal proportion of wealth invested in PIC and Nabil are 1.8564 and -0.8564 respectively i.e. 85.64% is borrowed by Nabil to invest in the portfolio along with PIC. The correlation between the two assets is 0.9302. The expected portfolio return and S.D. are -5.48% and 42.55% respectively. The portfolio return is in negative value but still the risk can be reduced noticeably.

The portfolio between NIC and SCB whose correlation is 0.6198 shows that the optimal proportion of wealth invested in each common stock is 1.1370 and -0.1370 respectively, i.e. 13.70% is borrowed by SCB to invest along with NIC in portfolio construction. The expected return & S.D. of the portfolio are 4.83% & 25.70% respectively. The risk can be reduced by forming an optimal portfolio.

The portfolio between UIC and HBL shows that the optimal proportion of wealth invested in UIC is 1.4234 and in HBL is -0.4234 i.e. the borrowing of 42.34% by HBL to invest along with UIC for the portfolio construction. The portfolio expected return is 13.53% & the portfolio's standard deviation is 51.22%. The correlation between two securities is 0.9080.

Though it is highly positive correlated, we can see the portfolio effect, as the risk of the portfolio is lower than that of individual investment.

In this way, the risk minimization process i.e. the portfolio construction is explored. It can be seen that the portfolio construction may not increase the expected return but can decrease the risk if proper portfolio is constructed.

#### **4.10 Major Findings of the Study**

The empirical findings on the basis of the analysis of the data and their interpretations, in relation to the set objectives can be summarized as follows.

) Almost all of the sample companies' market price of the stock is fluctuating through the sample period. This fluctuation indicates the uncertainty of return related with the stock in these companies. The stock price of Nabil, SCB, NIDC CM, NFC & KFC is maximum in the year then after it is decreasing whereas the stock price of HBL, NEFINSCO, NIC, PIC & UIC is maximum in the year 2004/05 then after it is decreasing except that of NEFINSCO because it's price is seen fluctuating.

) Most of the companies under study are offering cash dividends in the regular interval. Some of them are offering stock dividends as well in the form of bonus share. HBL is only the organization, which is declaring cash as well as stock dividends regularly through the sample years. Nabil, SCB, NFC are offering cash dividend regularly but not the stock dividend. They are offering stock dividend sometimes only. NIDC CM, KFC, PIC, UIC had not offer stock dividend till now but they are offering cash dividend regularly. NEFINSCO & NIC are offering both cash as well as stock dividend but not in a regular interval.

) The expected rate of return is a weighted average of the possible returns. Expected return on the common stock of NEFINSCO is the highest i.e. 76.02%, which is because of the unrealistic annual return in the

year 2004/05 . The expected return of SCB, KFC, Nabil , HBL, NFC, UFC, NIDC CM, PIC & NIC are 48.26%, 46.77%,39.37%, 34.57%, 29.19%,19.79%, 16.25%, 15.21% & 10.06% respectively. Hence, expected return of the common stock of NIC is the lowest among the sample companies.

) Standard Deviation is a measure of variability of returns from the expected one i.e. unsystematic risk. SD of NEFINSCO is the highest i.e. 202.29% and that of NIC is the lowest one i.e. 27.10%. Likewise, the Standard Deviations of NIDC CM, KFC, Nabil, SCB, HBL, PIC, UIC & NFC are 107.79%, 99.12%, 81.16%,75.79%,64.77%, 53.17%, 52.56% &29.97% respectively. That means common stock of NEFINSCO is the most risky and that of NIC is the least risky to invest.

) Average realized returns of the sample companies are not the same over the sample periods; so, SD may not be the précised measure of risk. Hence, coefficient of variation is preferred as a measure of risk because it is the relative measure of risk. CV of NFC is the lowest one i.e. 1.0267 whereas that of NIDC CM is the highest one i.e. 6.6332. Likewise, the coefficient of variations of SCB, HBL, Nabil, KFC, UIC, NEFINSCO, NIC & PIC are 1.5705, 1.8736, 2.0615, 2.1193, 2.6559, 2.6610, 2.6938 & 3.4957 respectively. Hence, the investment in the common stock of NFC is the best option.

) An aggregate market value of a security is the market capitalization of that security which is the product of outstanding equity and the market price of a security. On the basis of market capitalization, SCB has the highest value i.e.41.07% whereas NEFINSCO has the lowest value i.e. 0.26% Likewise, the market values of Nabil, HBL, NIC, NFC, UIC, NIDC CM, PIC, & KFC are 26.62%, 26.45%, 2.66%, 1.01%, 0.61%, 0.55%, 0.42% & 0.35% respectively.

) NEPSE index, as a measure of market return is also seems to be fluctuating through the sample years. It is increasing till 2004/05 showing maximum value of 360.7 and then decreasing thereafter.

) Expected returns of all the sample companies except that of NIC, are higher than that of market i.e.  $\bar{R} > \bar{R}_m$ . Only NIC has the expected return lower than the market i.e.  $\bar{R} < \bar{R}_m$ .

) Most of the sample companies' standard deviation is more than the standard deviation of market but that of NFC & NIC is less than that of the market.

) As already mentioned the coefficient of variation is the best measure of risk, so the common stock of Nabil, SCB, HBL, NEFINSCO, NFC, NIC, PIC, & UIC have CV less than that of market. Only the common stock of NIDC CM has C.V. more than that of market.

) Beta coefficient can be taken as an index of systematic risk. Betas of Nabil, SCB, HBL, NEFINSCO, KFC, PIC & UIC are greater than one i.e.  $\beta > 1$ . So, these companies' common stocks are aggressive assets. Similarly, beta of NIDC CM, NFC, & NIC are less than one i.e.  $\beta < 1$ . So, the common stocks of those companies are defensive assets.

) CAPM is a model that best describes the relationship between risk and required rate of return. The common stocks of all the sample companies are under priced. Hence, as per CAPM analysis, these under priced stocks are recommended to buy but other analysis should also be made before buying these assets.

) The first hypothesis is based on the test of significance of different mean i.e. sample companies' return and market return. This hypothesis is expected to test whether overall return on the common stock of the sample companies is equal to the market return or not. Thus, over the

study period, it was found that the null hypothesis is accepted i.e. overall return of the sample companies is equal to the market.

) The second hypothesis is based on the test of significance of single mean i.e. sample companies' beta and market beta. It is executed to test whether overall beta of the sample companies is equal to the market beta i.e.  $\beta = 1$  or not. Thus, over the study period, it was found that null hypothesis is accepted if the levels of significance are 1%, 2%, & 5%. Which indicates that the portfolio beta of the sample companies' common stock is equal to one but if the level of significance is 10%, the null hypothesis is rejected, which means that the portfolio beta of the sample companies is not equal to one. So, it gives the mixed result.

) Regression analysis just compares the realized return and the estimated return. The estimated return is seen decreasing in all companies but the realized return is seen fluctuating in most of the companies and decreasing in other companies. In most of the study period, the estimated rate of return exceeds the realized rate of return i.e. realized return can meet the estimated return. But in some years, the realized return unexpectedly exceeds the estimated return.

) Portfolio construction reduces the unsystematic risk related to the individual security significantly. In this study, ten portfolios among the sample companies were constructed. Among them, two portfolios between Nabil & NIDC CM and NIDC CM & UIC are beneficial because the correlations between these companies are perfectly negative respectively, which indicates that the risk can be totally minimized. The correlation between other portfolios were perfectly positive but were able to minimize risk to some extent. So, ranking of the portfolios from beneficial to less beneficial were Nabil & NIDC CM, NIDC CM & UIC, SCB & NEFINSCO,

NIC & SCB, NFC & PIC, UIC & HBL, PIC & Nabil, NEFINSCO & PIC,  
HBL & NFC and KFC & NIC respectively.



## **CHAPTER – V**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

In this chapter summary of the whole research work, conclusions derived from the analysis of the study and recommendations are presented. Summary of the study has been painted in the first section. The second sector has been designed for the conclusion drawn from the study. In the last section of this chapter, recommendations, observed on the basis of finding have been labeled.

#### **5.4 Summary**

Nepal is very rich in its natural beauty but it has poor economy. Development of any country would be a daydream unless an adequate amount of capital is invested and mobilized in productive sectors like industries and business. In fact the developed economies of the world are the results of substantial investment in such sectors. In order to boost up the economy of any country, it is extremely essential to have a mechanism through which small amount of saving can be collected and transferred into efficient uses. Hence, capital market plays such roles and thus contributes to the nation's economic development.

For the development of efficient capital market, it is essential to gear up saving and create suitable investment atmosphere as well as a sound corporate culture. A well-developed capital market possible to take better advantage of opportunities. Stock market as a component of the capital market is a place where shares of listed companies are traded and transferred from one hand to another at a fair price through the organized brokerage system. Since fair price fully reflects the available information, so the stock market should show efficiency in pricing the shares. While pricing the shares, many macro as well as micro economic factors

should be taken into consideration but only the risk and return factors are undertaken for this research work.

Risk and return play a vital role in analyzing the investment. Stocks may have greater volatility risk than other investment that take a random and unpredictable path. Higher risk may have greater possible return. Investors' attitude, perception and risk handling capacity also play a vital role in rational investment decision. Diversification lower the risk of the portfolio and the risk can be measured by the beta coefficient.

The common stock is the risk security because of the uncertainty of the return. This uncertainty is due to share price, which is driven both by fundamental business values and stock market sentiment. So, for a given business it is always worth attempting to identify which of these factors driving its' share price. So, this research work was undertaken to analyze the impact of risk and return factors on share price i.e. to analyze the common stock investment. While analyzing, it is seen that the stock market is not efficient which is due to lack of education, policies, information, resources, technologies, etc. The study helps to understand & increase stock investment, to make managerial as well as rational individual decision. Despite the significance, time and resources are the main constraints for this study.

Among the listed companies under financial sector, ten companies have been randomly selected for the present study. A brief review of available literature has been conducted; sound methodology has been developed for the analysis of the gathered information. The study basically depends on the secondary data collected from the NEPSE, SEBO/N and other related companies but primary data, collected through personal interviews with investors, executives of the companies and officials of NEPSE and SEBO/N, is also used in different stage of this

research work. Analysis of the data is done in a simple way as far as possible. Tables and graphs are drawn to make the analysis easier to understand. Lastly, summary, results of the analysis and recommendations are figured in a simple manner as far as possible.

## **5.5 Conclusion**

So far, this research work is concerned with the analysis of risk and return of financial sector only. But this study was undertaken to explore the impact of risk and return on share price of not only the financial sector but of the Nepalese stock market as a whole. The findings of this study may be important information for those who are directly or indirectly concerned with the common stock investment. Hence, on the basis of empirical findings of the study, more generalize conclusions as far as possible are tried to outlined.

) The market price of a common stock in Nepalese capital market does not seem constant. It is fluctuating but more importantly, it is decreasing in recent years. Hence, it can be concluded that the market price of a stock is effected both by micro as well as macro economic environment but micro economic factors are dominating the price of a stock.

) Dividend simply is the earning that an investor gets after investing in a common stock. Some companies were declaring cash dividends only whereas others were declaring both cash as well as stock dividends. Hence, dividends were declared by the listed companies but not necessarily in a regular basis.

) The return is the income received on a stock investment. Most of the companies' expected returns are higher than that of market, which indicates that the investment in the listed companies is quite beneficial.

- ) Standard deviation is just a measure of unsystematic risk. S.D. of most of the companies is more than that of the market. Hence, the S.D. proves the proverb 'high risk-high return' because the companies having high return shows high S.D. and vice versa.
- ) Coefficient of variation is the more precise measure of risk. It is the relative measure of risk. Most of the companies have C.V. less than that of market. So, lesser C.V. is opted for the investment. Hence, the investment on stock market seems beneficial.
- ) Beta coefficient is a measure of systematic risk, which is defined by market. Beta shows mixed result, some of the companies are aggressive assets whereas others are defensive assets. Hence, it can be concluded that the market is very sensitive.
- ) CAPM analysis shows that almost all of the companies' common stocks are under priced. So, it can be said that the under priced stocks have potentiality to beat the market easily.
- ) Comparison of return, on the basis of first hypothesis, shows that the market return and the sample companies' overall return are equal. Second hypothesis compares risk, which shows mixed result. In 1%, 2% & 5% level of significance portfolio beta equals one but in 10% level of significance portfolio beta is not equal to market beta i.e. one.
- ) Portfolio analysis shows that the portfolio construction is helpful in reducing unsystematic risk. If the portfolio's correlation is highly negative then it can eliminate the risk totally and if the correlation is highly positive then also it is beneficial because it can reduce the risk to some extent & can increase the portfolio's return.

In brief, it can be concluded that the market price of a share is determined by many micro as well as macro economic factors. Risk and return, a part of macro

economic factors highly affects the share price. High risk may results in high return, which in turn is helpful in increasing share price taking other factors also into consideration. As a whole, stock investment seems to be risky as well as beneficial as evident from this study. Shares are performing better than the market, which indicates the chance of more return than expected but the risk behind that return cannot be ignored. Constructing effective portfolio can reduce such risk. Hence, risk and return analysis plays a crucial role in the determination of share price.

## **5.6 Recommendations**

Nepalese stock market is in immature stage. So, it may have different problems (Refer Chapter I). The concerned bodies may have been working to overcome those problems. But still this research work points out some of the factors that can be considered in making rational decision and in the development of the stock market as well. Hence, on the basis of the analysis and the empirical findings of this research, following recommendations are made which may be beneficial for those who are directly or indirectly concerned with the stock market.

### **To the Private Investors**

1. Investors should explore themselves about their need, risk-taking capabilities, tackling with ever changing market before making stock investment.
2. Investors, so far, are found to be running after return only. They are just ignorant about the risk associated with that return. So, for rational investment decision they have to focus their mind on return and risk as well.
3. Most of the investments are done without clear objectives, which is the main reason behind the stock investment being risky. So,

investors, should set clear objectives and they must give a try to secondary market rather than purchasing shares from primary market because initial public offering is more risky.

### **To the Listed Companies**

1. The companies seem to be responsible for increasing (or decreasing) the unsystematic risk that badly hits the business and profit. So, proper and efficient management is essential for the progress of any organization.
2. All the companies are recommended to organize the AGM in time, which will make a positive impact in the market and also assists to increase the demand of share. This consequently helps to increase the market price of the shares.
3. Dissemination of timely information to those who are directly or indirectly concerned with the company is essential to gain confidence of the public.

### **To the Concerned Regulatory Bodies (i.e. SEBO/N & NEPSE)**

1. As evident from this study, there is seen shortage of professional investors in the stock market. So, concerned regulatory bodies are recommended to allow entering the mutual fund business in the market for the well diversification of portfolio in national as well as global levels.
2. While constructing sound portfolio, fixed yielding securities are very essential but the concerned regulatory bodies do not have such securities. So, enhancement of tradable investment alternatives is quite essential.
3. They are recommended to carry out further advanced research on common stock investment for the development of an efficient capital market.

## **To His Majesty of Government**

1. Saving in fixed account, construction of building, purchase of land , etc were the major area, which were dominating the area of investment in Nepal for long period. Recently the attitudes of the investors are changing. They are showing interest towards shares, debentures and other securities. But the policies and programmers of Government do not seem to be directed towards the development of domestic stock market ( OTC Market ) for mobilizing shares and providing equitable investment opportunities for the people of all regions. So, Government is recommended to work in this aspect.
2. Unlike the people of previous years, nowadays most of the investors wanted return immediately and invest for short period only. This changing attitude is due to many risky situations or circumstances. Because of violence and unstable political situation of the country, there is decrease in investment. So, Government has to play a vital role to improve conditions of investing environment to promote investments.

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