

# **CHAPTER-I**

## **INTRODUCTION**

### **1.1 Background**

Nepal is a country with poor economic status, should gradually lift its dependency on agriculture in order to solve its problem of poverty. So, the non-agricultural sectors should also be given priority. The non- agricultural sector can also help in economic development and reduction of unemployment to a large extent. Hence, for this, various industries, financial institutions, health and educational enterprises should be established. But establishment of such institutions is not sufficient for economic development; their successful operation is also necessary. For successful operation, finance plays a vital role in each organization. Finance is the art and science of managing money, which is concerned with the process, institutions, markets and instructions involved in the transfer of money among individuals, business and government. The proper decisions made by the top management related to the management of funds, determines the future of the organization. Investment decisions, financing decisions and assets management decisions are the top management decisions related to finance.

Financial analysis is the basis for top management decisions related to finance. Financial analysis is the tool of decision-making and covers the acquisition, utilization, control and administration of funds. Such type of study and analysis is performed through managerial finance. Managerial finance is the part of finance, which is concerned with the duties of the financial manager in a business firm. "Managerial finance is important in all types of businesses whether they are public or private, deal with financial services or are manufacturers. The types of jobs one encounters in managerial finance range from decisions regarding plant expansions to choosing what types of securities to issue to finance expansion"(Weston and Brigham; 1996:5).

Today the field of finance is broad and dynamic. Various tools of analysis for acquisition of funds and effective utilization have been developed. The stock market is an important sector of economy concerned with finance. After developing the finance as a separate discipline in 1900 A.D. the scope of finance has developed considerably. Now, capital

markets have been established for raising funds by issuing various securities. For stock exchange both primary and secondary markets have been established; primary market for initial offering and secondary market for trading of securities.

Any investor purchases the various securities to get returns. So, return is the main factor of investment but it involves risk. It can be said that risk and return are the main factors of investments. Finance deals with the risk and return on the monetary terms of an investment. Return is the reward for waiting and compensation for risk bearing. Researches have shown that most of the investors are risk averter. So, it can be concluded that people invest their assets in those opportunities where there is higher return with low level of risk.

“Risk is defined in Webster’s Dictionary as "a hazard; a peril; exposure to loss or injury." So, risk refers to the chance that some unfavorable event will occur. Risk is the product of uncertainty whose magnitude depends upon the degree of variability in uncertain cash flows. Most people view risk in the manner as just described—a chance of loss. In reality, risk occurs when the outcome of a particular activity or event is uncertain.

Common stock investment is a risky investment. . There is the uncertainty of future return whose main source is the price fluctuation of the stock. The stock price may be decreased due to the economic factors such as inflation, interest rates, strength of currency, economic growth of the nation etc. The stock prices are also affected by political and legal environment of the nation. The dividend received by the investors directly contributes to the return received by the investors but at the same time reduces the amount of earnings reinvested by the firm resulting limited potential growth. So, mainly the risk of a stock investment can be measured by its volatility in price and uncertainty of fluctuation in dividend.

Most of the investors are risk averse, the main problem in investment is to select the security having low risk but having high return. Even if the investors can not increase the return substantially, they can surely reduce the risk by diversification of the investment funds in different types of securities making a portfolio. Making a portfolio of common stocks an investor can eliminate the unsystematic risk considerably. But the systematic

risk can't be avoided even investing in a portfolio. Any investor will want their investment to yield favorable return and so they invest in those securities, which provide greater expected returns. Investment is defined as the sacrifice of current Rs. amount for future Rs. amount. So, investors sacrifice their current amount in securities in anticipation of higher future benefits with low level of risk.

In the investment of common stock an investor agrees to pay the price for stock in the anticipation of future dividend and growth in stock price. But various financial and non-financial factors play a great role in price determination even in the imperfect market.

A financial market brings together people and organizations willing to borrow money with those having surplus funds. The capital market is the part of financial market, which is related to long term debt and corporate stocks. In capital market the financial assets such as stocks and bonds are purchased or sold. The main objective of such markets is to create opportunity for maximum number of people to get the benefit from the return obtained by directing the economy towards the productive sectors by mobilizing long-term capital. The objective is fulfilled by the stock market providing various opportunities in investing in stocks of various companies. Stock market is a financial market, which probably has the greatest glamour and is perhaps the least understood. Some observers consider it as a legalized heaven for gambling and many investors consider stock market investing as a game in which the sole aim is to pick winners.

Organized stock exchanges and over the counter markets help to bring together people and organizations for stock and funds exchange. The organized stock exchange buys the securities of large business firms for the general public where the transactions of only listed companies, are made. Where as in the over the counter markets the stocks of the companies not listed in the stock exchange are traded. Without the development of financial market the proper choice of securities for investment is impossible. Mainly the financial market comprises of money market and capital market. Money markets are the markets for short-term debt securities, which mature in less than one year such as 90 days treasury bills issued by Nepal Rastra Bank. Capital markets are the markets for long-term debt and corporate stocks. The financial markets may be classified into primary and secondary markets on the basis of economic function. The market for new

securities is called primary market. In primary market, the shares are offered to general public for the first time. In secondary market, the existing shares i.e. the shares that have already been purchased by the public in primary market are traded again and again.

In Nepal, the institutional development of stock market began after the establishment of "Security Exchange Center" in 1976 A. D. Now it is called Nepal Stock Exchange Limited. But there are various problems for the development of stock markets in Nepal even after the establishment of Nepal Stock Exchange Limited. The main problem is that-the lack of knowledge and information about stock investments due to which the market intermediaries exploit investors. The interested investors also afraid to invest in stocks and the investors who are investing in stocks are found to invest in single security due to lack of ability to analyze risk and return and low level of knowledge about portfolio investment. So, in Nepal proper information about the stock investment should be provided to participate the people in stock investment because the dynamic trading of stocks may play an important role in economic development of the nation. To exist the security market their mechanism should be created to make easy the exchange of securities. "Security markets exist in order to bring together buyers and sellers of securities meaning their mechanisms are created to facilitate the exchange of financial assets"(Sharpe, Alexander and Bailey; 2003:9).

## **1.2 Focus of the study**

Amongst the various securities this study has been focused on common stocks of commercial banks. "Common stocks are securities that represent the ultimate ownership (and risk) position in a corporation" (Van Horn and Wachowicz; 2001:75). Common stocks represent a commitment on the part of a corporation to pay periodically whatever its board of directors deems appropriate as a cash dividend". From these quotations it can be concluded that common stockholders of a company are its ultimate owners and collectively they own the company assuming that ultimate risk is associated with ownership. The investors invest in common stock expecting higher return but this expectation may or may not change into reality, so it is a major risk in stock market investment. Due to this reason the common stock is known as risky security. From overall studies it can be concluded that in Nepal there is a problem of systematic

information between management of Nepalese companies and Nepalese investors due to which there is restrictions in the development of stock markets in Nepal.

Banking sectors in Nepal are the most dynamic part of the national economy. So, if there are insufficiencies of banking and financial facilities the growth of the economic development becomes very slow. Commercial banks collect unused funds and mobilize it in needed sectors. It is the heart of trade and commerce. "Commercial bank exchange money, accepts deposits, grants loans, and performs other commercial bank functions and is not a bank meant for cooperative, agriculture, industrial as per specific function." (Fama; 1991:1575-1617) The main objective of a commercial bank is to earn profit by proper mobilization of resources.

The history of modern banking in Nepal began in 1937 A. D. when Nepal Bank Limited was established as a first bank of Nepal. It became public limited company in 1953 A. D. Later in 1955 A. D., Nepal Rastra Bank was established which supervises, protects and directs the functions of commercial banking activities. In 1966 A. D. Rastriya Banijya Bank was established as a commercial bank, which is fully owned by the Nepal Government. When government adopted the policy of the globalization and liberalization, several financial institutions and commercial banks were established to mobilize scattered funds in the economy. Since then many private commercial banks and joint venture banks are established. Among all the banks fifteen commercial banks are listed in Nepal stock exchange, which have highest contribution on the market capitalization as compared to other sectors. In Nepal, foreign joint venture banks perform better than Nepalese one because of their higher managerial efficiency and capacity of proper management of risk. Nepalese banks have a high degree of firm-specific risk. Recently, two Nepalese banks, Nepal Bank limited and Rastriya Banijya Bank have been managed by foreign management groups but no considerable performance have found for the period of one year of management transfer. However, Nepalese Banks have high potentialities to increase their risk attitude and improving their internal management.

### **1.3 Statement of the problem**

The study of "risk and return analysis" occupies an important place in the theory of finance. Lack of knowledge about risk and return is the main cause of manipulation by the financial institutions or stockbrokers to the investors. Investor's attitude and

perception towards stock investment is not good in Nepalese stock market. So, they feel more risk in stock investment than as its real risk. The academicians also can not analyze risk and return properly while investing. Investors should be informed properly about the corporation, it's financial position and about the stock market because investors are the main bases for any company and stockbrokers. Investors are the primary source of funds or capital for company and also the source of revenue as a customer for the stockbrokers and financial intermediaries. But in Nepal, there are no any separate institutions providing adequate information to investors about the stock market. It seems necessary to establish separate entity, which provides adequate information about financial markets, which may accelerate the stock investment and market efficiency.

To invest in stocks one should know what the accurate price of the stock is. For this the theoretical knowledge as well as market conditions should be known clearly about the determinants of stock prices. According to the theory of stock price, stock price in market is guided by the intrinsic value, which is calculated with the inputs-dividend, required rate of return of investors and growth in dividends. The stock prices are assumed to remain in security market line and if it is not so, they strive towards this line and come to the equilibrium. If the expected rate of return from stock and required rate of return of investors are not equal, the intrinsic and market value of stock will not be equal. In such case the price of stock may be over priced or under priced. Hence, the location of expected rate of return may lie above or below the security market line. The stocks firstly traded in the primary market by the issuing corporation and these securities are traded in the secondary market by the investors and stockbrokers. Since common stocks do not guarantee for dividends and capital gain, it needs courage to invest on it. For the guarantee of return a proper analysis of risk and return should be performed to the prevailing market atmosphere.

The major problems identified in this study are:

- What are the evaluation criteria for investing in the stocks to get accurate measurement of return?
- How the return is measured? How can higher return be achieved assuming lower risk?

- What kind of relationship (positive or negative) exists between dividend and stock prices?
- How the investors know the magnitude of risk?
- How much is the compensation for waiting and risk bearing?
- Does the portfolio investment reduce the risk within the sector? What is the proper weight of stocks in portfolios?
- What kind of risk exists on the stock investment of Nepalese commercial banks?

#### **1.4 Objectives of the study**

This study is undertaken to focus on the risk and return on common stock investment of Nepalese commercial banks. So general level objective of this study is to assess the risk and return on common stock investment of commercial banks. The specific level objectives of the study are-

- To study various aspects of return and risk of common stock investment
- To find the over-priced, under-priced and correctly priced (equilibrium priced) common stocks of commercial banks
- To examine the relationship between dividend and market price of stock with reference to their risk and return,
- To calculate the risk and return of common stock.

#### **1.5 Importance of the study**

This research study will give correct information about Nepalese stock market and may contribute in the analytical power of the investors. In Nepalese context, very few studies are made and there are no specific magazines and articles on the topic. So, the study will be more significant for exploring and increasing stock investment. The main significances of this study are:

- This study will be beneficial for all the persons who are directly or indirectly related to the Nepalese stock market.
- This study provides some knowledge about the Nepalese stock market developments along with providing ideas to minimize the risk on stock investment.
- This study will be a matter of interest for academicians, students and investors.

- This study might have the clear conception over their investment. They will be able to distinct the right investment among all investment opportunities.

### **1.6 Limitations of the Study**

Any research study may not free from its own limitations. Mainly this study is made for the partial fulfillment of M. B.S. level. So, there are couples of limitations, which weaken the generalization. The main limitations are-inadequate coverage of industries, time period taken, reliability of statistical tools used and other variables, which are not included in the study. The following limitations are presented of this study are:

- The study has been done covering the five years data only from 2002/03 to 2006/2007 as available from website of NEPSE.
- The study is based on seven listed commercial banks in NEPSE only.
- Variation in data published from different sources like NEPSE and from company itself.
- Analysis is mainly based on the tools developed in the context of an efficient market condition.
- The study is mainly based on the secondary data such as annual report of the selected banks and companies, other related journals, previous thesis, magazines, books etc.
- The reliability of conclusions of this study is based upon the accuracy of secondary data.
- Return of market is calculated considering price only but sample stock return calculated considering price & dividend.

Time and resources are also the limitation of this study.

### **1.7 Organization of the Study**

This study has been organized into five chapters. The contents of each of these chapters are as follows:

Chapter I	:	Introduction
Chapter II	:	Review of Literature
Chapter III	:	Research Methodology



Chapter IV	:	Presentation and Analysis of Data
Chapter V	:	Summary, Findings and Recommendation

**Chapter I:** Includes the introductory part of this study as already mentioned which describes the background, focus of the study, statement of the problem, objective of the study, significance of the study and organization of the study.

**Chapter II:** Describes theoretical analysis and brief review of related and pertinent literature available. It includes a discussion on the conceptual framework and review of the major studies.

**Chapter III:** Describes the research methodology enjoyed in this study. This describes the matter and sources of data, population and sample, mode of analysis, meaning and definition of statistical tools.

**Chapter IV:** Deals with the presentation and analysis of secondary data by using various analytical tools.

**Chapter V:** States summary, conclusions and major findings of this study.  
The Annexes and Bibliography are incorporated at the end of this study.

## **CHAPTER-II**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

In this section, the summary of major findings from reviewing the books, journals, magazines etc. related to the field of the study are presented. Research is a continuous process and hence the procedures and the findings may change due to continuous research. So, for getting the power or ability of analysis and interpretation of data a researcher must review the literature about his field of study. Then only, some new contributions can be made and some ideas can be received for development of a research design. So, the books and previous studies related to this field of study may provide the foundation for the study. By linking the present study with the past research studies, the continuity in research may be provided.

#### **2.2 Conceptual framework**

Various writers have defined the theoretical aspects of risk and return in various ways which are taken into consideration in this chapter and main focus has given to the implication of risk and return trade off in the investment on common stocks. The study deals with the theoretical aspects of common stock return on common stock, risk on common stock and their measurement models.

##### **2.2.1 Investment, return and risk**

Analysis of risk and return shows the relation or trade off between risk and return on any kind of investment. Investment is sacrificing of current funds for future cash inflows. The future cash inflows are the returns and the fear of not receiving the cash inflow (or not getting the return) is the risk.

"Investment in its broadest sense means the sacrifice of dollars for future dollars. Two different attributes are generally involved time and risk. The sacrifice takes place in present and is certain. The reward comes later if at all and the magnitude is generally uncertain". A wide range of investment alternatives is available to individual investors.

In addition to the traditional common stock, preferred stock and bond alternatives, other financial assets such as convertibles, warrants, rights, commodity futures and financial futures are also available for investing. Real assets such as real estate, precious metals and collectibles are also available for investing. Real investment and financial investment are two categories of investment. Real investment generally involves some kind of tangible assets such as land and building, plant and machinery etc. Financial investment involves contracts written on pieces of paper such as common stocks and bonds. In the primitive economics most investment is of the real variety, where as in a modern economy much investment is of the financial variety. Here, the focus has given on the term investment as sacrificing current funds on financial assets like shares, debentures, bonds, warrants, convertibles etc.

Return is the reward for waiting and risk bearing. Investors invest their funds in long term securities for the future returns for long run. So, return is the most important outcome from an investment. Return measures the investor's rate of wealth accumulation. Risk is the possibility of meeting danger or suffering harm or loss. Risk in terms of investment is unexpected outcome, which are harmful for the investors. Risk can also be defined as the chance that some unfavorable event will occur.

### **2.2.2 Common stock**

The research study is focused on the investment, return and risk on common stock so the discussion about common stock has made here. The common stock entitles its holders as an owner of the company. It has a residual claim, in the sense that creditors and preference shareholders can receive payment before common stock holders. "All the shares, with the exception of preference shares, are regarded as equity shares (common stocks)." The risk is the highest with common stock investment because in bankruptcy, common stock holders are, in principal, entitled to assets remaining after all prior claimants have been satisfied and any dividend can be received if there is residual profit. In Nepal, as per the provision of Nepal Company Act 2001, the par value of a share should be at least Rs. 50.

Common stocks have important investment characteristic and are important speculative characteristics. Their investment value and average market price tends to increase

regularly but persistently over the decades as their net worth builds through the reinvestment of undistributed earnings. But most of the time common stocks are subject to irrational and excessive price fluctuation in both directions, so most of the people speculate the common stocks.

### **2.2.3 Return on common stock**

Main purpose of investment on common stock is to get return from dividend and price appreciation of share and to get the control on the company. Return is the main target of investment. The return on common stock can be defined as the dividend yield plus the capital gain or loss. There are following types of returns calculated on common stock-

#### **2.2.3.1 Holding period return**

The holding period return refers to the return from holding an investment over some period as cash payment received due to ownership and the change in market price derived by the beginning price. If an investor purchase a stock of any company and holds it for certain period, he/she can get return in two ways-one is increase in the value of that stock as compared to initial one and another is direct cash payment. The increase in the value is capital appreciation and direct cash payment is dividend income. So, the one period return on common stock is given by-

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

Where,

$R$	=	Actual (or expected) return
$P_t$	=	Price at the end of a period t
$P_{t-1}$	=	Price at the beginning of a period t
$D_t$	=	Dividend at the end of period t

This formula can be used to determine both actual one period return when based on historical Diagrams and expected one period return when based on expected dividends and prices.

Holding period return mentioned above is useful with an investment horizon of one year or less. For longer periods, it is better to calculate rate of return as an investment yield. The yield calculated is present value based and considers the time value of money.

The annualized rate of return over several periods can be calculated in two ways. The first one is simply to take the arithmetic average of the annual holding period returns and the second method is the geometric mean return which also takes in the account the compound effect of cash receipts.

The simple arithmetic mean return,

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

The geometric mean return,  $\overline{HPR}_g = \prod_{t=1}^n (1 + HPR_t)^{1/n} - 1$

Where,

HPR	=	Holding Period Return
$\Sigma$	=	Sign of summation or total
$\prod$	=	Sign of product or multiplication
n	=	No. of Periods

The simple arithmetic mean return may produce the inherent bias so, the geometric mean return is the exact measurement of holding period return of various periods

### 2.2.3.2 Required rate of return

Required rate of return refers to the minimum return that an investor expects at least not to suffer from loss. It means if he/she (investor) gets the return below the required rate of return he/she suffers from loss. The required rate of return is the function of real rate of return and risk. Security market line (SML) gives the required rate of return as follows:

Where,

$R_j$  = Required rate of return on stock j

$R_f$  = Risk free rate of return

$R_m$  = Expected rate of return

$S_j$  = Beta coefficient of stock j

$$R_j = R_f + ( \bar{R}_m - R_f ) S_j$$

This formula can be used to calculate both the returns on individual investment and portfolio investment.

"While setting the required rate of return on an investment, an investor must consider the real rate of return, expected inflation and risk. Because consumption is forgone today, the investor is entitled to a rate of return that compensates for this deferred consumption. Since the investor expects to receive an increase in the real goods purchased later, and assuming for the moment, zero expected inflation and risk, the required rate could equal the real rate of return, in which case it would represent the pure time value of money. The capital markets determine this rate based upon the supply of money to be invested relative to the demand for borrowed money.

For example, if an investor plans to lend \$ 500 today in exchange for consumption at some later date (assuming no inflation and risk), then the lender may expect to receive \$515 at the expected time of consumption. The \$15 return on the investment of \$500 or three percentage represents the pure time value of money the real return paid to compensate the investor for deferred consumption"( Cheney and Moses; 1000:33).

### 2.2.3.3 Expected rate of return

The return that an investor expects from his investment in the forthcoming future is called expected rate of return. "The weighted average of possible returns, with the weights being the probabilities of occurrence is called expected return". The expected rate of return can be estimated by analyzing the trend of return of previous periods and by using probability distribution of returns. The ex-post returns can be averaged for calculating the future expected return and a probability distribution could be used to forecast the future rate of return. (Van Horn and Wachowicz; 2001:79) Using ex-post returns,

$$\text{Expected return } (\bar{R}) = \frac{\sum_{t=1}^n HPR_t}{n}$$

Using probability distribution,

$$\text{Expected return } (\bar{R}) = \sum_{i=1}^n R_i P_i$$

Where,

$R_i$  = The return for the  $i^{th}$  possibility

$P_i$  = The probability of that returns occurring

n = No. of possibilities

The expected rate of return is based upon the expected cash receipts over the holding period and the expected ending or selling price of stock. Depending upon the assumption made about the cash receipts in future and ending price, a no. of expected rates of returns can be formed. The possible rates of return estimated by the investors are summarized in an expected rate of return. The expected rate of return on an investment should be greater than required rate of return (i.e. the security should be under priced) for an acceptable and good investment.

#### **2.2.4 The risk on common stock**

Investment on common stock is a risky investment. So the uncertainties of return on common stock are the facts of life to the common stockholders. Many investors consider risk as a chance of occurring some unfavorable event of danger of losing some value. In financial management the uncertainty of cash flow is translated into a mathematical value. The uncertainty is translated into a mathematical value by calculating the expected value of all possible uncertain outcomes. The risk is measured using standard deviation on the expected value of uncertain outcomes. The risk is a complicated subject and needs to be properly analyzed. The risk return relationship is described by the investor's perceptions about risk and their demand for compensation. After making a concept about the adequate compensation for the assumption of risk, the investor will like to invest in risky assets such as common stocks. So, the risk return trade off is the main factor for the investor while investing on common stock.

Risk is the unlooked and unwanted event in the future; someone has said that risk was the sugar and salt of life. "Instead of measuring risk the probability of a number of

different possible outcomes, the measure of risk should somehow estimate the extent to which the actual outcome is likely to diverge from the expected outcome. Standard deviation is a measure that does this because it is an estimate of the likely divergence of actual return from an expected return" (Sharpe, Alexander and Bailey; 1998:151).

Investment risk is related to the probability of earning a return less than the expected return—the greater the chance of low or negative returns, the riskier the investment. However, we can define risk more precisely and it is useful to do so.

#### **2.2.4.1 The range**

Range is defined as the maximum value less the minimum value. The risk on return of common stock can be measured by range.

Range = Best possible rate of return - worst possible rate of return

The range (maximum return–minimum return) is known as one of the traditional ways of measuring risk. It simply shows the difference between the best possible return and the worst possible return but does not provide information about the distribution of the rates of return between the extremes.

#### **2.2.4.2 Standard deviation**

Standard deviation is a statistical measure of the variability of a distribution around its mean. The standard deviation is the measurement of risk of the deviation of returns from their mean value. The main advantage of standard deviation is that the uncertainties of the returns can be summarized into a single, easily calculated number. On the other hand, the main disadvantage of standard deviation is that it considers possible return above the expected value to be as risky as returns below the expected value. The greater the standard deviation, the greater the risk of the investment. (Van Horn and Wachowicz; 2001:81)

Probability distribution is a set of possible values that a random variable can assume and their associated probabilities of occurrence". Normally, the width of the probability distribution indicates the amount of scatterness or variability of the possible event. The tighter the probability distribution of the expected returns, the less is the variability of



returns thus the small risk associated with the investment will occur. The risk or standard deviation is denoted by ( $\dagger$ ) which is given by-

$$\dagger = \sqrt{\sum_{j=1}^n (R_j - \bar{R}_j)^2 P_j}$$

Where,

$\bar{R}_j$  = Expected rate of return

$P_j$  = Probability of occurrence of expected return

$\dagger$  = Standard deviation of returns

$R_j$  = Return for  $j^{\text{th}}$  possibility

For the historical return the standard deviation is calculated by simply taking the deviation of returns from the mean return of the ex-post returns as-

$$\dagger = \sqrt{\frac{\sum_{j=1}^n (R_j - \bar{R}_j)^2}{n - 1}}$$

Where,

n = no. of historical returns

In summary, standard deviation is the weighted average deviation from the expected value and it gives an idea of how far above or below expected value and the actual value likely to be. (Van Horn and Wachowicz; 2001:87) It is the statistical tool for measuring risk which contains both systematic and unsystematic risk.

#### **2.2.4.3 Coefficient of variation (C.V.)**

The standard deviation is absolute measurement of risk. The coefficient of variation gives the relative measurement of risk. Coefficient of variation is defined as the risk per unit of return.

A standard deviation can sometimes be misleading in comparing the risk or uncertainty surrounding alternatives of they differ in size. To adjust for the size or scale, problem,

the standard deviation can be divided by the expected return to compute the coefficient of variation (C.V.).

$$C.V. = \frac{\sigma}{R}$$

Thus, the coefficient of variation is a measure of relative dispersion (risk)-a measure of risk per unit of expected return. The larger the C. V. the larger the relative risk of the investment” (Van Horne and Wachowicz; 1998:97).

### **2.2.5 Portfolio**

Portfolio is the best way of investment for rational investors. A combination of two or more securities or assets is called portfolio, i.e. investment on two or more than two assets is called portfolio. Portfolio theory gives the concept of investment in very good ways that “never keep all the eggs in a single basket”, i.e. the entire amount should not be invested into a single asset. By investing in a portfolio, diversification of risk is possible. Portfolio management is related to the formation of efficient portfolio for investment in financial assets. There are basically two objectives of portfolio-primary objective and secondary objective. Primary objective includes minimization of risk and maximization of return. Secondary objectives include regular return, stable income, and safety of investment, tax benefit and appreciation of capital.

In 1951 A. D. Professor Harry M. Markowitz proposed the concept of the portfolio theory. He gave a new concept of investment on more than single assets to minimize risk and maximize return which is based on the following assumptions:-

- 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 or portfolio is based on the variability of returns (i.e. S.D or variance).
- Investors adhere to the dominance principal i.e. for given levels of risk investors prefer assets with a lower expected return. For assets with the same expected return, investors prefer lower to higher risk

### 2.2.5.1 Return on a portfolio

The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The weights are the proportions of total funds invested in each security and the sum of weights equal to 100%. The formula for calculating the return on portfolio is-

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

Where,

$W_j$  = Proportion or weight of total funds invested in security j

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

n = Total no. of different securities in the portfolio

By investing in a portfolio the investor can earn the average return of the securities comprising that portfolio and he also assumes the minimum risk on such portfolio. (Van Horn and Wachowicz; 2001:102)

### 2.2.5.2 Risk on a portfolio

Risk of a portfolio is not the weighted average of the standard deviations of specific securities comprising that portfolio. It rather depends upon the co-movement (interactive risk) among the security as well. This interactive risk is measured by covariance, which is absolute measurement, and by correlation, which is relative measurement. The correlation is the statistical measure of degree to which two variables such as securities returns move together.

Mathematically-

$$COV_{ij} = \sigma_i \sigma_j \dots_{ij}$$

Therefore,

$$\dots_{ij} = \frac{COV_{ij}}{\sigma_i \sigma_j}$$

Where,

$\sigma_j$  = S. D. of the security j

$\sigma_k$  = S. D. of the security k

$COV_{j,k}$  = Covariance between the possible return of security j and k

The covariance of the possible returns of two securities is a measure of the extent to which they are expected to vary together rather than independently of each other. The covariance in the above formula can be written as-

$$COV_{ik} = \sigma_i \sigma_k \rho_{j,k}$$

Where,

$\rho_{j,k}$  = The correlation coefficient between possible returns for security j and k

$\sigma_j$  = S. D. of the security j

$\sigma_k$  = S. D. of the security k

The correlation coefficient, which is significant in portfolio construction, is standardized statistical measure of the linear relationship between two variables. It ranges from -1 to +1 i.e. perfect negative correlation to perfect positive correlation. The risk can be diversified if the correlation between securities is negative. (Van Horn and Wachowicz; 2001:107)

### 2.2.5.3 Markowitz efficient frontier

Efficient Frontier is the combination of all possible portfolios called the attainable set of investment opportunities. It is the locus of investment graphed in risk return space which has the maximum expected rate of return in their risk class or the minimum risk at whatever rate of return is selected. According to Markowitz, an investor should seek a portfolio of securities that lies on the efficient frontier set.

“A Portfolio is not efficient if there is another portfolio with a higher expected return and the same standard deviation. If your portfolio is not efficient you can increase the expected return without increasing the risk, decrease the risk without decreasing the expected return or some combination of increased expected return and decreasing the risk by switching to a portfolio on the efficient frontier”(Van Horne; 1997:103).

### 2.2.6 Systematic and unsystematic risk

Any type of business, whether it is large or small suffers risks because investment is a part of economics and the economical cycle changes frequently. When the market is bullish there is low risk and when it starts declining i.e. bearish there may be high risk. The total risk associated with the investment can be classified as systematic risk and unsystematic risk. Systematic risk is that type of risk, which affect the overall market. This risk is also called non- diversifiable or unavoidable risk and arises due to the changes in the economic state or change made by government in fiscal and monetary policies. Changes in the interest rate policy by government, increase in corporate tax rate, increase in inflation rate etc. are the example of systematic risk. This risk can not be diversified even an efficient portfolio is formed; hence it is called non diversifiable risk. Unsystematic risk is also called diversifiable or avoidable risk because if an efficient portfolio is formed, the unsystematic risk can totally be diversified. Such types of risk arises due to various unsystematic factors such as loss on big contract, strike and lock up by labors, entry of strong competitor in the market etc. This risk is independent of economic, political and other factors that affect the securities in a systematic manner. These types of risks are normally minor and so can be handled by the management.

Investors can expect to be compensated for bearing the systematic risk. They should not expect the market to provide any extra compensation for bearing avoidable risk or unsystematic risk. The relationship among systematic and unsystematic risk is-

$$\text{Total risk } (\sigma_j^2) = \text{Systematic risk (Variance)} + \text{Unsystematic risk (Variance)}$$

Where,

$$\text{Systematic Variance} = \sigma_j^2 \dots \sigma_{jm} \quad \text{Systematic Risk } (\sigma_j) = \sigma_j \rho_{jm}$$

$$\text{And unsystematic Variance} = \sigma_j^2 (1 - \dots \sigma_{jm}^2) \quad \text{Unsystematic Risk} = \sigma_j \sqrt{1 - \rho_{jm}^2}$$

So,

$$\sigma_j^2 = \sigma_j^2 \dots \sigma_{jm}^2 + \sigma_j^2 (1 - \dots \sigma_{jm}^2)$$

### 2.2.7 Capital assets pricing model (CAPM)

“CAPM is a model describing the relationship between risk and expected (required) return at which a security’s expected (required) return is the risk free rate plus a premium based on the systematic risk of the security”(Van Horne and Wachowicz,2001:103). It is a very simple model and extremely important analytical tool in both managerial finance and investment analysis.

“In fact, the Nobel Prize was awarded to the developers of the CAPM, Professors Harry Markowitz and Sharpe, in part because of their work in this area”. CAPM describes that the return of any security is the total of risk free rate and premium for the risk which is systematic. The equation of CAPM is-

$$E(R_j) = R_f + [E(R_m) - R_f] S_j$$

Where,

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

$E(R_m)$  = The expected rate of return on market portfolio

$R_f$  = Risk free rate of return

$S_j$  = Beta coefficient of stock j

### 2.2.8 Beta

Beta is the measure of percentage change in security return as a result of one percentage change in excess market return. It is an index of systematic risk measuring the sensitivity of a stock’s returns to changes in returns on the market portfolio.

The Beta of asset j is its systematic risk ( $COV_{j,m} / \sigma_m^2$ ) expressed in units of market risk ( $\sigma_m^2$ ). Thus, beta is not a measure of the systematic risk of a security or a portfolio; it is more like an index of systematic risk. The only difference in Beta measurement and systematic risk measurement is the divisor  $\sigma_m^2$ . The Beta of a portfolio is simply a weighted average of the individual stock betas in the portfolio.

### **2.2.9 Security market line (SML)**

Security market line is the graphical representation of the CAPM. It shows the relationship between risk and required rate of return. With the help of SML the over priced and under priced stocks can be located. “SML is the line that shows the relationship between risk as measured by beta and the required rate of return for individual securities” (Weston and Brigham; 1998:108). The SML clearly shows that returns are the increasing function, in fact a linearly increasing function of risk. The line shows that if risk increases the return should also increase proportionally. The risk affecting the return is the market risk. The SLM describes that the investor can not get the compensation for unsystematic risk, the systematic risk is only compensated representing by beta of the security. If the stocks are under priced, they lie above the SML and if they are over priced, they lie below the SML. If the expected return of the stock is more than required rate of return, the stock is called under priced and if the expected return of stock is less than required rate of return, the stock is called overpriced.

### **2.3 Review from related studies**

This topic is again sub-divided into three parts the review from journals, master degree thesis and other independent studies related to this topic “risk and return”.

#### **2.3.1 Review of journals and Articles**

There are very few research based journals in the field of finance in Nepalese context. Almost no articles about the risk and return analysis on common stock investment can be found. So here the foreign published journal of finance related to this topic has been reviewed. This study also helps to build the theoretical framework on this topic.

Rouwenhorust (1999), Published an article entitled “Local Returns Factors and Turnover in Emerging Stock Markets published in the journal of finance by American Finance Association has been reviewed here. “There is growing empirical evidence that multiple factors are cross-sectionally correlated with average returns than large stocks Bang (1981). Fama Frence (1991/1996) and Lakosnishock, Shleifer an Vishny (1994) show that value/stocks with book to market (B/M), earning to price (E/P), and cash flow to Price (C/P) out perform growth stocks with low B/M, E/P or C/P. Moreover, stock with high return over the past three months to one year continue to out perform stocks with

poor prior performance (Jagadees and Titman 1993). The evidence that beta is also compensated for in average returns is weaker (Fama and French 1991), Kothari, Shaken and Stone (1995). The interpretation of the evidence is strongly debated. Some believe that the premiums are a compensation for pervasive risk factors; others attribute them to firm characteristics or inefficiency in the way market incorporate information into prices. Yet others argue that survivorship or data snooping may bias the premiums.

This paper examines the sources of return variation in emerging stock markets. From the perspective of collecting independent samples; emerging market countries are particularly interesting because of their relative isolation from the capital markets of other countries. Compared to developed markets, the correlation between most emerging markets and stocks markets has historically been low and until recently many emerging countries restricted investment by foreign investors. Interestingly Bekaert and Harvey (1995) find that despite the recent trend toward abolition of these restrictions and the substantial inflows of foreign capital markets have actually become more segmented from world capital of emerging economics are held by local investors who are likely to evaluate their portfolios in light of local market condition (Rouwenhorst; 1999:1439-40).

The above description Rouwenhorst tries to answer the two set of questions.

"The first set of three questions concern the existence of expected return premiums; (I) Do the factors that explain expected return differences in developed equity markets also describe the cross section of expected returns of emerging market firms? (ii) Are the returns factors in emerging market primarily local or they have global components as well? (iii) How does the emerging market evidence contribute to the international evidence from developed markets that similar return factors are present in markets around the world?

The second sets of questions of the paper include- (I) is there a cross sectional relation between liquidity and average returns in emerging markets? (ii) Are the return factors in emerging markets crosssectionally correlated with liquidity?



About the data Rouwenhorst stated that: as of April 1997 the emerging market Databasarke (EMDB) of the IFC contains data on more than 1100 firms from 31 emerging markets but not all are included in the sample. Eleven countries are excluded because of insufficient return histories, which leave 1705 firms in the 10 countries that the IFC tracks for at least seven years. For some firm's monthly closing process and dividends are available dating back to 1975. Starting at various points during 1980s the IFC expanded its reporting to include monthly time series for price-to-book ratios, price earning ratios, market capitalization, trading volume and the number of days per month that a stock is traded. Total return is calculated as the sum of the dividend return and price appreciation, using prices scaled by a capital adjustment factor, which the IFC computes to correct for the effects associated with stock dividends and right issues. Many emerging markets have firm with multiple classes of shares carrying different ownership restrictions. Firms with multiple share classes are treated as a value weighted portfolio of the outstanding equity securities”

“The first conclusion is that the return factors in emerging markets are qualitatively similar to those in developed markets. Small stocks out perform growth stocks and emerging markets stocks exhibit momentum. There is no evidence that local markets betas are associated with average returns. The correlation between the country return factors suggest that the premiums have a strong local character. Furthermore global exposure can not explain the average factor returns of emerging markets. There is little evidence that the correlation between the local factor portfolios have increase, which suggests that the factors responsible for the increase of emerging market country correlation are separate from those that drive the difference between expected returns within these markets. A Bayesian analysis of premiums in developed and emerging markets show that unless one has strong prior beliefs to the country, the empirical evidence favors the hypothesis that size, momentum and value strategies are compensated for in expected returns around the world. Finally, the paper documents the relationship between expected returns and share turnover examines the turnover characteristics of local returns factor portfolios. There is no evidence of a relation between expected returns and turnover in emerging markets. However, beta, size momentum and value are positively cross- sectional correlated with turnover in emerging

markets. This suggests that the return premiums do not simply reflect a compensation for liquidity”.

This study has been analyzed the return factors in worldwide stocks and does not consider the analysis of single security. However, it concentrates in the various emerging stocks markets. Hence, this article contributes in the area of risk and return analysis in common stock investment.

### **2.3.2 Review of other Independent Studies**

In Nepalese context, very few independent studies can be found in the topics of finance. But there are some independent studies about Nepalese stock markets are reviewed here.

Pradhan (1993) carried out a study entitled “*Stock Market Behavior on Small Capital Market: A case study in Nepal*” This study was based on data collected for seventeen enterprises from 1986 to 1990.

#### **Objectives:**

- To assess the stock market behavior of Nepal
- To assess the portfolio performance on the basis of risk and return analysis
- To evaluate the portfolio performance

#### **Analysis:**

Pradhan analyzed his research on the basis of risk and return (portfolio risk and portfolio return) of the sample banks and financial institutions. Besides, financial tools he has also used statistical tools as like correlation coefficient and coefficient of multiple determinations to accomplish the study.

#### **Findings:**

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

Poudel (2001) conducted a research in the topic “*Investing in Shares of Return and Risk Elements*” which was based on the data collected from eight banks from mid July of 2001. The objectives, analysis and findings of his study are presented respectively below.

**Objectives:**

- to determine whether the shares of commercial banks in Nepal are over or under priced by analyzing risk and return characteristics of the individual shares.
- to assess the portfolio performance on the basis of sample commercial banks.

**Analysis:**

Poudel has analyzed the data collected on the basis of both the statistical and financial tools. The data of his study were covered for 5 years and the study was based on the data of eight commercial banks. The sample banks were chosen from both the private sector and public sectors.

**Findings:**

- Most of the individual share’s appeared to be defensive as beta coefficients were less than one. Low beta shares were less volatile than the market as a whole. Only the return of shares of bank of Kathmandu had beta coefficient of greater than one, indicating that the share was more risky than the market.
- Nabil Bank Ltd., Nepal Investment Bank Ltd., Himalayan Bank Ltd., had higher expected equilibrium return than expected rate of return. And Standard Charter Bank Nepal Ltd., Nepal SBI Bank Ltd., Nepal Bangladesh Bank Ltd., Bank of Kathmandu had lower equilibrium return than expected rate of return.
- From this study we get Nabil Bank Ltd., Nepal Investment Bank Ltd. and Himalayan Bank Ltd. were over priced and others were under priced.

Ghimire (2001), “*Nepalese share market on investor’s prospective*” published in the “New Business Age” in June 2001 is reviewed here. In this study, he has concluded that the Nepalese share prices are decreasing because of many more unbalanced factors. He has given realistic logic about Nepalese market as mentioned below.

**Objectives:**

- To find out the major reason behind the movement in market index
- To justify the price change in stocks
- To assess the performance of regulatory bodies as like SEBON

**Analysis:**

Ghimire in his study analyzed the relevant data in a broad way. The summary of his analysis is - “Currently share price are on the declining phase. On 3<sup>rd</sup> March 1999 NEPSE index was 178.81 (base Feb. 1994=100). It was the highest on December 2000 at 545.15 and then within five months, on May 17, 2001 it plunged to 334.19. The major reason behind the movement in the index is the domination of banking sector scrip in Nepali stock exchange’s transaction. The price changes in bank shares have mostly no justification. When they increased, it was after declaration of bonus, dividend or interim dividend or after the receipt of bonus share and dividend and when they decreased; it has before the receipt of bonus share and dividend, i.e. after the confirmation that return is imminent.

The components in the market is Nepal Stock Exchange Ltd. the primary requirement now is to privatize this institution immediately to sustain the interest of the public in capital market and for its healthy growth. Its work is primitive.

Weak practices are seen in its management. It seems to be without any regulatory functions when judged by its dealing towards listed companies. Even the share registrar and market maker (NIDC Capital Market) have not held its AGM for fiscal year 1999/1000. Still, the board has not been able to take any action. There are no set rules (or they are not implemented) for transaction processing and certificate delivery. It could take months for the certificate to arrive from the companies. These mismanagement practices can not help the growth of a share market.

### **Findings:**

- The broker organizations are real private, and run a one-man show. Most of them do not have real education and knowledge about the market. They do not have analysts to make suggestions to the investors.
- The general public has invested recklessly. They just believe what one broker or the investor says about scrip. They must study (be informed) about the company before making the investment.
- One of the prime motives for the investment is to earn return on it. Capital market is a long-term concept. The investment on secure and good company does yield good returns in the long run.

### **2.3.3 Review of Thesis**

There are some studies related to the topic “Risk and Return” had been conducted as a thesis for the partial fulfillment of Master’s degree in T. U., which are reviewed here. There are some studies related to this topic such as the study conducted by Bhatta (1995) conducted research in the topic of,” *Assessment of the Performance of Listed Companies in Nepal*”, by Sapkota (2000), conducted research in the topic of “*Risk and Return Analysis in Common Stock Investment*”, by Neupane (2003), conducted research in the topic of “*Risk and Return Analysis with reference to listed Commercial Banks*” are reviewed here.

Bhatta (1995) conducted a research in the topic of “*To Analyze the Performance of Listed Companies in Terms of Risk and Return*”. From the study, Bhatta addressed the performance of listed commercial banks in relation with their market price per share. The major findings were sought with the help of risk return analysis of different common stocks.

### **Objectives:**

- To analyze the performance of listed commercial banks with relation to their MPS
- To assess the efficiency of Nepalese capital market
- To calculate the diversifiable and non diversifiable risk level of the sample portfolio

- To find out the trend of Nepalese capital market.

### **Analysis:**

A highly significant positive correlation has been addressed between risk and return character of the company. Investors generally accept higher return from those stocks, which associated higher risk. Nepalese capital market is not efficient one so the stock price does not contain all the information related to the market and company. Neither investor analyzes the overall relevant information relating to the market and company itself, nor does the member of the stock exchange try to disseminate the information. So, the market return and risk both may not represent reality.

Investors in Nepal have not yet practiced to invest in portfolio of securities. An analysis of the two securities portfolio shows that the risk can be totally minimized if the correlation is perfectly negative. In this situation, the risk can totally be diversified, but when there is perfectly positive correlation between the return of the two securities, the risk is undiversifiable. The analysis shows some has negative correlation and some has positive. Negative correlation between security return is preferred for diversification of risk”.

### **Findings:**

- Analysis of risk and return shows that many companies have higher unsystematic or specific risk.
- There is a need of expert institution, which will provide consultancy service to the investors to maximize their wealth through rational investment decision.
- There is a need of development of institutions to consult investors for risk minimization.
- There is a need of establishing an information channel in Nepal stock exchange
- Proper amendment of trading rules should be made.

Baral (1997) in his study on “*Dynamics of Stock Market in Nepal in Relation with the Risk and Return*” analyzed the market prices of the shares of 10 companies four from

manufacturing sector, one from hotel sector, two from trading sector, three from finance sector, and four from banking sector for his study.

### **Objectives:**

- To analyze the trend of the market and market price of the listed companies whether they are correctly priced or not
- To diagnose and compare the sector-wise financial status of the stocks in Nepalese stock market and
- To find out the impact of the secondary market on primary market and vice versa.

### **Analysis:**

Baral in his study said that the variation in the data was also found when comparing with different sources. He primarily based his study on secondary data and did not use any of the primary data collection tools. He tremendously used different ratios to calculate the financial status of the companies under study. Furthermore, the banking sector has attracted the maximum number of investors as observed in the over-subscription of the public issue by 12 times followed by three times subscription in the finance and insurance, 2.47 times in the trading and 0.87 times in the manufacturing sector. He further stated the following points in his findings:

### **Findings:**

- The liquidity in Nepalese stock market is very poor and the trading of only about fifty percent of the listed stocks takes place in the stock exchange when the market is in boom.
- The trading of the stocks in terms of number of transactions, number of shares traded and value of shares traded is very low.
- The supply of funds was nearly three times the demand for funds in primary aspect of Nepalese stock market during the census period as the investors are interested to invest in the shares of corporate sector through the stock market.
- The EPS and ROE have the decisive effect on the market price of stock. EPS, DPS and net worth per share have lagged effect on the market price of stock and high volatility of stock price implies that there is high risk associated with the investment in shares of stock listed in NEPSE.

- The extremely small size of the stock market has the implication of low liquidity of shares.

Khatiwada (2000) in his study on “A study of Impact on Dividend and Earning Announcement on Shareholders Return and Stock Price in Nepal” tried to find out the impact of earning and dividend announcement on shareholders return and price of stock.

**Objectives:**

- To evaluate the performance of alpha, which indicates whether the securities are overvalued or appropriately valued.
- To find out the impact of earning and dividend announcement on shareholders return and price of stock.

**Analysis:**

Khatiwada had taken only 5 listed banks for the study. As obvious from the title itself, the questionnaire, interview and other primary data acquiring techniques are regarded to be necessary to test the level of investor’s awareness towards the impact related to the earning and dividend announcement. But, he did not use any of them and totally based his research on secondary data. So, the dependence merely on the secondary data is regarded as one of many drawbacks of his study.

**Findings:**

- Among the five commercial banks under study, four banks had positive beta and one had negative beta. It indicated that the price of the banking sector was under priced at most (i.e. four under priced and one over priced).
- The announcement of dividend did not affect on the price of stocks in Nepal, which could not be approved by theories.
- Dividend announcement had not any impact on stock price in general which does not seem easy enough to trust. So, it requires further depth research in this area.



Sapkota (2000) conducted a research on “*Risk and Return Analysis in Common Stock Investment*” includes eight commercial banks and is a very closely related study to this study.

### **Objectives:**

- The main objective of the study was to analyze the risk and return of the common stocks in Nepalese stock market.
- To evaluate the performance of Nepalese capital market.
- To assess the rationality between individual and institutional investors.

### **Analysis:**

In his 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”.

### **Findings:**

- Stocks market investment is a risky job. Although there is a chance of more return than that of expected, there is also a chance of heavy loss. So, it should really only investment money in the stocks market that it need not for other communities. The stock market is undoubtedly risk in the short term and investor needs to be prepared for it.

- Private investors should try and work out their attitude towards the risk of various investment strategies.
- Investors need to diversify their funds to reduce risk. Proper construction of portfolio never takes any considerable loss.
- HMG needs to manage the trading of government securities in NEPSE in spite of Nepal Rastra Bank (NRB). Government securities are assumed as risk free security and trading of these securities at the same place 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.
- Government needs amendment of rules and regulations regarding stock market in time to time. Without implementation of rules and regulations, it is meaning less to do anything. There are serious problems in implementation. Hence, HMG needs to monitor to make active to all the components of stocks as well as capital market properly.

Neupane (2003) conducted a research in the topic “*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 banks in account with an objective to assess the performance evaluation of the listed commercial banks on the basis of risk and return analysis.

**Objectives:**

- To assess the performance evaluation of the listed commercial banks on the basis of risk and return analysis.
- To calculate the risk variability of returns
- To study the trading rules and regulations of NEPSE

**Analysis:**

“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. 118.60%), which is very high rate of return. In reality this rate exists only due to the effect of unrealistic annual return because of the issue of bonus share and increase in share price. Similarly expected return of the C. S. of Himalayan Bank Ltd. is found minimum (i.e. 18.94%)”.

About the risk he 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 least 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”.

### **Findings:**

- NEPSE needs to initiate to develop different programs for private investors such as investor’s meetings and seminars in different subject matters like ”Trading Rules and Regulations” etc. On the other hand, NEPSE is following “Open Cry System” of trading even in the age of digital technology. It should be modernized. It needs to develop efficient and effective information channel and to provide up to date data.
- Government needs to amend the rules and a regulation regarding stock 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 assets and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.

### **Research Gap**

There have been several researches done before in stock market. All of those researches have useful findings and their own limitations. Bhatta conducted a study in 1995 in share price behavior based on listed companies taken five sample stocks. The time period was only eight months from the beginning day of organized stock market for eight months period. Now it is out of date. Till date market has experienced many ups and downs. Likewise, Shrestha in 1999 carried out a study based on the data of randomly selected thirty stocks out of all listed securities mostly started from the commencing day of organized trading system on NEPSE. His study covers the period from 13<sup>th</sup> January 1994 to Mid July 1998. However, his study implies technical concept but no emphasis has been

given on fundamentalism. His study remains silent to say whether the trading with the help of past information could earn profit in both bull and bear market. Likewise, Poudel has carried out another study in share price behaviour in 2001. Though his study attempted to cover the limitations of previous studies but yet it is not enough to say is it either DPS or EPS to influence market price of stocks i.e. which of the variables (DPS and EPS) has more effect on share prices. EPS and DPS hit the physiology of investors in greater extent and hence they are the most important factors so as to attract public interests. Shrestha conducted another study on “Role of SMC in Economic Development of Nepal” in 1981. He arrives at the conclusion that the performance of existing companies is not satisfactory; thus, the potential investors are not willing to invest in the present securities. Again, he failed to highlight the problems of the research work. The current study is a supplement to overcome the weakness and limitations of previous studies.

These researches are helpful in different areas. The findings of pervious researches are equally important. The main focus of the research is to analyze the performance, growth and downfalls of the stock market. This will help to analyze whether the stock market is in increasing trend or in decreasing trend. By analyzing these aspects, one can focus on the weakness. So that, in future these weaknesses can be turned into strength of the stock market. This will help to make the existence of the stock market more robust. Furthermore, by being able to point out the weakness; more investors can be made to contribute for the growth of stock market.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

#### **3. Introduction**

Research Methodology is a systematic way to solve the research problem. Research methodology describes the methods and process applied in the entire aspect of the study. It includes all the procedures from theoretical foundation to the collection and analysis of data. “Research methodology refers to the various sequential step (along with a rationale of each step) to be adopted by a researcher in studying a problem with certain objects in view” (Kothari; 1994:26).

Research methodology is composed of both parts of technical aspect and logical aspect on the basis of historical data. Research is a systematic and organizational effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well thought out activities of gathering, recording, analyzing and interpreting of the data with the purpose of finding answer to the problem. In this study all the data are secondary and these data are analyzed using appropriate statistical and financial tools. In this chapter, a focus is given to research design, sample selection and size, data collection procedure, data processing, definition of variables, meaning and definition of statistical tools used.

#### **3.1 Research design**

In this study, the research is based on the recent historical data, so simply it is a historical research and covers the data from the fiscal year 2002/03 to 2006/07 A. D. The analytical as well as descriptive research designs have, therefore, been included in this study. For analytical purpose the annual reports and financial statements of related commercial banks are collected. But this study is more analytical and empirical and less descriptive.

#### **3.2 Population and sample**

All the one hundred and forty seven in NEPSE is the total population for this study. But this study is concentrated in listed commercial banks only. The no. of listed commercial

banks is seventeen. The total no. of samples is taken only six listed commercial banks for this study.

### **3.3 Sources of data**

This study is mainly based on secondary data. But while studying individual investors' opinion, bank official's suggestions and opinions from staffs of Nepal Stock Exchange Ltd. are also taken into consideration. Data related to the market prices of stock market capitalization, movement of NEPSE index etc. has taken from related web sites of NEPSE. Financial reports of commercial banks are also collected. Besides, the secondary data have been acquired from various other sources like:-

- Annual reports of concerned commercial banks
- Trading reports published by Nepal Stock Exchange Limited.
- Materials published in papers and magazines.
- Related web sites
- other related books and booklets

### **3.4 Data collection techniques**

The relevant data have been collected from the Nepal Stock Exchange Limited and concerned banks chosen as sample for this study. Similarly the required data have also been collected from Central Library, Kirtipur, Kathmandu, Shankar Dev Campus Library, Kathmandu and Internet search. Apart from this, informal interviews are conducted with staffs of Nepal Stock Exchange Limited to generate primary data.

### **3.5 Data analysis tools**

A brief explanation of the terms and tools of analysis used in this study are as follows:

#### **3.5.1 Dividend (D)**

Dividend is the reward for waiting to the investors. Dividend constitutes the main part of return from common stock investment. Dividends are of two types-cash dividend and stock dividend. If only cash dividends are paid there will be no problem but if stock dividend is also paid there will be problem in calculation of total gain to the

stockholders. If stock dividend is also paid, stockholders get extra numbers of shares as dividend and simultaneously price of the stock declines due to increased no. of stocks. To get the real amount of dividend there are no any model or formula. So the model has been developed considering practical as well as theoretical aspect after several discussions with NEPSE staffs and investors.

The model is –

$$\text{Total dividend amount} = \text{Cash dividend} + \text{Stock dividend \% X next year's MPS}$$

Where,

$$\text{MPS} = \text{Market price per share}$$

### 3.5.2 Stock price (P)

Market price of stock is also the major part of return. NEPSE index shows the three types of prices-high, low and closing. Among them the closing price of each year has been taken as the stock price. So, the study has focused in an annual basis.

### 3.5.3 Holding period return on common stock investment (R)

Holding Period return is the combination of Dividend income and change in market price of stock expressed as a percentage of the beginning market price of the stock. (Van Horn and Wachowicz; 2001:77)

Mathematically,

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

Where,

R = Holding period rate of return on common stock

$D_t$  = Cash dividend received at the end of period t

$P_t$  = Ending prices of stock

$P_{t-1}$  = Beginning prices of stock

### 3.5.4 Expected rate of return on common stock ( $\bar{R}_j$ )

Expected rate of return is the average rate of return on common stock. It is calculated by the arithmetic mean of historical returns or from probability distributions. (Van Horn and Wachowicz; 2001:82)

Mathematically,

If historical returns are taken-

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

If probability distribution is taken-

$$\bar{R}_j = E(R_j) = \sum R_j P_i$$

Where,

$$\bar{R}_j = E(R_j) = \text{Expected rate of return on stock } j$$

n = no. of years that the return is taken

$R_j$  = Return on

$P_i$  = Probability of returns

### 3.5.5 Standard deviation (S.D)

Standard deviation is the measurement of dispersion of variables around the mean value. It is a statistical measure of the variability of a distribution of returns around its mean. It is the square root of the deviations of the returns. S. D. is the standard average scatterness of returns from mean return. S. D. is the measurement of total risk in financial management. (Van Horn and Wachowicz; 2001:83) Total risk refers to the deviation of returns from expected return of investment. S. D. is calculated as follows:

When historical data is used-

$$t_j = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n-1}}$$

When probability distribution is used-



$$\dagger_j = \sqrt{\sum_{j=1}^n (R_j - \bar{R}_j)^2 P_i}$$

Where,

$P_i$  = Probability of returns

$R_j$  = Return on stock j

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

### 3.5.6 Coefficient of variation (C.V.)

“The coefficient of variation is the relative measure of dispersion, comparable across distribution, which is defined as the ratio of standard deviation to the mean expressed in percentage” (Levin R. I. and Rubin, 1994:126). It gives the risk per unit of the expected return and gives the result regarding the unit of risk to bear for earning one unit of return. It is calculated as follows:

$$C.V._j = \frac{\dagger_j}{R_j}$$

Where,

$C.V._j$  = Coefficient of variation of stock j

### 3.5.7 Beta coefficient (S)

The sensitivity of stock in the market is explained by beta coefficient. Beta is an index of systematic risk which measures the sensitivity of a stock's returns to changes in returns on the market portfolio. (Van Horn and Wachowicz; 2001:87) Ratio of systematic risk of an individual security to the risk of market portfolio is called beta. The formula for calculation of beta is given by,

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

Where,

$S_j$  = Beta coefficient of stock j

$COV(R_j, R_m)$  = Covariance between returns on stock j and

return of market

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

$\sigma_m^2 =$  Variance of market return

Beta of stock j is its systematic risk i.e.  $COV(R_j, R_m) / \sigma_m^2$  expressed in units of market risk ( $\sigma_m^2$ ). Thus, beta is not a measure of the systematic risk of a security or portfolio; it is more like an index of systematic risk. The only difference in Beta measurement and systematic risk measurement is the divisor  $\sigma_m^2$ .

Beta coefficient may be used for ranking the systematic risk of different assets. If the beta is larger than one,  $\beta > 1$ , the asset is more volatile than the market and is called an aggressive asset. If the beta is less than one,  $\beta < 1$ , the asset is a defensive asset; its price fluctuations are less volatile than the market's. Beta coefficient of market is always equal to one.

### 3.5.8 Correlation coefficient ( $\rho_{ij}$ )

The correlation coefficient measures the direction of relationship between two sets of Diagrams. (Van Horn and Wachowicz; 2001:93) Correlation is the relative measurement of co-movement of the returns of two stocks. Correlation coefficient and covariance are related by the following equation.

$$COV_{ij} = \sigma_i \sigma_j \rho_{ij}$$

Therefore,

$$\rho_{ij} = \frac{COV_{ij}}{\sigma_i \sigma_j}$$

Where,  $\sigma_i$  and  $\sigma_j$  are the standard deviations of returns for asset i and j and  $\rho_{ij}$  is the correlation coefficient for asset i and j.

There are following cases of correlation and risk conditions-

### **1. Perfectly Positive Correlation ( $\rho_{ij} = +1$ )**

Returns on two perfectly positive correlated stocks would move up same direction so risk can not be diversified away by investing in such assets in portfolio. Portfolio of such stocks would be exactly as risky as the individual stocks.

### **2. Perfectly Negative Correlation ( $\rho_{ij} = -1$ )**

Returns on two perfectly negative correlated stocks would move up exactly opposite direction so risk can be completely eliminated by holding such stocks in portfolio. But perfectly negative correlated stock can not be found in the real world.

### **3. No relation between returns ( $\rho_{ij} = 0$ )**

When the correlation between two stocks is exactly zero there is no relationship between the returns of the two stocks. In such case some risk can be reduced.

### **4. Intermediate risk ( $\rho_{ij} = +0.5$ )**

Most of the stock returns are positively correlated but are not perfectly correlated. On average the returns on two stocks would lie on the range of +0.4 and +0.75. Under such conditions the portfolio of stocks reduces risk but not eliminate it completely.

## **3.5.9 Portfolio risks and returns**

A portfolio is the combination of two or more securities or assets. It is an investment in a combination of various types of assets. Portfolio investment means spreading the invest able amount in various types of securities rather than concentrating in one.

### **3.5.9.1 Portfolio return**

The expected rate of return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. (Van Horn and Wachowicz; 2001:103)  
The weights are the proportions of total funds invested in each security and the sum of weights equal to 100%. The return on the portfolio in case of only two assets portfolio is given by-

$$\bar{R}_P = W_A R_A + W_B R_B$$

Where,

$\bar{R}_P$  = Expected returns on portfolio of stock A and stock B

$W_A$  = Weight of investment on stock A

$W_B$  = Weight of investment on stock B

$W_A + W_B = 1$  Or 100 %

### 3.5.9.2 Portfolio risk

Risk of a portfolio is not the weighted average of the standard deviations of specific securities comprising that portfolio. It rather depends upon the co-movement (interactive risk) among the security as well. This interactive risk is measured by covariance which is absolute measurement and by correlation which is relative measurement. A statistical measure of the degree to which two variable such as securities' returns move together is correlation. The formula for the calculation of portfolio risk for two assets case is given by :

$$\dagger_P = \sqrt{\dagger_A^2 W_A^2 + \dagger_B^2 W_B^2 + 2W_A W_B COV_{AB}}$$

Where,

$\dagger_P$  = Portfolio S. D.

$\dagger_A^2$  = Variance of asset A, i. e. risk of asset A

$\dagger_B^2$  = Variance of asset B, i. e. risk of asset B

$W_A$  = Weight of asset A

$W_B$  = Weight of asset B

$COV_{AB}$  = Covariance between returns of asset A and asset B

### 3.5.10 Minimum variance portfolio

It is the proportion of stock (asset) that minimizes the possible (unsystematic) risk. Mathematically,

$$W_A = \frac{\dagger_B^2 - COV(R_A R_B)}{\dagger_A^2 + \dagger_B^2 - 2COV(R_A R_B)}$$

### 3.5.11 Market return

Market return refers to the average return of overall market portfolio. The Market Return for this study has obtained by taking difference between the market indices, i. e. NEPSE index where market dividend is ignored.

Mathematically,

$$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$$

Where,

$NI_t$  = NEPSE index at time t

$NI_{t-1}$  = NEPSE index a

$R_m$  = Return on market

## CHAPTER- IV

### DATA PRESENTATION AND ANALYSIS

#### 4. Introduction

This chapter presents the data and their analysis. DPS and MPS of respective banks as well as NEPSE index of each sector and market are presented and analyzed. The presentation and analysis of data consists of organizing, tabulating and assessing financial and statistical results. Different tables and diagrams are drawn to make the results very simple and easily understandable. Some tables and diagrams have been published by Nepal Stock Exchange Limited, itself which are also presented in this chapter while analyzing the data.

#### 4.1 Data presentation and analysis

There are about seventeen commercial banks in operation up to 2006/07. But only fifteen banks are listed in NEPSE. This study has been focused only on seven listed commercial banks. The presentation and analysis of data has been made in the order of commercial banks published by NEPSE Ltd. in the heading of “classification of the listed companies under the Listing Bye- law (2053 BS)”. The positional order of the commercial banks is as follows:

1. NABIL Bank Ltd.
2. Standard Chartered Bank Nepal Ltd.
3. Himalayan Bank Ltd.
4. Nepal Bangladesh Bank Ltd.
5. Everest Bank Ltd.

##### 4.1.1 NABIL Bank Limited (NABIL)

NABIL is the first joint venture bank of Nepal. It was established in 2041 B. S. (1984 A. D). It was listed in NEPSE on 08/09/2042 B. S. In the initial stage; Dubai Bank Ltd. (DBL) invested fifty percentages of equity shares of NABIL. These shares owned by DBL were transferred to Emirates Bank International Ltd. (EBIL), Dubai. Later, National Bank Ltd., Bangladesh (NBLB) purchased the entire holding of EBIL. Now, NBLB is managing the bank in accordance with the technical service agreement signed

between both banks on June 1995. The Authorized capital is Rs. 500,000,000, Issued capital is Rs. 491,654,400 and Paid up capital is Rs. 491,654,400. The Face value of a share is Rs. 100 and no. of shareholders is 5076 respectively.

#### 4.1.1.2 Market price and dividend

The Highest, Lowest and Closing MPS with DPS have shown in the following table no. 4.1. The movement of closing price over the period is presented in Diagram 4.1.

**Table No. 4.1**  
**MPS and Dividend**

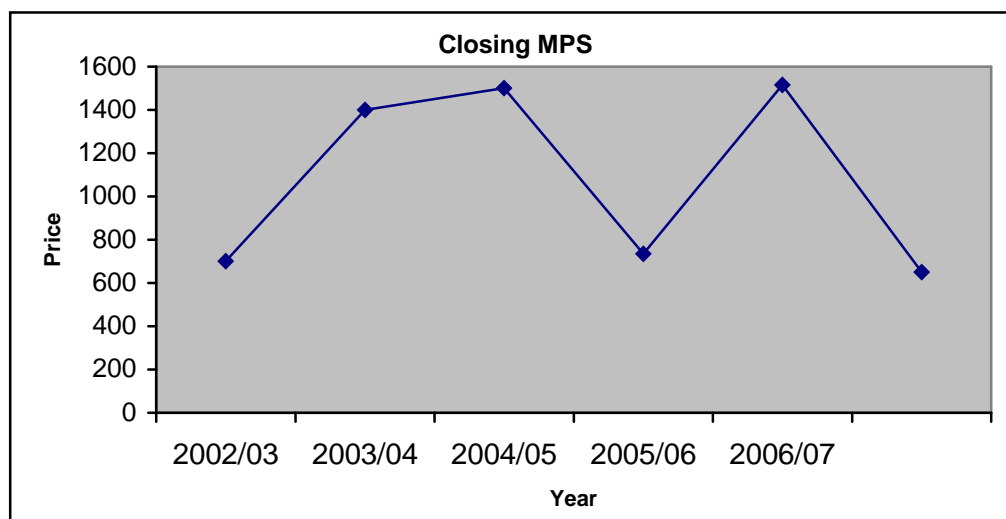
Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2002/03	762	404	700	50	-----	50
2003/04	1495	700	1400	55	-----	55
2004/05	2301	1310	1500	40	1:1	775*
2005/06	1500	465	735	30	-----	30
2006/07	1515	1000	1505	65	-----	65

Source: NEPSE Annual Reports

\* $40 + 1 \times 735 = \text{Rs.}775$

Note: Total dividend = DPS + Stock dividend percentage x next year MPS

**Diagram No. 4.1**  
**Year-end price movement**



The price is maximum in the fiscal year 2003/04A.D. and lowest in fiscal year 2002/03. The price is in increasing trend from fiscal year 2002/03 to 2004/05 and decreasing trend thereafter. The price is constant for the fiscal year 2005/06 and 2006/07. The issues of bonus share in fiscal year 2004/05 A. D. resulted in decrease in share price significantly. The correlation coefficient between MPS and DPS of the Nabil bank is 0.517. It indicates that when there is a Re. 1 increase in the MPS of the bank the DPS will decrease by Re. 0.517.

#### 4.1.1.3 Realized return ( $R$ ), Standard deviation ( $\dagger$ ) and Expected return ( $\bar{R}$ )

The realized rate of return has been calculated using year-end price and total dividend amounts. Table 4.2 shows the calculations mentioned above.

**Table 4.2**  
**Realized rate of returns, expected returns and S.D. of returns**

Fiscal Year	Closing MPS (Rs.)	Total Dividend (D) (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2002/03	700	50	-----	-----	-----
2003/04	1400	55	1.0786	0.8857	0.7845
2004/05	1500	775	0.6250	0.4321	0.1867
2005/06	735	30	-1.0000	-1.1929	1.4230
2006/07	735	50	0.0680	-0.1249	0.0156
		Total	0.7716		2.4098

We have,

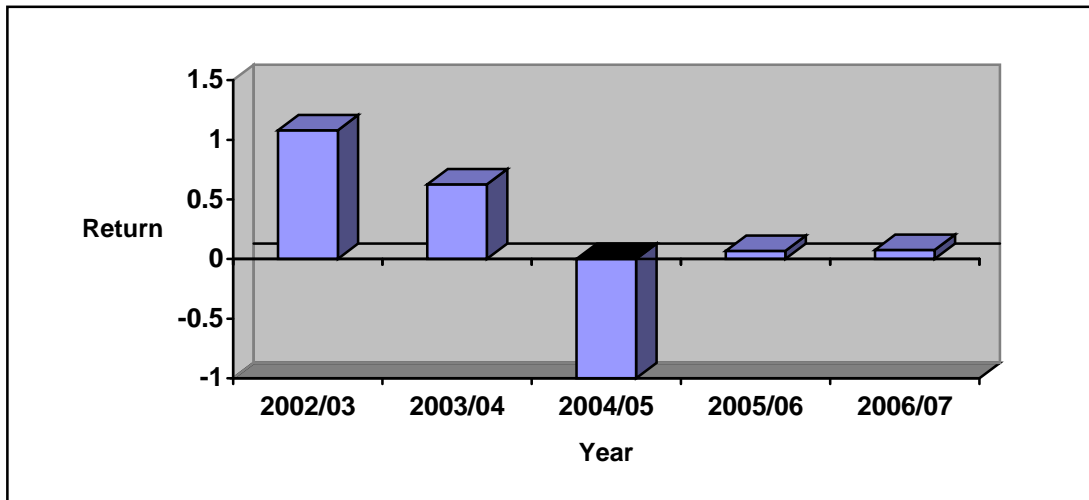
$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.7716}{4} = 0.1929$$

$$\text{Standard Deviation } (\dagger) = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{2.4098}{3}} = 0.8963$$

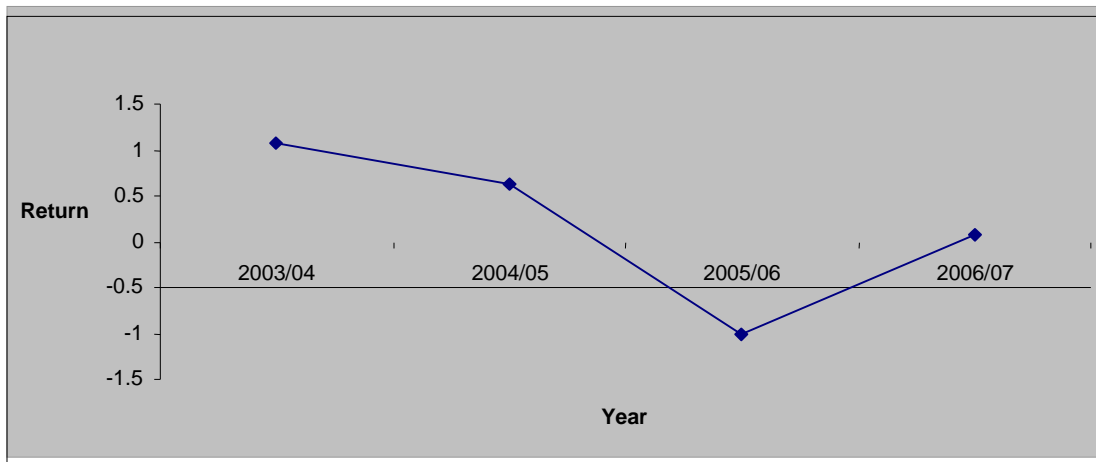
$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{R} = \frac{0.8963}{0.1929} = 4.6462$$



**Diagram No. 4.2**  
**Annual rate of return**



**Diagram No. 4.3**  
**Annual rate of return**



The above Diagram, show that the annual return is in decreasing trend up to 2003/04 but in 2005/06 it has increased and it is highest in year 2003/04 and lowest in 2005/06.

**4.1.3 Standard Chartered Bank Nepal Ltd. (SCBNL)**

SCBL is the second joint venture bank of Nepal. It was established in 2042 B. S. (1985 A.D). It was listed in NEPSE in 03/21/2045 B. S. Standard Chartered Bank; England is managing the bank under joint venture and technical service agreement signed between bank and Nepalese promoters. The Authorized capital is Rs. 339,548,800, Issued capital

is Rs.339, 548,800 and Paid up capital is Rs. 339,548,800. The Face value of a share is Rs. 100 and no. of shareholders is 5037 respectively.

#### 4.1.3.2 MPS and DPS of the bank

The Highest, Lowest and Closing MPS as well as DPS of SCBNL have shown in Table 4.3 and Year- end price movement has shown in Diagram No. 4.4.

**Table No. 4.3**

#### MPS and Dividend

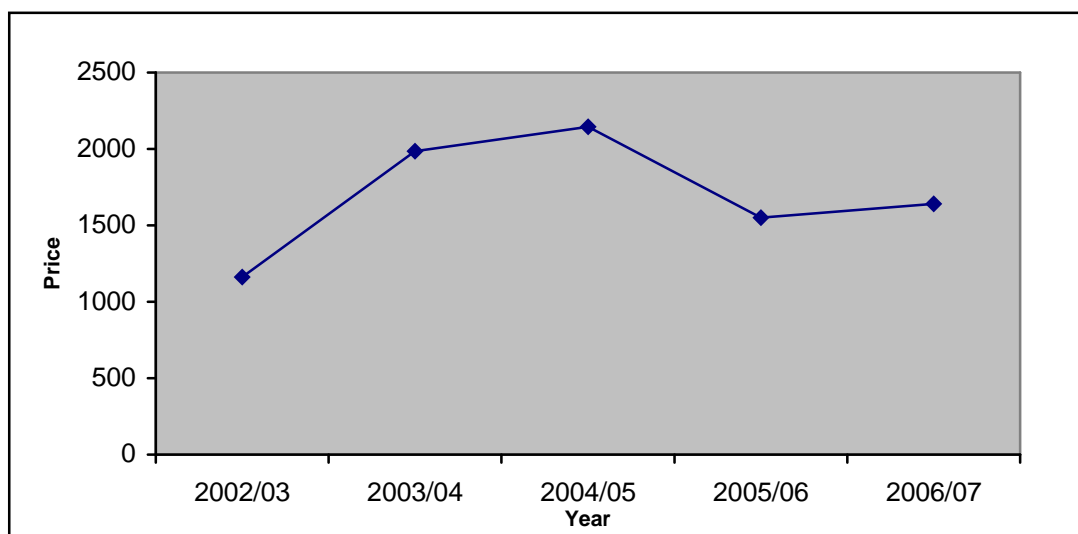
Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2002/03	1338	775	1162	80	1:2	1072.5*
2003/04	2050	1181	1985	100	-----	100
2004/05	3111	1860	2144	100	-----	100
2005/06	2100	1000	1550	100	-----	100
2006/07	1760	1380	1640	110	-----	110

Source: NEPSE Annual Reports

- $80 + 1/2 \times 1985 = 1072.5$

**Diagram No. 4.4**

#### Year-end price movement



The price is the maximum in the fiscal year 2004/05 A. D. and minimum in the fiscal year 2002/03 A. D. The price is in increasing trend from 2002/03 to 2004/05. It has decreased in fiscal year 2005/06 and again has in increasing trend thereafter. The issue of bonus share, in the fiscal year 2004/05 A. D. resulted in decrease in MPS heavily. The correlation coefficient between MPS and DPS of the SCBNL is 0.599 which indicates that when there is a Re. 1 increase in the MPS of the stock, the DPS will increase simultaneously by 0.599.

#### 4.1.3.3 Realized return(R), Standard deviation (†), and Expected return ( $\bar{R}$ )

The realized rate of return has been calculated by using year- end price and total dividend amounts. Table 4.4 shows the calculations mentioned above.

**Table 4.4**  
**Realized rate of returns, expected returns and standard deviation**

Fiscal Year	Closing MPS( Rs.)	Total Dividend (D) (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2002/03	1162	1072.50	-----	-----	-----
2003/04	1985	100	0.7943	0.5884	0.3462
2004/05	2144	100	0.1305	-0.0754	0.0057
2005/06	1550	100	-0.2304	-0.4363	0.1904
2006/07	1640	110	0.1290	-0.0769	0.0059
		Total	0.8234		0.5482

Source: NEPSE Annual Reports

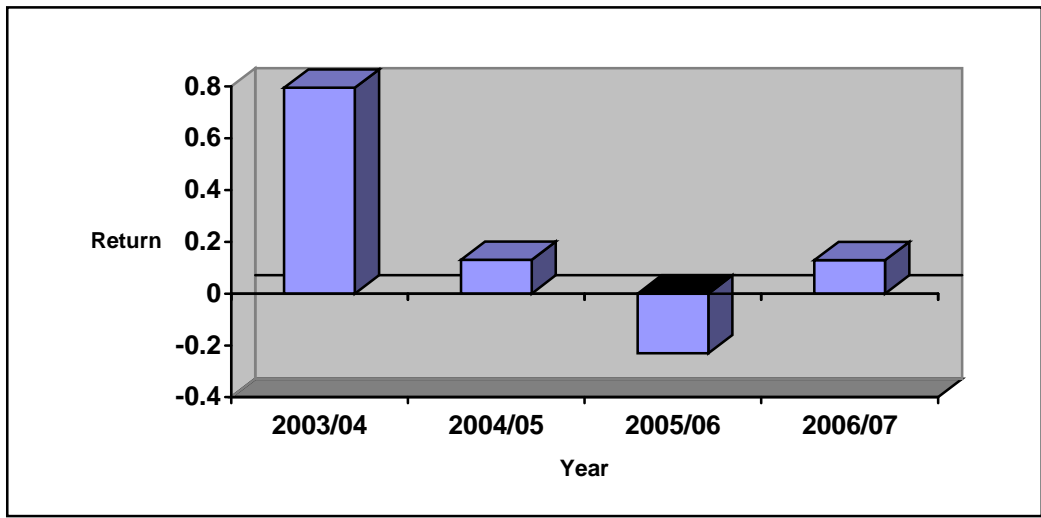
We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.8234}{4} = 0.2059$$

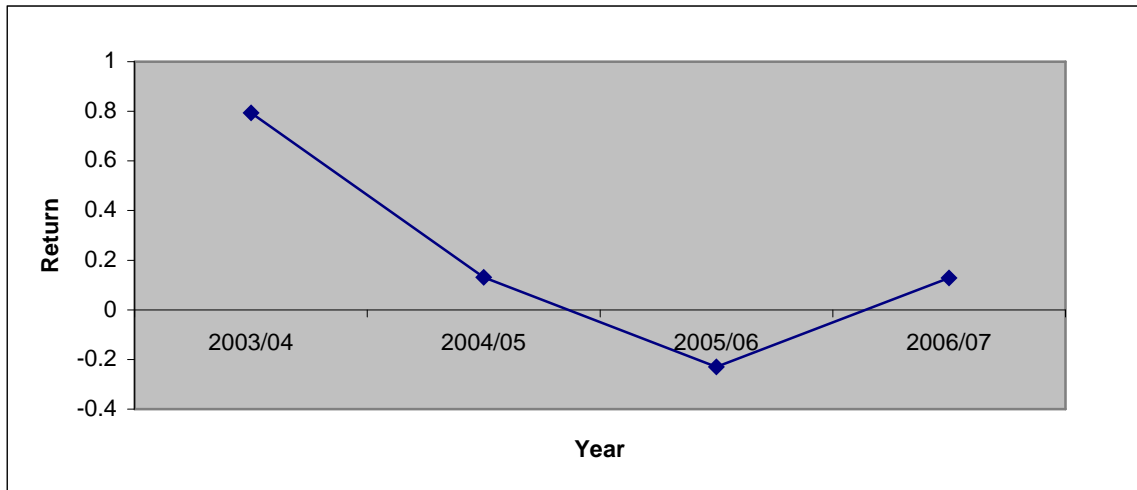
$$\text{Standard Deviation } (\dagger) = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{0.5482}{3}} = 0.4275$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{R} = \frac{0.4275}{0.2059} = 2.0761$$

**Diagram No. 4.5**  
**Annual rate of return**



**Diagram No. 4.6**  
**Annual rate of return**



The above Diagram show that the return of SCBL C.S. is in decreasing trend up to 2005/06 but in 2006/07 return is increased. Highest Rate of return of C.S. of SCBL was in 2003/04 and lowest rate of return was is in 2005/06.

#### 4.1.4 Himalayan Bank Ltd. (HBL)

Himalayan Bank Limited is the first joint venture bank managed by Nepalese chief executive. It was established in 2048 B. S. (1992 A. D.). It was listed in NEPSE in 03/21/2050 B. S. Joint venture partner of this bank is Habib Bank Ltd. of Pakistan. The Authorized capital is Rs.1, 000,000,000, Issued capital is Rs.650,000, 000 and Paid up capital is Rs.429,000,000. The Face value of a share is Rs. 100 and no. of shareholders is 7210 respectively.

#### 4.1.4.2 MPS and DPS of the bank

The Highest, Lowest and closing as well as DPS of Himalayan Bank Ltd. has shown in Table no. 4.5 and year- end price movement has shown in Diagram 4.7

**Table No. 4.5**  
**MPS and Dividend**

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2002/03	1200	700	1000	50	3:5	1070*
2003/04	1780	1000	1700	50	1:4	425**
2004/05	2726	1325	1500	27.50	1:4	277.5***
2005/06	1530	610	1000	25	30%	275.80****
2006/07	950	750	836	1.31	1:10	85.31*****

Source: NEPSE Annual Reports

$$*50 + \frac{3}{5} \times 1700 = 1070$$

$$**50 + \frac{1}{4} \times 1500 = 425$$

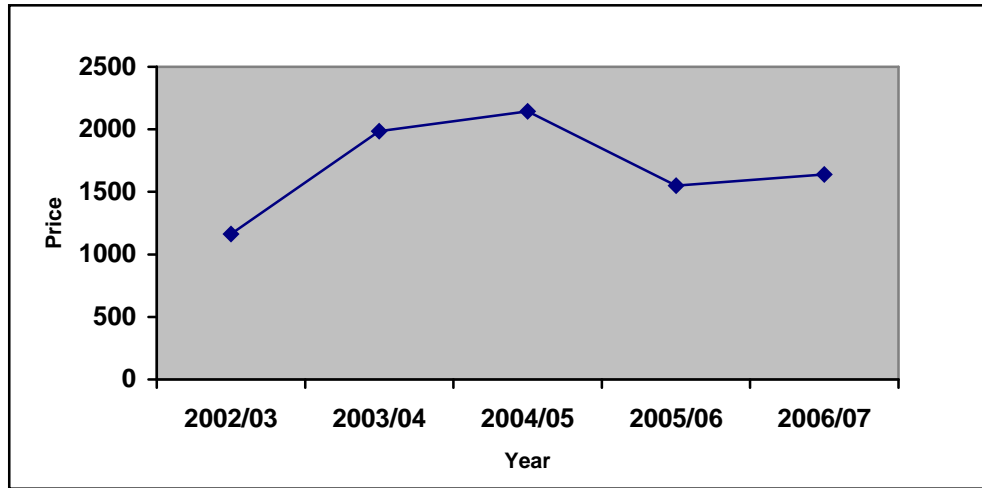
$$***27.50 + \frac{1}{4} \times 1000 = 277.5$$

$$**** 25 + 0.3 \times 836 = 275.80$$

$$***** 1.31 + \frac{1}{10} \times 840 = 85.31$$

Note: Closing MPS for 2005/06 was 1000

**Figure 4.7**  
**Year End Price movement**



The price is the maximum in the fiscal year 2004/05 A. D. and minimum in the fiscal year 2002/03 A. D. The price is in increasing trend from 2002/03 to 2004/05. It has decreased in fiscal year 2005/06 and again has in increasing trend thereafter. The issue of bonus share, in the fiscal year 2002/03 A. D. resulted in decrease in MPS heavily. The correlation between MPS and DPS of HBL is positive i.e. 0.5518, which indicates that when there is a Re. 1 increase in the MPS of the bank there will be Re 0.55 increase in the DPS of the bank.

#### **4.1.4.3 Realized return( $R$ ), Standard deviation( $\sigma$ ), and Expected return( $\bar{R}$ )**

The realized rate of return has calculated by using year-end price and total dividend amount. Table 4.6 shows the calculations mentioned above.

**Table 4.6****Realized rate of returns, expected returns and standard deviation**

Fiscal Year	Closing MPS (Rs.)	Total Dividend (D) (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2002/03	1000	1070	-----	-----	-----
2003/04	1700	425	1.125	0.8894	0.7910
2004/05	1500	277.50	0.0456	-0.19	0.0361
2005/06	1000	275.80	-0.1495	-0.3851	0.1483
2006/07	836	85.31	-0.07869	-0.3143	0.0988
		Total	0.9424		1.0742

Source: NEPSE Annual Reports

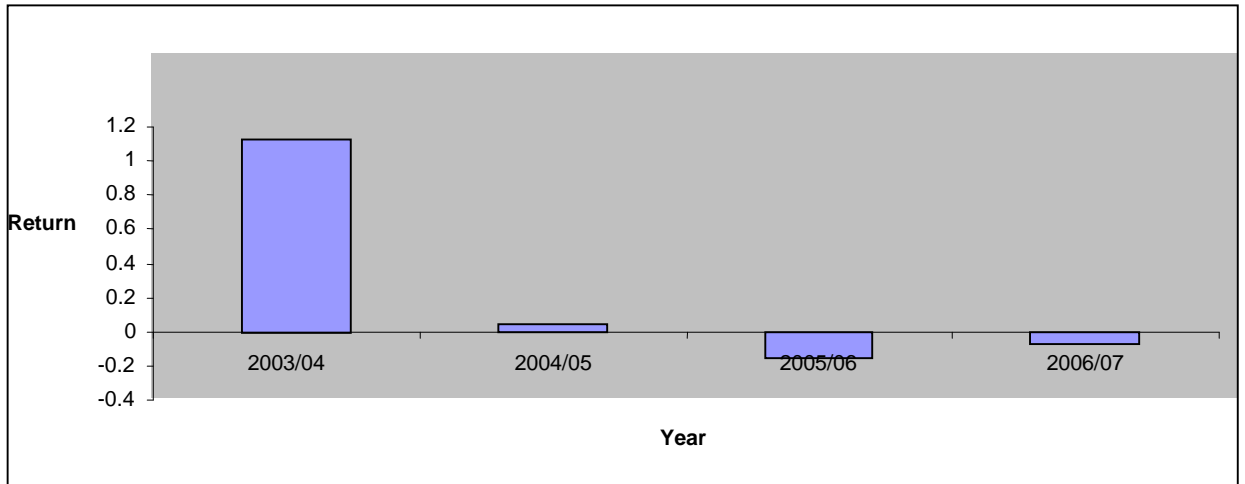
We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.9424}{4} = 0.2356$$

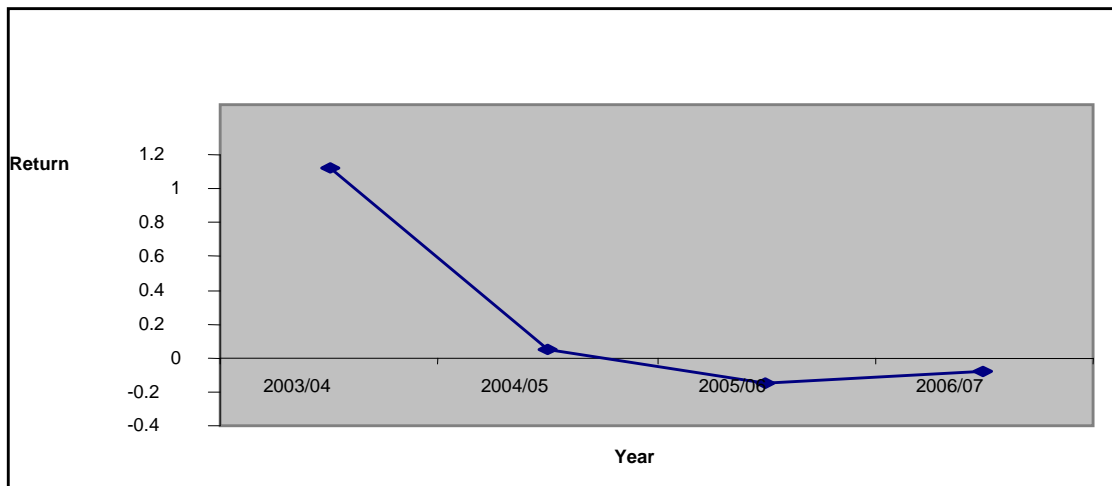
$$\text{Standard Deviation } (\dagger) = \sqrt{\frac{\sum (R - \bar{R})(R - \bar{R})}{n-1}} = \sqrt{\frac{1.0742}{3}} = 0.5984$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{\bar{R}} = \frac{0.5984}{0.2356} = 2.534$$

**Figure 4.8**  
**Annual rate of return**



**Figure 4.9**  
**Annual rate of return**



The above figure show that HBL rate of return is highest in 2003/04 and lowest in 2005/06. HBL rate of return was in decreasing trend up to 2005/06 and in 2006/07 it has been increased but it is still negative.

**4.1.6 Nepal Bangladesh Bank Ltd.**

Nepal Bangladesh Bank Ltd. is also the joint venture bank of Nepal whose joint venture partner is IFIC Bank Ltd. of Bangladesh. It was established in 2051 B. S. (1994 A. D.). It was listed in NEPSE in 09/09/2052 B. S. The Authorized capital is Rs.1,000,000,000,



Issued capital is Rs.500,000,000 and Paid up capital is Rs. 359,924,500. The Face value of a share is Rs. 100 and no. of shareholders is 24598 respectively.

#### 4.1.6.2 MPS and DPS of the bank

The Highest, Lowest and closing MPS and DPS of NBBL has shown in Table no. 4.7 and year- end price movement has shown in figure 4.10

**Table 4.7**  
**MPS and Dividend**

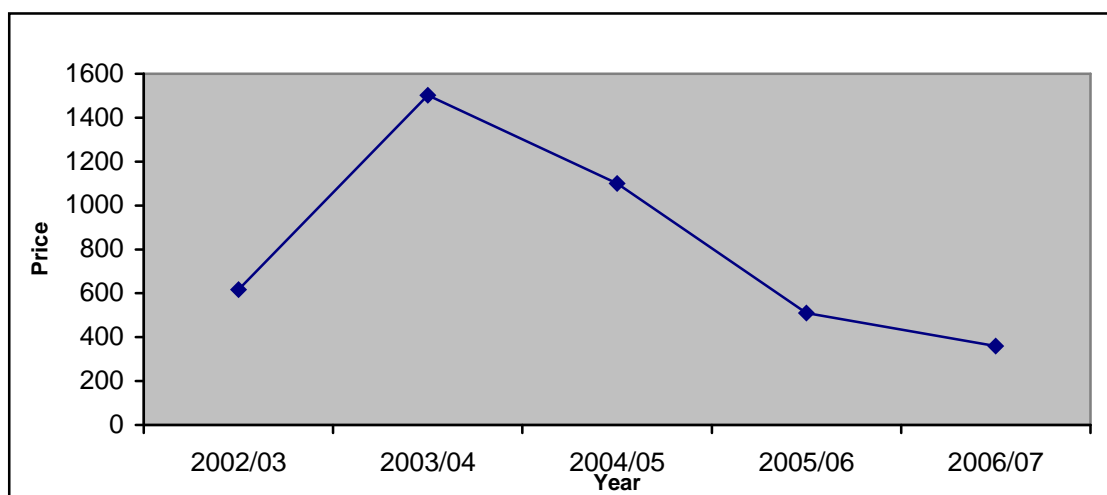
Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2002/03	682	251	616	15.47	-----	15.47
2003/04	1505	800	1502	0	-----	0
2004/05	3430	950	1100	5.04	1:1	515.04*
2005/06	1200	340	510	0	1:2	180**
2006/07	535	341	360	0	-----	0

Source: NEPSE Annual Reports

\*5.04 + 1x 510 = Rs.515.04

\*\*0 + 1/2x 360 = Rs.180

**Figure 4.10**  
**Year-end price movement**



The price is maximum in the fiscal year 2003/04 A. D. and lowest in the fiscal year 2006/07 A. D. The price is in decreasing trend from fiscal year 2003/04 A. D. The issue of bonus share resulted into a heavy decrease in share price. The correlation coefficient between MPS and DPS of the bank is negative i.e. -0.13352 which indicates that when there is a Re. 1 increase in the MPS of the bank the DPS will decrease by -0.13352.

#### 4.1.6.3 Realized return(R), Standard deviation (†) and Expected return ( $\bar{R}$ )

The realized rate of return has calculated by using year-end price and total dividend amounts. Table 4.8 shows the calculations mentioned above.

**Table 4.8**  
**Realized rate of returns, expected returns and Standard deviation**

Fiscal Year	Closing MPS (Rs.)	Total Dividend (D) (Rs.)	R= $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R- $\bar{R}$ )	$(R - \bar{R})^2$
2002/03	616	15.47	-----	-----	-----
2003/04	1502	0	1.4383	1.1039	1.2186
2004/05	1100	515.04	0.0753	-0.2591	0.0671
2005/06	510	180	-0.3727	-0.5844	0.3415
2006/07	360	0	-0.2941	-0.6285	0.3950
		Total	0.8468		2.0222

Source: NEPSE Annual Reports

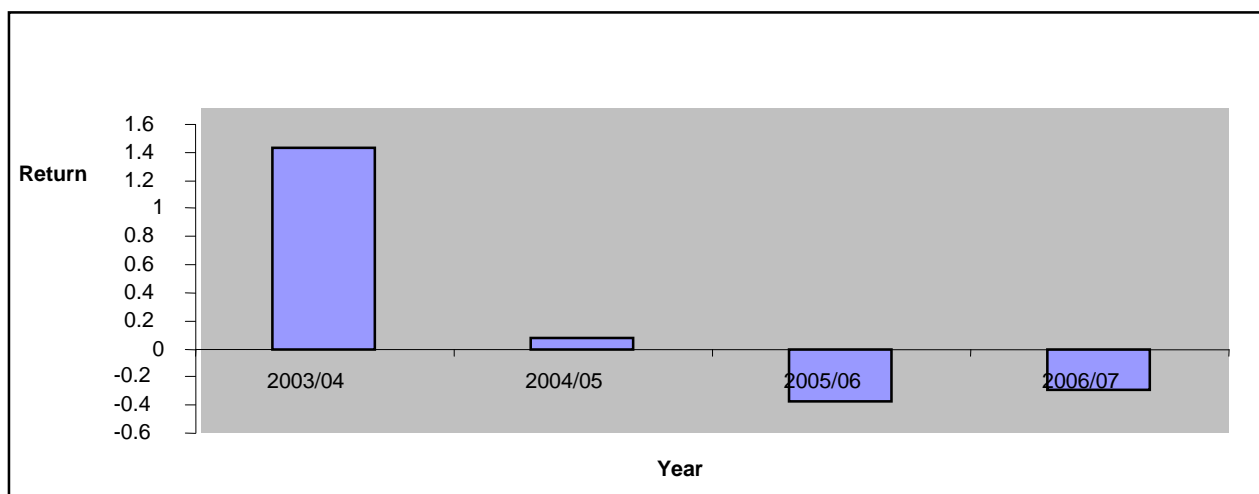
We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.8468}{4} = 0.2117$$

$$\text{Standard Deviation } (\dagger) = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{2.0222}{3}} = 0.8210$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{\bar{R}} = \frac{0.8210}{0.2117} = 3.878$$

**Figure 4.11**  
**Annual rate of return**



The above Figure shows that the return of NBB was highest in 2003/04 and lowest in 2005/06. The return of NBB is also following decreasing trend up to 2005/06.

#### **4.1.7 Everest Bank Ltd.**

Everest Bank Ltd. was established on 2049 B. S. (1993 A. D.). It was listed in NEPS in 25/12/2052 B. S. It is also the joint venture bank and the joint venture partner of the bank is Punjab National Bank Ltd. The Authorized capital is Rs.750, 000,000, Issued capital is Rs.465,000,000 and Paid up capital is Rs 455,000,000. The Face value of a share is Rs. 100 and no. of shareholders is 24222 respectively.

##### **4.1.7.1 MPS and DPS of the bank**

The Highest, Lowest and Closing MPS and DPS of EBL has shown in Table no. 4.9 and year- end price movement has shown in figure 4.13

**Table 4.9**  
**MPS and Dividend**

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2002/03	440	184	407	15	-----	15
2003/04	980	400	980	0	-----	0
2004/05	1850	670	750	0	1:1	430*
2005/06	740	325	430	0	-----	0
2006/07	490	349	445	20	20%	156**

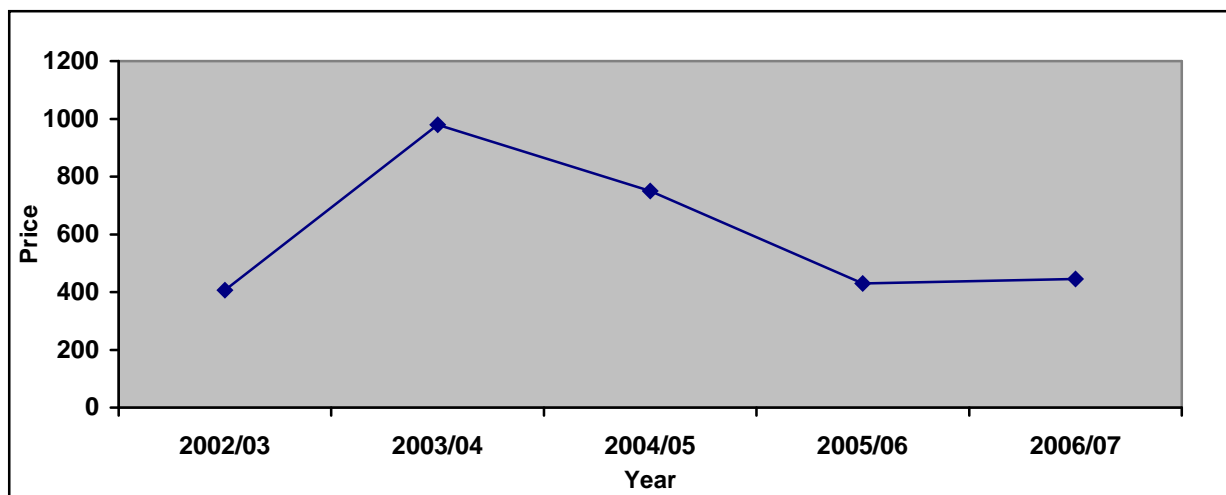
Source: NEPSE Annual Reports

\* $0 + 1 \times 430 = \text{Rs.}430$

\*\* $20 + 0.2 \times 680 = \text{Rs.}156$

Note: The closing MPS for fiscal year 2005/06 was Rs.430.

**Figure 4.12**  
**Year- end price movement**



The price is the maximum in the fiscal year 2003/04 A. D. and lowest in the fiscal year 2002/03 A. D. The price is in decreasing trend from fiscal year 2003/04 A. D. However, the price has slightly increased in fiscal year 2005/06. The correlation coefficient between MPS and DPS while calculating in the excel sheet is -0.613 which indicates that when there is a Re. 1 increase in MPS of the stock there will be Re. 0.613 decrease in the DPS., which is questionable in itself.

#### 4.1.7.2 Realized return(R), Standard deviation (†) and Expected return ( $\bar{R}$ )

The realized rate of return has calculated by using year-end price and total dividend amounts. Table 4.10 shows the calculations mentioned above.

**Table 4.10**

#### **Realized rate of returns, expected returns and standard deviation**

Fiscal Year	Closing MPS (Rs.)	Total Dividend (D) (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2002/03	407	15	-----	-----	-----
2003/04	980	0	1.4079	1.0122	1.0245
2004/05	750	430	0.2041	-0.1916	0.0367
2005/06	430	0	-0.4267	-0.8224	0.6763
2006/07	445	156	0.3977	0.0020	0.0000
		Total	1.5830		1.7375

Source: NEPSE Annual Reports

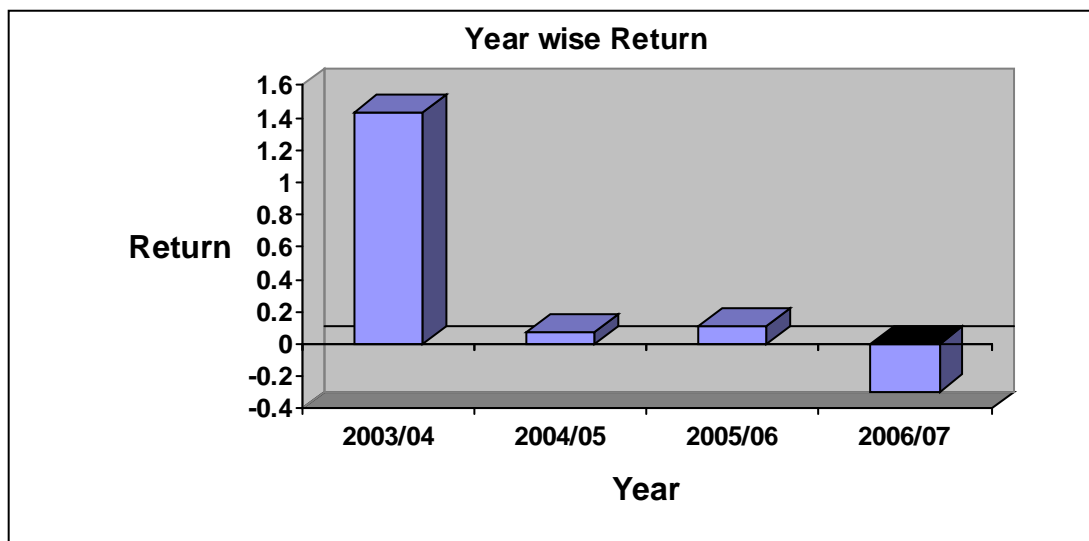
We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{1.5830}{4} = 0.3957$$

$$\text{Standard Deviation } (\dagger) = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{1.7375}{3}} = 0.7610$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{\bar{R}} = \frac{0.7610}{0.3957} = 1.9232$$

**Figure 4.13**  
**Annual rate of return**



The above figure show that rate of the return also follows the decreasing trend up to 2005/06. The rate of return of common stock of EBL was highest in 2003/04 and lowest in 2005/06.

#### **4. 2 Inter- Bank Comparisons**

The return and risk of individual banks have calculated in the section 4.1. The main purpose of such return and risk analysis is to select the bank(s) for investment. So, on the basis of calculations from section 4.11, a comparative analysis of return and risk is performed here.

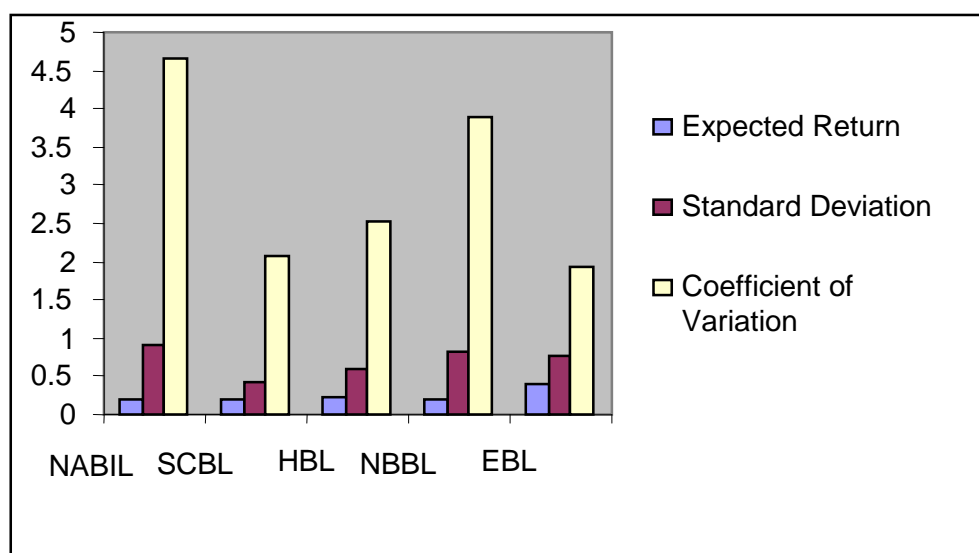
**Table 4.11**

**Expected return, S. D. and coefficient of variation of each Bank**

Banks	Expected Return	Standard Deviation	Coefficient of Variation
NABIL	0.1929	0.8963	4.6462
SCBL	0.2059	0.4275	2.0761
HBL	0.2356	0.5984	2.534
NBBL	0.2117	0.8210	3.878
EBL	0.3957	0.7610	1.9232

From the above table it can be concluded that the return from EBL is the highest one. So, based on historical analysis of data it can be stated that the investors can get the highest return from the investment in the C. S. of EBL and these can get the lowest return from investment in the C. S. of NABIL in future periods. For the investment purpose it is better to select the bank on the basis of C. V., which shows the risk per unit of return. The bank having lowest C. V. should be selected. Lowest C.V. For a quick view of the risk position of the banks following figures are presented.

**Figure 4.14**  
**Expected return, S. D. and coefficient of variation of each Bank**



The above figure, it is seen that the expected return of EBL has highest and Nabil return is lowest. So, those banks are also good for investors to invest.

#### **4.2.1 Market capitalization**

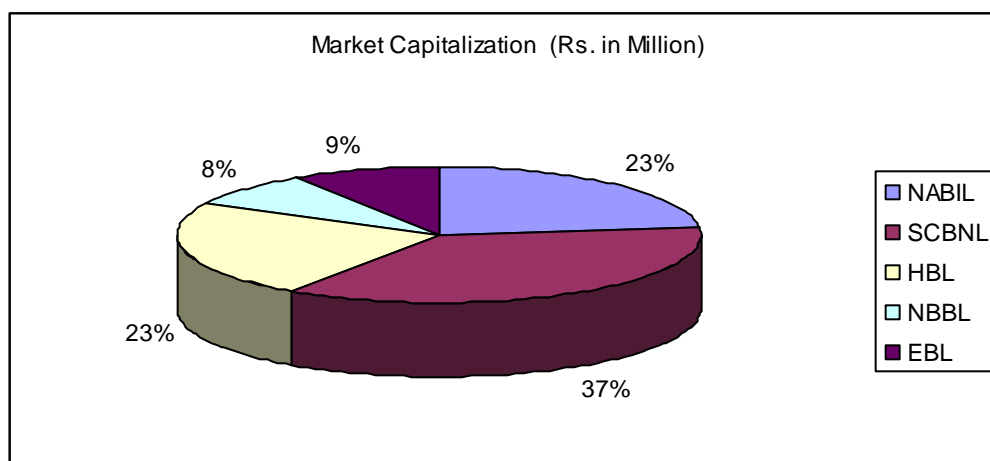
Market capitalization is the total market value at specific time period of the company, industry and market as a whole. The size of the bank can be determined with the help of market capitalization. Table 4.12 shows the size of listed banks at July 15, 2005

**Table 4.12**  
**Market Capitalization of the Banks on July 15, 2005**

Banks	Market Capitalization (Rs. in Million)	% Value
NABIL Bank Ltd.	3613.63	19.12
Standard Chartered Bank Ltd.	5568.62	29.47
Himalayan Bank Ltd.	3586.44	18.98
Nepal Bangladesh Bank Ltd.	1295.71	6.86
Everest Bank Ltd.	1401.75	7.42

Source: NEPSE Annual Reports

**Figure 4.15**  
**Market Capitalization the Banks at July 15, 2005**



On the basis of Market Capitalization, Standard Chartered Bank Nepal Ltd. Is the largest bank amongst the banks under study. The investment decision can also be taken on the basis of market capitalization and it is better to invest on the C. S. of Standard Chartered Bank Nepal Ltd. But it may not be a proper investment decision because market capitalization shows only the total market value of the company at a specified time period, which is a theoretical value and could not be realized actually.

#### 4.2.1.1 Movement of market capitalization

Market capitalization movement denotes the changed values of the company from year to year. It shows the consistent type of company on the basis of market capitalization. Table 4.17 shows the year- wise movement of market capitalization.



**Table 4.13**

**Year-wise comparative movement of market capitalization (Rs. in million)**

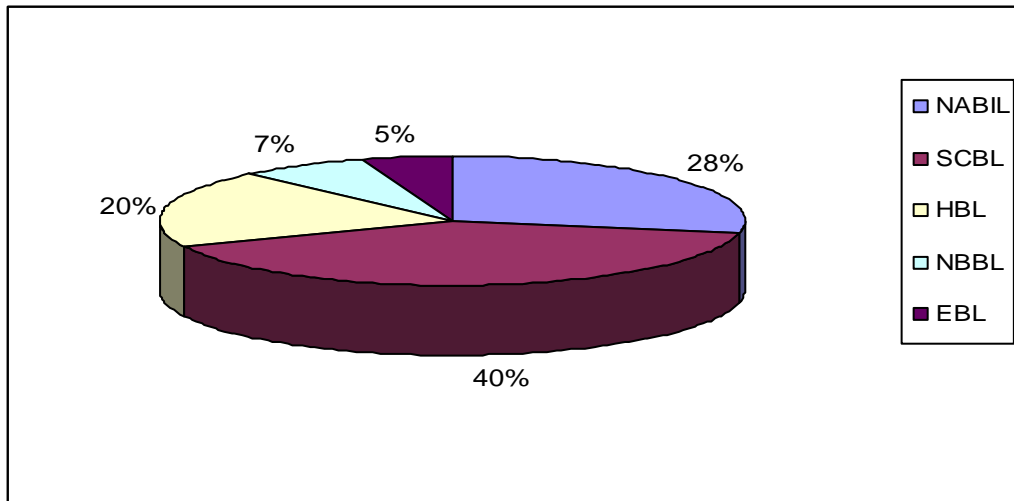
Banks	Year				
	2002/03	2003/04	2004/05	2005/06	2006/07
NABIL	2749.60	5499.20	7374.75	3613.63	3613.63
SCBL	3945.57	6740.07	7279.95	5263.03	5568.62
HBL	1920	4080	4500	3900	3586.44
NBBL	716.72	1768.91	2619.76	1821.98	1295.71
EBL	482.01	1160.52	1656.45	1115.08	1401.75

Source: NEPSE Annual Reports

To find the consistency of movement of market capitalization, the C.V. of the market capitalization should be calculated. Less C.V. gives the consistent type of company value and appropriate company for investment.

**Figure 4.16**

**Year-wise comparative movement of market capitalization of the banks**



The above figure show that the movement of market capitalization is in increasing trend up to 2004/05 and after 2005/06 capital movements is stable of EBL and market capitalization of NIBL is in increasing trend up to 2004/05 and in 2005/06 it decreased but again in 2006/07 its increase. But market capitalization of SCBL is in increasing

trend up to 2004/05, and in 2004/05 it has been decreased and in 2006/07 it has been increased. Market capitalization movement of HBL is in increasing trend up to 2004/05 but after that it is in decreasing trend. Highest movement of market capitalization is in 2004/05 and lowest in 2005/06.

#### **4.3 Comparative position of banking industry in the NEPSE**

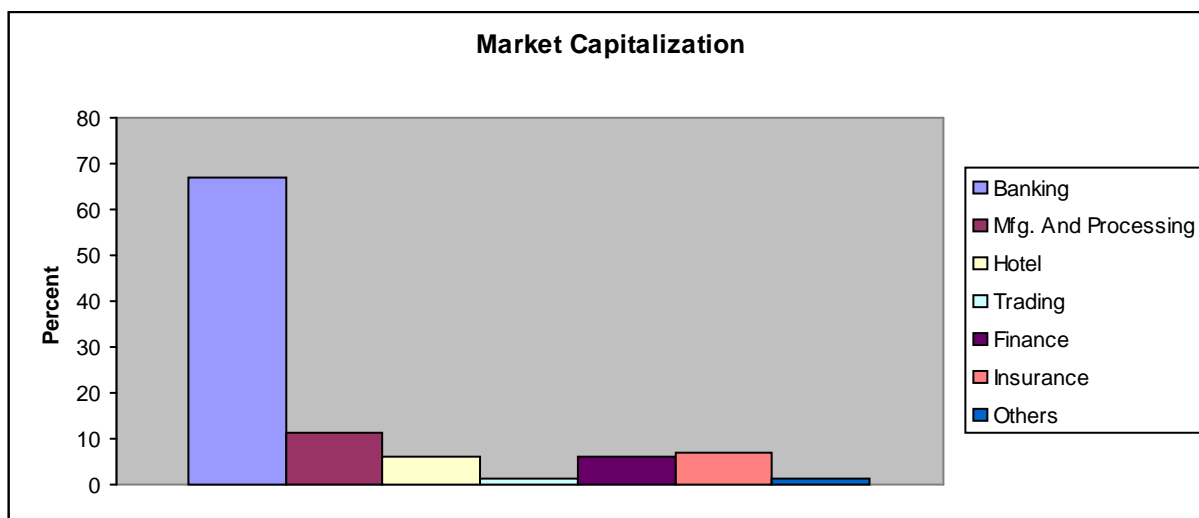
The financial market includes different types of company involved in financial activities. The groups of the same types of companies constitute one type of industry. Banking is one type of industry, which has majority value of total market share out of whole industry.

**Table 4.14**  
**Market capitalization of each industry**

Industry	Market Capitalization (Rs. in Million)	% Value
Banking	2714.42	66.82
Mfg. and Processing	4644.59	11.43
Hotel	2391.39	5.89
Trading	490.37	1.21
Finance	2549.30	6.27
Insurance	2911.75	7.17
Others	493.09	1.21
Total	40627.91	100

Source: NEPSE Annual Reports

**Figure 4.17**  
**Market capitalization of each industry**



Considering the industry-wise market capitalization, the investment in common stocks of Banking Industry seems to be appropriate because Banking Industry is prosperous industry having 66.82% value over the total industry-wise market capitalization.

#### 4.4 Comparative analysis in the market risk

Based on the market capitalization as described the best industry for investment is banking industry. But the proper method of investment decision is risk and return analysis. So, in this section industry wise comparison of risk and return is made here on the basis of year-end NEPSE index. Table 4.19 shows the industry-wise statistical tools for analysis.

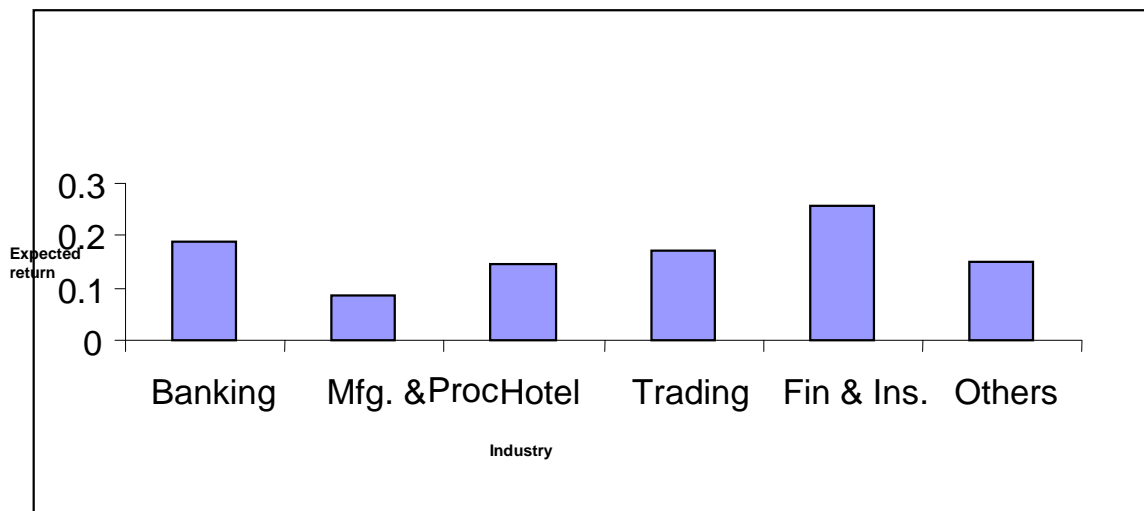
**Table 4.15**  
**Industry-wise expected return, S.D. and C.V. of returns**

Industry	Expected Return	S. D.	C. V.
Banking	0.1903	0.4699	2.4693
Mfg. and processing	0.0867	0.3631	4.1884
Hotel	0.1451	0.8281	5.7068
Trading	0.1723	0.8165	4.7390
Finance & Insurance	0.2565	0.6380	2.4873
Others	0.1486	1.0810	7.2749

*Source: SEBON Annual Report 2007*

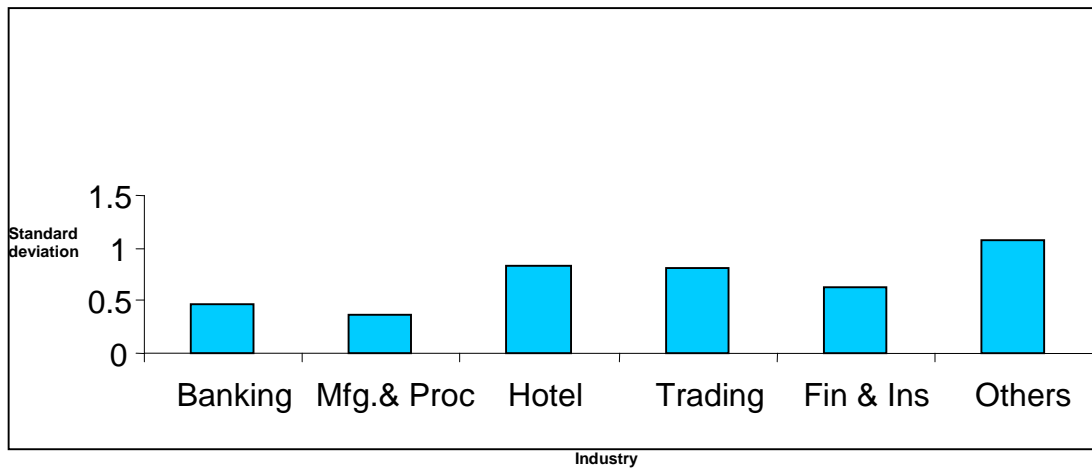
The expected return, S.D. and C.V. of returns of different industries have calculated in Annex no. 2 to 7. Industry-wise NEPSE index has presented in Annex no. 1. Based on the risk per unit of return (i.e. C.V.) of different industries, banking industry is the best to invest in common stock because banking industry has lowest C.V. It has C.V. of 2.4693, i.e. to earn 1 unit of return the investor has to bear the 2.4693 unit of risk only, while the other industries have more C. V. than 2.4693. But the average rate of return of Finance and Insurance industry has more than that of others, which has also shown in figure 4.20 4.21 and 4.22.

**Figure 4.18**  
**Industry-wise expected return**



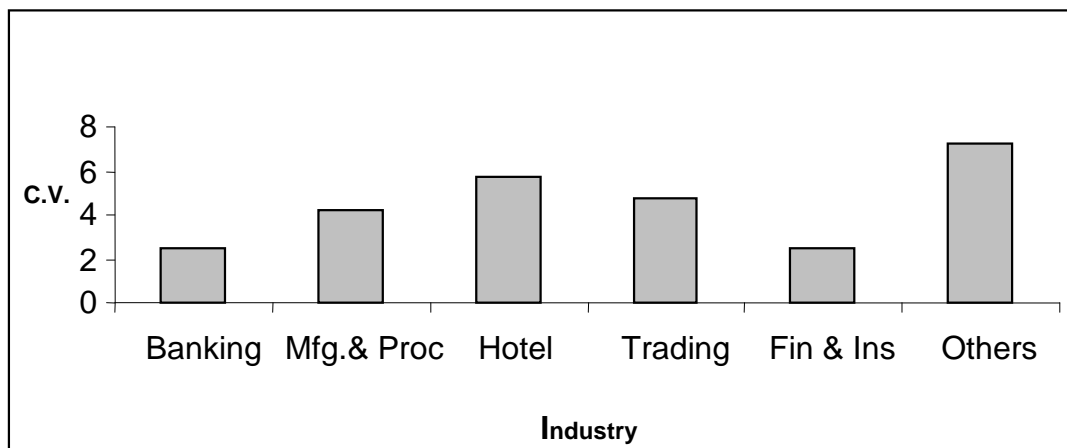
The above figure shows that finance and Insurance Company has highest expected return and manufacturing and processing company has the lowest expected return. Banking industry has highest expected return after insurance and finance industry.

**Figure 4.19**  
**Industry-wise standard deviation.**



The above figure show that others sector has highest S.D. and manufacturing and processing industry has the lowest S.D. Similarly, the coefficient of variation of other sector is the highest one and the C.V. of banking sector is the lowest. This situation has presented in the figure 4.21.

**Figure 4.20**  
**Industry-wise coefficient of variation (C. V.)**



#### **4.5 Comparison of returns and risk of each bank with market**

The return and risk of market is the average return and risk of all the securities available in the market. In this section the industry-wise risk and return is compared with the market risk and return.

#### 4.5.1 Market risk and return

The market risk and return has calculated from NEPSE index is as follows:

**Table 4.16**  
**Expected return, S.D. and C.V. of market returns:**

Statistical Tools	Value
Expected Return	0.1374
Standard Deviation	0.4309
Coefficient of Variation	3.1362

The market return is 13.74%, the total risk is 43.09% and C.V. of return is 3.1362.

#### 4.5.2 Market sensitivity of common stocks

The sensitivity of a stock return is measured by its beta coefficient. Beta is systematic risk measurement. The beta of market is always taken as 1. Beta of a stock more than 1 is called aggressive and Beta of stock less than 1 is called defensive. Investment in aggressive stock can get more return than market and vice-versa. Aggressive denotes more risky and defensive denotes less risky as compared to market.

##### 4.5.2.1 Calculation of beta of market

We have,

$$S_j = \frac{COV(R_j R_m)}{\sigma_m^2}$$

$$= \frac{\rho_{jm} \sigma_j \sigma_m}{\sigma_m^2} = \frac{\rho_{jm} \sigma_j}{\sigma_m}$$

Where,

$\rho_{jm}$  = Correlation Coefficient between returns of market and stock j

Again,

$$S_m = \frac{COV(R_m R_m)}{\sigma_m^2} = \frac{\rho_{mm} \sigma_m \sigma_m}{\sigma_m^2} = \rho_{mm} = 1$$

So, the beta coefficient of market is 1.

#### 4.5.2.2 Calculation of beta of common stocks of the banks

The beta coefficient of each common stock is presented in following table 4.17

**Table 4.17**  
**Beta coefficient of different banks**

Banks	beta coefficient	Remarks
NABIL	1.7105	Aggressive
SCBL	0.0001	Defensive
HBL	1.158	Aggressive
NBBL	1.5888	Aggressive
EBL	1.7293	Most aggressive

The beta coefficient of EBL is the greatest and is more than one. So, common stock of EBL is the most aggressive stock among the sampled banks. The beta coefficients of NABIL, HBL and NBBL are also greater than one so their common stock is also aggressive. The beta of SCBNL is less than one, so it is defensive.

#### 4.5.2.3 Evaluation of stocks of price

Price evaluation is related to identification of mispriced stocks and these include over-priced and under-priced stocks. The comparison of required rate of return and expected rate of return helps to identify overpriced, correctly priced and under priced stocks. There are three conditions of price evaluation, which are-

- Expected rate of return > Required rate of return  $\Rightarrow$  Under priced
- Expected rate of return < Required rate of return  $\Rightarrow$  Over priced
- Expected rate of return = Required rate of return  $\Rightarrow$  Correctly priced

For price evaluation, the calculation of required rate of return is necessary. The required rate of return can be calculated as-

$$E(R_j) = R_f + [E(R_m) - R_f] S_j$$

In the above equation, the risk free rate of return ( $R_f$ ) is used as the interest rate of Treasury bill issued by Nepal Rastra Bank. As suggested by Treasury Bill section of NRB, the interest rate of 91 days treasury bills converted to 364 days duration comes approximately to 3.2947% at current period.

Hence, the inputs for the equation are-

$$R_f = \text{Risk free rate of return} = 3.2947\% = 0.032947$$

$$E(R_m) = \text{Expected market rate of return} = 13.74\% = 0.1374$$

The betas have calculated already. The required rate of return and comparison has presented as below.

**Table 4.18**

**Required rate of return, expected rate of return and price evaluation**

Banks	Beta	$E(R_j) = R_f + [E(R_m) - R_f] S_j$	Expected return	Price evaluation
NABIL	1.7105	0.2116	0.1929	Over priced
SCBL	0.0001	0.033	0.2059	Under priced
HBL	1.158	0.1322	0.2356	Under priced
NBBL	1.5888	0.118	0.2117	Under priced
EBL	1.7293	0.2136	0.3957	Under priced

From the above table, NABIL is stocks are overpriced and remaining all banks has under-priced stocks. So, the stocks of all the commercial banks except NABIL are in demand and are good investment opportunities. The investors can gain from buying the under-priced stocks. But the price of stocks will increase only up to the point where expected rate of return is equal to required rate of return. Similarly, the price of stocks of NABIL decreases up to the equilibrium state.

#### **4.6 Correlation between returns of common stock of different banks**

If there is perfectly negative correlation between the returns of the stocks, the risk can be easily diversified. But, if there is perfectly positive correlation, risk can not be reduced.



In portfolio construction, the correlation between the returns of the stock plays a vital role. Hence, the correlation between the returns of common stock of different banks has presented below:

Correlation between NABIL and NBBL ( $\dots_{AB}$ )

We have,

$$\dots_{AB} = \frac{COV(R_A R_B)}{\dagger_A \dagger_B} = \frac{0.3816}{(0.8963)(0.4680)} = 0.9097$$

Where,

$\dots_{AB}$  = Correlation coefficient of returns between NABIL and NBBL

$\dagger_A$  = S. D. of NABIL

$\dagger_B$  = S. D. of NBBL

Similarly, the other correlation coefficient are presented in Table 4.22

**Table 4.19**

**Correlation coefficient between C. S. of various banks.**

	NABIL	SCBL	HBL	NBBL	EBL
NABIL	1	0.8861	0.7485	0.6916	0.8770
SCBL		1	0.9824	0.6883	0.9925
HBL			1	0.994	0.9169
NBBL				1	0.910
EBL					1

In the above table, there is all positive correlation. There is no perfectly positive or negative correlation. So, the risk can be reduced to an extent by investing into a portfolio. It is better to make the combination of stocks whose correlation of returns is more close to zero.

#### 4.7 Portfolio analysis

Portfolio theory gives the concept of diversification of risk by investing the total funds in more than one type of assets or stocks. The concept of portfolio theory was developed by

Professor Harry M. Markowitz. Markowitz explained that the risk could be reduced without losing considerable return by investing into a portfolio. By investing into a portfolio, the investor can diversify the unsystematic risk up to the level of zero. For an example, the risk can be minimized by investing in the C. S of NABIL and SCBNL rather investing only in NABIL or in SCBNL. In making a portfolio investment, the total fund is divided into proper amount or weights for different securities (in our study C. S. of different banks). The total weight of a portfolio equals to 100%.

#### 4.7.1 Diversification of risk by investing into a portfolio

Investing common stocks of various banks could do the risk diversification. Here, the portfolio of the common stock of sampled banks is analyzed based on equal weight given to each bank and weight given according to their proportion on market capitalization. Table 4.24 and 4.25 shows the calculation.

**Table 4.20**

**Calculation of expected return of sample bank based on equal weight**

Banks	Expected Return (a)	Proportion of fund Invested (b)	Expected Return Weight (a X b)
NABIL	0.1929	1/5	0.028
SCBL	0.2059	1/5	0.029
HBL	0.2356	1/5	0.0337
NBBL	0.2117	1/5	0.030
EBL	0.3957	1/5	0.057
		Expected Return	0.2714

Therefore, portfolio's expected rate of return=0.2714 or 27.14%

**Table: 4.21**

**Calculation of expected return of sample bank based on proportion of market capitalization.**

Banks	Expected Return	Weight	Expected Return Weight
NABIL	0.1929	0.1912	0.037
SCBL	0.2059	0.2947	0.061
HBL	0.2356	0.1898	0.0447
NBBL	0.2117	0.0686	0.0145
EBL	0.3957	0.0742	0.029
		Expected Return	0.2182

Therefore, Portfolio's expected return=0.2182 or 21.82%

From the above tables, 4.20 and 4.21 the portfolio return is calculated on the basis of fund invested and on proportion of market capitalization. The portfolio return on the basis of fund invested is 27.14% and on the basis of proportion of market capitalization is 21.82%. From the above calculations it's clear that the portfolio return on the basis of proportion of market capitalization is slightly higher. But as per individual return the expected return of EBL is higher in comparison with other sample banks. But as investing only in an individual stock is riskier than investing in a portfolio so, It's recommended to invest in a portfolio. As the portfolio return on the basis of proportion of market capitalization is higher the second portfolio is an efficient portfolio and considered as a good one from an investors point of view.

**Calculation of Expected Return between NABIL and SCBL:**

Bank	Expected Return (a)	Proportion of fund Invested	Expected Return X Weight (a X b)
NABIL	0.1929	½	0.09645
SCBNL	0.2059	½	0.10295
		Expected Return	0.1994

Therefore Portfolio's Expected Rate of Return = 0.1994 i.e. 19.94%

**Calculation of portfolio risk between NABIL and SCBNL:**

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

$$\sigma_p = \sqrt{(0.8963)^2 (0.5)^2 + (0.4275)^2 (0.5)^2 + 2 \times 0.5 \times 0.5 \times 0.20}$$

$$\sigma_p = 0.5886$$

$$\sigma_p = 58.86\%$$

Therefore, the portfolio risk between the common stock between NABIL and SCBNL is 58.86% which can be considered as a higher risk.

**Calculation of Expected Return between HBL and NBBL:**

Bank	Expected Return (a)	Proportion of fund Invested	Expected Return X Weight (a X b)
HBL	0.2356	½	0.1178
NBBL	0.2117	½	0.1058
		Expected Return	0.2236

Therefore Portfolio's Expected Rate of Return = 0.2236 i.e. 22.36%

**Calculation of portfolio risk between HBL and NBBL:**

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

$$\sigma_p = \sqrt{(0.5984)^2 (0.5)^2 + (0.8210)^2 (0.5)^2 + 2 \times 0.5 \times 0.5 \times 0.29}$$

$$\sigma_p = 0.6348$$

$$\sigma_p = 63.48\%$$

Therefore, the portfolio risk between the common stock between HBL and NBBL is 63.48% which can be considered as very high.

**Calculation of Expected Return between EBL and NABIL:**

Bank	Expected Return (a)	Proportion of fund Invested	Expected Return X Weight (a X b)
EBL	0.3957	½	0.1978
NABIL	0.1929	½	0.0964
		Expected Return	0.2942

Therefore Portfolio's Expected Rate of Return = 0.2942 = 29.42%

**Calculation of portfolio risk between EBL and NABIL:**

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

$$\sigma_p = \sqrt{(0.7610)^2 (0.5)^2 + (0.8963)^2 (0.5)^2 + 2 \times 0.5 \times 0.5 \times 0.359}$$

$$\sigma_p = 0.7246$$

$$\sigma_p = 72.46\%$$

Therefore, the portfolio risk between the common stock between EBL and NABIL is 72.46% which can be considered as very high.

In the above tables and calculations, the portfolios expected return of the sample banks is calculated separately along with their portfolio risk. From the above calculations it's seen that the portfolios expected return of NABIL and SCBNL, HBL and NBBL and EBL and NABIL is 19.94%, 22.36% and 29.42% respectively. Similarly, the portfolios risk between NABIL and SCBNL, HBL and NBBL and EBL and NABIL is 58.86%, 63.48% and 72.46% respectively. So as the portfolios expected return between the banks EBL and NABIL is highest than the other combination the portfolio between EBL and NABIL is best from the return point of view. Similarly as the portfolio risk between NABIL and SCBNL is lowest i.e. 58.86%, the combination of these two stocks is better from the risk point of view.

**Table: 4.22**

**Summary of results**

Particulars	Expected Return	S.D.	C.V.	Avg. SD
Banking industry	19.03%	0.4699	2.4693	-
Sample Bank (Equal Weight)	27.19%	0.7396	2.7210	0.7676
Sample Bank (Mkt. Capitalization)	21.82%	0.576	2.634	0.6623

$$\text{Average S.D.} = \frac{\sigma_1 + \sigma_2 + \sigma_3 + \sigma_4 + \sigma_5 + \sigma_6 + \sigma_7}{W_1 + W_2 + W_3 + W_4 + W_5 + W_6 + W_7}$$

$$= \frac{0.8963 + 0.4275 + 0.5984 + 0.8210 + 0.7610}{1/5 + 1/5 + 1/5 + 1/5 + 1/5}$$

$$= 0.7396$$

From the above calculation, the average risk (standard deviation) of the sample banks is calculated as 0.7676 i.e. 76.76% which is higher than the portfolio risk on the basis of equal weight i.e. 0.7396. Therefore the portfolio of the study is little riskier than the whole banking industry. On the other hand, the portfolio standard deviation on the basis of market capitalization is less i.e. 0.576 than the portfolio risk on the basis equal weight. So its better to invest on the basis of market capitalization than investing equally on all the securities of the sample banks.

#### **4.8 Major Findings**

The major findings in the course of this study are as under:

- The common stocks of listed commercial banks have been evaluated in terms of risk and return. The expected return on the common stock of Everest Bank Limited (EBL) is the maximum (39.57%). The expected return of Nepal Arab Bank Limited (NABIL) is found to be a minimum (19.29%). The minimum return is due to the decrease in share price and distribution of low amount of dividend per share.
- The risk is the chance of deviation of return from expected value. The risk has measured in this study by standard deviation of returns and C.V. of returns. The common stock of NABIL is more risky on the basis of S.D. But, on the basis of C. V., the common stocks of NABIL are more risky because it has highest C.V.
- From the study of pricing of securities based on CAPM, the over priced, under priced and correctly priced common stocks of commercial banks are found. The stocks of NABIL are over priced while the stocks of rest six banks are under priced. There are no stocks in equilibrium price, i. e. the stock market is not in equilibrium and all the stocks in the market are striving towards equilibrium. There is high difference in the expected return and required rate of return on common stock of NBBL while NABIL required rate of return is high than its expected rate of return.

- The correlation between the return of common stock of different banks has determined with the help of covariance. There is no perfect positive or perfect negative correlation between the stocks of two banks. HBL and NBBL have highest degree of positive correlation. While no banks has negative correlation but correlation between HBL and NBBL is almost zero so they seems better to construct portfolio having independent relation can reduce the total risk.
- On the basis of market sensitivity, the common stock of EBL seems to be the most volatile because it has the highest beta. The Beta of EBL is 1.729, which shows the change in market return by 1% brings the change in systematic return on common stock of EBL by 1.729%.
- On the basis of market capitalization the banking sector is in the highest position (Rs. 27147.42 million) and others sector are in the lowest position (Rs. 493.09 million). Similarly, SCBL is in the highest position (Rs. 5568.62 million) and EBL is in the lowest position (Rs. 1084.16 million) according to there inter bank market capitalization comparison.
- One does not see direct relationship between dividend and market price of stock. The study shows that cash dividend has no greater impact on prices of share but stock dividend resulted in heavy decrease in stock prices in various cases and in few cases the price have increased even the bonus shares are declared. The Dividend and market price have positive relationship with risk and return. MPS does not seem to be moving consistently with increase in Profit / Dividend.
- The risk and return of two portfolios has calculated consisting of sample banks based on equal weight given to each bank and weight given according their proportion on market capitalization. The portfolio returns, SD, CV based on equal weight found to be 27.19%, 0.7396 and 2.721 respectively. When return SD and CV of other portfolio based on Market capitalization found to be 21.82%, 0.576 and 2.634 respectively. By this we found that both portfolios return has more than the banking industries return without changing overall risk

significantly. By this, we also found that average SD of both portfolios is higher than the above stated portfolio. So, it seems to be positive portfolio effect.

- The study can assess the investors interested towards stock investment. The study shows that the investment should be made after analyzing the risk and return properly. Various statistical tools, which have explained can measure the expected return and risk of individual common stock and portfolios, by this study. Similarly, this study also shows the interested investors that diversification of fund by making a portfolio can reduce the unsystematic risk of individual security considerably. If investors select the securities for investment having negatively correlated stocks, the unsystematic risk can be reduced significantly. But the risk can't be reduced significantly if the investment is made on the stocks having high positive correlation.

There are various aspects of return and risk of common stocks. The lack of adequate information and poor knowledge is one of the aspects due to which the investor can not earn proper return even bearing the high risk. The frequent change in fiscal and monetary policy, tax policy and inflation also affect the level of risk and return of common stocks. Most of the Nepalese investors invest in single security due to which the level of risk may increase, and if they invest in more than one bank's common stock, they select the stocks on the basis of expectation and assumption that they will provide higher return at lower risk. But without analyzing the risk and return, higher return at low risk can't be expected.



## **CHAPTER-V**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary**

In recent days, risk and return is being central focus of finance. Before investment on any security the risk and return analysis is performed. Being the speculative nature, common stock is taken for analyzing risk and return.

The common stock is the most risky security. An investment in common stock of a company cannot ensure the annual fixed return. Dividends are paid to the stockholders only if there will be earning available to equity shareholders. In Nepal, there are not various types of securities but due to development of financial sector. There are sufficient common stocks for attracting Nepalese investors.

There is deep relationship between risk and return. Risk and return plays a vital role in the process of investment decision. However, the relationship between risk and return is described by investor's perceptions about risk and their demand for compensation. The investors will invest in risky assets only when he is assured of adequate compensation for risk bearing.

The main objective of this study is to analyze the risk and return of equity investment of Nepalese stock market and it is focused on common stocks of seven commercial banks listed in Nepal Stock Exchange Limited. In the course of this study, brief review of related studies has been performed. The collected secondary data has analyzed by using scientific methods and the tables, graphs, diagrams have used to present the data more clearly. The secondary data were collected from the NEPSE web site, Security Board of Nepal, journals and concerned banks. Both quantitative and qualitative analysis has been made to derive the conclusions. Finding of analysis is summarized and conclusions are drawn as follows:

## **5.2 Conclusion**

Nepalese stock market is in emerging state. The sufficient information about the stock market of Nepal is not available easily. So, people think that the stock market investment is a blind and they afraid of investing in common stocks. This study will enable investors to know about the stock market and process of choosing the common stock or creating them into a portfolio. The openness and liberalization in national economy is followed by the nation since the political change in 1990. The stock market has been developing gradually since then. However, due to the poor knowledge and inadequate information about stock market, the Nepalese investors are not able to analyze the risk and return on common stocks properly. In this light, my study covers a narrow but prospering banking sector.

## **5.3 Recommendation**

The following recommendations are prescribed on the basis of data analysis and major findings of this study.

- Most of the Nepalese investors are found to be investing in only single type of common stock through primary issue i.e. only on common stock of NABIL or only on common stock of NBBL etc. Investors should diversify their funds while investing to reduce the unsystematic risk. But making portfolio investment the stocks with higher return and negatively correlated should be selected and the portfolio revision is also necessary at certain interval of time to get best return at lower risk. From the study common stock of HBL is recommended to construct the portfolio for the investment to minimize risk and maximize return.
  
- Analysis of the market sensitivity of common stock guides in investment in stock market. It is better to invest the common stock of beta less than one i.e. defensive stock for that investor who does not eager to take high risk. But the higher return can't obtain in such investment. The under priced common stock should be purchased and the overpriced common stock should be sold. This study recommends selling the common stock of NABIL, which is over priced and purchase the common stock of rest banks, which are under priced.

- The stock market of Nepal is in emerging state and possible investors afraid of investing in secondary market. So, NEPSE needs to provide clear information about the process of investment, trading rules and regulations, etc. Similarly, NEPSE should develop effective information channel to provide the up to date information. The open cry system of trading can't help to develop the stock market in the modern age of digital technology. The recommendation to NEPSE is that it should take steps to establish the stock market in other main cities of the countries. The market is concentrated only in the capital city, which is the main difficulty in development of stock market.
  
- The financial institutions and companies should provide the real financial statements. The data provided by NEPSE and the company itself are different in some cases. It creates confusion to the possible investors about the actual financial condition of the company. The value of assets and liabilities should not be manipulated by the company to show the under profitability or over profitability.
  
- Government also should monitor the activities of stock markets. Manipulation by stockbrokers, the company itself should be controlled. The rules and regulations regarding stock market should be amended in time to time and the attempts should be made for implementation of the rules and regulations. The peace and political stability is the current burning issue of the country, which are the main elements of development of stock markets. So, the attempts should also be made to maintain peace and political stability of the country.
  
- The proper analysis of the individual stock, the industry and the whole market is essential to take an investment decision. The general knowledge about general economic condition, tax policy of government, peace and political situation is necessary which affect the price of share. Speculation of common stock may provide a good benefit rather investing for a long period.
  
- Banking sector is a service oriented sector which takes deposit from one person and lend to other but the banking sector has highest proportion of market

capitalization. So it is ironic that other industry has low market capitalization than banking sector. So it seems to be not lasting very long.