RISK AND RETURN ANALYSIS OF LISTED COMPANIES

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RECOMMENDATION

This is certify that the thesis

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

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VIVA-VOCE SHEET

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for the Master's Degree in Business Studies (MBS).

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DECLARATION

I hereby declare that the work reported in this thesis entitled **"Risk and Return Analysis of Listed Companies"** submitted to Lumbini Banijya Campus, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master of Business Studies (M.B.S.) under the supervision of Mr. Rajendra Lamsal Lumbini Banijya Campus, Tribhuvan University.

Nishan Babu Karki

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ABBREVIATION

AD	=	After the Death of Christ
ADB	=	Agriculture Development Bank
AGM	=	Annual General Meeting
CIT	=	Citizen Investment Trust
CRA	=	Credit Rating Agency
CO. Ltd	=	Company Limited
DPS	=	Dividend Per Share
EPS	=	Earning Per Share
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
HMG	=	His Majesty Government
MBS	=	Master in Business Studies
NEPSE	=	Nepal Stock Exchange
NIDC	=	Nepal Industrial and Development Corporation
NRB	=	Nepal Rastra Bank
NSTC	=	Nepal Security Training Centre
NYSE	=	New York Stock Exchange
SEBO/N	=	Security Board of Nepal
SEC	=	Security Exchange Centre
S.N.	=	Serial Number
NBBL	=	Nepal Bangaladesh Bank Ltd.
NIBL	=	Nepal Investment Bank Ltd.
HBL	=	Himalayan Bank Ltd.
SBI	=	Nepal SBI Bank Ltd.
NABIL	=	Nabil Bank Ltd.

CHAPTER-I
INTRODUCTION

1.1 Background

Although, Nepal is one of the agricultural dependent countries, it has to develop other sectors too to economic development as well as reduction of unemployment. 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 tool of decision-making and covers the acquisition, utilization, control and administration of funds. Such - of study and analysis is performed through managerial finance. "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.

All investors seek for the returns to purchase any securities but the risk is also associated with it. So, both are considered as factors in investment. 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.

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

(NEPSE) 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." 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 corporate, its financial position and about the stock market because

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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 the accurate price of the stock. 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 analyze various aspects of return and risk of common stock investment of NEPSE listed companies.
- To analyze the relationship between dividend and market price of stock with reference to their risk and return
- To analyze portfolio risk and return of banking companies
- To find the over-priced, under-priced and correctly priced (equilibrium priced) common stocks of commercial banks

1.5 Significance 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

Every research has its own limitations. Mainly this study is made for the partial fulfillment of M.B.S. level. Other different limitations are as follow:

- The result of this study can not be generalized.
- The data of fiscal year 2003/04 to 2007/08
- Only 5 commercial bank has been selected as sample.
- The reliability of conclusions of this study is based upon the accuracy of secondary data.

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, Conclusion 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 recommendation.

The Annexes and Bibliography are incorporated at the end of this study.

CHAPTER-II

REVIEW OF LITERATURE

The primary focus of the study is to analyze risk and return. The main reason behind reviewing the literature is to develop some expertise in ones area, to see what new contributions can be made to receive some ideas for developing a research design. Thus, previous studies can not be overlooked because they provide foundation and ideas to the present study.

Theoretical aspects of return and risk are explained in this chapter. Further, some books, journals, articles and previous thesis papers have been reviewed, which are related to this field of the study.

2.1 Conceptual Framework

Review of books deals with the theoretical aspects of investment, return, risk, diversification etc. Various related books are reviewed below.

2.1.1 Investment

"Investment in its broadest sense means the sacrifice of current dollars for future dollars. Two different attributes are generally involved time and risk. The sacrifice takes place in present and is certain. The reward comes later, if at all, and the magnitude is generally uncertain" *(Sharpe, Alexander & Bailey; 1995: 72).*

"Real investment generally involves some kind of tangible assets such as land, machinery or factories. Financial investment involves contracts written on pieces of paper such as common stock and bonds. In the primitive economies most investment is of the real variety, whereas in a modern economy reach investment is of the financial variety" *(Sharpe; 1995: 73).*

2.1.1.1 Investment Process

The investment process describes how an investor should go about making decisions with regard to what marketable securities to invest in, how extensive the investment

should be, and when the investment should be made. The formal investment process includes: *(Sharpe; 2001: 73-74).*

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

Perform Security Analysis: It involves examining several individual securities or groups of securities within the broad categories of financial assets previously identified.

Construct a Portfolio: The third step in the investment process, portfolio construction, involves identifying those specific assets in which to invest, as well as determining the proportions of the investor's wealth to put into each one. Here the issues of selectivity, timing and diversification need to be addressed by the investor.

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

Evaluate the Performance of the Portfolio: It involves determining periodically how the portfolio performed, in terms not only the return earned but also the risk experienced by the investor.

2.1.2 Common Stock

"The common stockholders of a corporation are its residual owners; their claim to income and assets comes after creditors and preferred stock holders have been paid in full. As a result a stockholders return on investment is less certain than the return to a lender or to a preferred stockholder. On the other hand the return to a common

stockholder is not bounded on the upside as are returns to others" *(Van Horne; 2000: 121).*

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

2.1.2.1 The Risk on Common Stock

"In a world of uncertainty, expected return may not be realized. Risk can be thought of as the possibility that the actual return from holding a security will deviate from the expected return. The greater the magnitude of deviation and greater the probability of its occurrence, the greater is said to be the risk of the security" *(James C; 2000: 420).*

"Financial analysts and statisticians prefer to use a quantitative risk surrogate called the variance of returns, denoted by Var (r). The variance of an asset's rates of return equals the sum of the products of the squared deviations of each possible rate of return from the expected rate of return multiplied by the probability that the rate of return occurs" *(Clark; 1986: 115).*

$$\text{Var (r)} = \sum_{t=1}^{T} P_t [r_t - E(r_t)]^2$$

The square root of the variance of the rates of return is called the standard deviation [σ] of the rate of return.

$$\text{Standard Deviation } (\sigma) = \sqrt{\text{Var(r)}}$$

The standard deviation and the variance are equally acceptable and conceptually equivalent quantitative measures of an asset's total risk.

Sources of Investment Risk

Every investment involves uncertainties that make future investment returns risky (Clark; 1986). The sources of uncertainty that contribute to investment risk are:

i. Interest Rate Risk

It is defined as the potential variability of returns caused by changes in the market interest rates. If market interest rates rise or fall, then the investments' present value will fall or rise. Present value moves inversely with changes in the market rate of interest meaning that an increase in market interest rate results into a decline in present value of the security. Long term security's prices are more volatile in response to change in market interest rate. The interest rate risk affects the prices of bonds, stocks, real estate, gold, puts, calls, future contracts, and other investments as well.

ii. Purchasing Power Risk

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

iii. Bull-Bear Market Risk

It arises from the variability in market returns resulting from alternating bull and bear market forces.

iv. Investment Risk

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

the market index reaches a peak and starts a downward trend. The period during which the market declines to the next trough is called a bear market. Bull markets that usually rise more than enough to compensate for the bear market losses follow bear markets. But the alternating bull and bear market forces create a potential source of investment risk.

v. Management Risk

Errors made by business managers can harm those who invested in their firms. Forecasting management errors is difficult work that may not be worth the effort and, as a result, imports a needlessly skeptical outlook. Agency theory provides investor with an opportunity to replace skepticism with informed insight as they endeavor to analyze subjective management risks.

vi. Default Risk

Default risk is that portion of an investments' total risk that results from changes in the financial integrity of the investment. The variability of returns that investors experience as a result of changes in the creditworthiness of a firm in which they invested is their default risk.

vii. Liquidity Risk

Liquidity risk is that portion of an assets' total variability of return which results from price discounts given or sales commissions paid in order to sell the asset without delay. Perfectly liquidity assets are highly marketable and suffer no liquidation costs. Liquid assets are not readily marketable either price discounts must be given up by the seller in order to effect a quick sale.

viii.Callability Risk

Some bonds and preferred stocks are issued with a call provision. Issuers like the call provision because it allows them to buy back outstanding preferred stocks and/or bonds with the funds from a new issue if market interest rates drop below the level being paid on the outstanding securities. But, whatever the issuing company gains by calling in on issue is gained at the expense of the investors who have their securities called. That portion of a security's total variability of returns that derives from the possibility that the issue may be called is the callability risk. Callability risk commands a risk premium that comes in the form of a slightly higher average rate of return. This additional return should increase as the risk that the issue would be called increases.

ix. Convertibility Risk

Conversion is a contractual stipulation that is included in the terms of original security issue. This provision alters the variability of returns from the affected security. Convertibility risk is that portion of the total variability of return from a convertible bond or preferred stock that reflects the possibility that the investment may be converted into the issuer's common stock at a time or under terms harmful to the investors' best interests.

x. Political Risk

Political Risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the effects of various to improve their relative position increasing the variability of return from the affected asset regardless of whether the charges that causes political risk are sought by political or by economic interests, the resulting variability of return is called political risk if it is accomplished through legislative, judicial or administrative branches of the government. Political risk can be international as well as domestic.

xi. Industry Risk

Industry risk is that portion of an investments total variability of return caused by events that affect the products and firms that make up an industry. The stage of the

industry's life cycle, international tariffs and/or quotas on the products produced by an industry, product or industry related taxes, industry wise labor union problems, environmental restrictions, raw material availability, and similar factors interact and affect all the firms in an industry simultaneously. As a result of these commonalities, the prices of the securities issued by competing firms tend to rise and fall together.

The above-mentioned uncertainties are the major sources of investment risk. Moreover, there might be numerous minor sources of investment risk. The above said major sources are of additive nature which add up to total risk i.e. variance.

2.1.2.2 Return on Common Stock

Single Period Rate of Return

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

$$HPR = \frac{Ending\,Price - Beginning\,Price + Cash\,Receipts}{Beginning\,Price}$$

Holding period returns are often calculated for periods other than one year, for this reason, the length of the holding period must always be indicated for a specific HPR. Many HPRs over periods shorter or longer than one year are annualized. In general, if the length of the holding period is not specified, it is assumed to be one year.

"We could formulate probability distribution for the relative frequency of firm's annual returns by analyzing its historical returns over previous years. But we know that history never repeats itself exactly. Hence after analyzing relative frequencies of historical returns for the individual company we can form a probability distribution based on historical data plus or analysis for the economy, the outlook for the firm in

its industry and any other factors we doesn't reevaluate as inputs for our judgment" *(Weston and Brigham; 1992: 137).*

But this study has a limitation that it can't analyze the overall economy due to many constraints. The mean of historical returns is used for their measure.

Holding Period Return

Holding period returns measure mentioned above is useful with an investment horizon of one year or less. For longer periods, it is better to calculate rate of return as an investment yield. The yield calculation is present value based and this considers the time value of money." *(Van Horne; 2000: 168).*

HPRs are reported as an annual equivalent. One possible measure of annualized HPR might be the average of several HPRs such as:

$$\overline{\textbf{HPR}} = \frac{\sum_{t=1}^{r}(\text{HPR}_t)}{n}$$

However, the simple arithmetic averaging ignores the compounding effect that results if the first period's return is reinvested. In addition, the result of an arithmetic average return can be distorted if there are large differences in the rate of returns across time periods. Large differences in the periodic rates of return over longer investment horizons will cause the arithmetic rate of return to be misleading.

The geometric mean rate of return does not suffer from this flaw. The geometric mean rate of return, $\overline{\text{HPR}}_g$, is defined as the rate of return that would make the initial

investment equal to the ending investment value. Annualized rate of return is calculated as:

Annual Rate of Return (R) $= (1 + \text{HPR})^{1/n} - 1$

Required Rate of Return

"When setting the required rate of return on an investment, an investor must consider the real rate of return, expected inflation, and risk. Because consumption is foregone today, the investor is entitled to a rate of return that 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 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" *(Chiney; 1995: 113-115).*

The required rate of return is the minimum rate of return that an investor expects from his/her investment in risky assets. It is the function of real rate of return and risk. The required rate of return is the return on risk free assets i.e. government securities plus risk premium. It is determined by CAPM/SML.

The required rate of return using CAPM / SML is:
Required Rate of Return (K) $= R_f + (R_m - R_f)\beta$

Expected Rate of Return

"If an investment is to be made, the expected rate of return or the expected holding period return, should be equal to or greater than the required rate of return for that investment. The expected rate of return is based upon the expected cash receipts (e.g. dividends or interest) over the holding period and the expected ending or selling price. The expected rate of return is an ex-ante or unknown future returns. Unless the real

rate of return is guaranteed, most investor recognizes this possible rate of return into a single number called the expected rate of return" *(Cheney and Moses; 2000: 153).*

If the investor can describe the possible variables that will influence each of the possible rates of return and assign probabilities to these outcomes, the expected rate of return should equal the weighted average of the various possibilities. Listing the possible investment results and assigning probabilities to each of these outcomes is the same as creating a probability distribution in statistics. Probability distributions are used to describe possible outcomes and to assign individual probabilities, from zero (no chance of occurring) to one (full certainty that the outcome will happen), to each possible outcome.

The investor has forecast possible outcomes, each based upon a possible state of the economy. Each economic state will result in a different expected rate of return. Subjective probabilities are assigned to each outcome. The overall expected rate of return, E(HPR) can be calculated as a weighted average of the these forecasts:

$$E(HPR) = \sum_{j=1}^{n} Pj \times HPRj$$

2.1.3 Portfolio and Diversification Analysis

"Investment positions are undertaken with the goal of earning some expected rate of return. Investors seek to minimize inefficient deviations from this expected rate of return. Diversification is essential to the creation of an efficient because it can reduce the variability of returns around the expected return" *(Clark; 1986: 264).*

"The portfolio manager seeking efficient investments works with two kinds of statistics – expected return statistics and risk statistics. The expected return and risk statistics for individual assets are the exogenously determined input data analyzed by

the portfolio analyst. The objective of portfolio analysis is to develop a portfolio that has the maximum return at whatever level of risk the investor deems appropriate" *(Clark; 1986: 264-265).*

The term portfolio simply means collection of investments. For an investor through the stock exchange will be a collection of shareholdings in different companies. For a property investor, portfolio will be a collection of buildings. To a financial manager with in an industrial company, portfolio will be a collection of real capital projects. It will be apparent that the actual nature of the components of a portfolio demands on the population of opportunities from which the selection has been made.

Portfolio management is the art of handling a pool of funds so that it not only preserves its original worth but also overtime appreciates in value and yields an adequate return consistent with the level of risk assumed.

Diversification is a risk management technique that mixes a wide variety of investments within a portfolio. It is designed to minimize the impact of any one security on overall portfolio performance. Diversification is possibly the greatest way to reduce the risk. This is why mutual funds are so popular.

The common saying "Don't put all your eggs in one basket" is the essence of the principle of diversification. Because all investments carry with them some level of risk, it is important to diversify and spread your money into many different investments.

Diversification is important for every investor. In fact, it is so important that in 1990, Harry M. Markowitz won the Nobel Prize largely for his work on diversification!

Diversification can help to reduce portfolio risk by eliminating unsystematic risk for which investors are not rewarded. Investors are rewarded for taking market risk. By choosing securities of different companies in different industries, we can minimize the risks associated with a particular company's bad luck. Diversification among companies, industries and asset classes affords the investor the greatest protection against business risk, financial risk and volatility.

Investments whose price movements are opposite each other are negatively correlated. When negatively correlated assets are combined within a portfolio, the portfolio volatility is reduced.

"There are some different diversification techniques for reducing a portfolio risk" *(Clark; 1986: 178).*

1. Simple Diversification

Simple diversification can be defines as "not putting all the eggs in one basket" or "spreading the risks". But it does not eliminate risk by creating a simple diversified portfolio.

2. Diversification across Industries

Diversification across industries calls for selection of securities in the portfolio from different industrial categories such as manufacturing, banking and financial services, utility, mining and so on.

Selecting security from different industrial category is important to achieve better diversification than random selection of securities because the securities in different industrial categories may be experiencing different rate of growth so that they might have lover correlation of returns.

The study made by Professor Lorie and Fisher regarding diversification across industries concludes that diversification across industries is not much better than

simple diversification. Further, increasing the number of securities above 8 does not result into significant benefits from risk reduction.

3. Superfluous Diversification

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

4. Simple Diversification across Quality Rating Categories

Quality ratings measure default risk – essentially the risk of bankruptcy. The highest quality portfolio of randomly diversified stocks was able to achieve lower levels of risk than the simply diversified portfolios of lower-quality stocks. This result reflects the fact that default risk (as measured by the quality ratings) is part of total risk. The higher quality portfolios contain assets with less default risk. This finding suggests that portfolio managers can reduce portfolio risk to levels lower than those attainable with simple diversification by not diversifying across lower-quality assets.

5. Markowitz Diversification

In 1952 Harry Markowitz published an article named "Portfolio Selection" in the journal of finance, which explained the analytical aspects relating to the formation of efficient portfolios.

Markowitz diversification may be defined as combining asset, which are less than perfectly positive correlated to reduce portfolio risk.

It can sometimes reduce the risk below undiversifiable level if optimum proportion of wealth is allocated into the assets.

Markowitz diversification asserts that lower the correlation among the assets return, larger will be he risk reduction.

2.1.4 Systematic Risk vs. Unsystematic Risk

2.1.4.1 Systematic Risk

Systematic risk is the variability of a security's return with that of the overall stock market. It is also called unavoidable risk. It is measured by beta. The beta of a stock is the slope of the characteristic line between returns for the stock and those for the market. Beta depicts the sensitivity of the security's excess returns to that of the market portfolio. If the slope is 1, it means that excess returns for the stock vary proportionately with excess returns for the market portfolio. In other words, the stock has the same unavoidable or systematic risk as the market as a whole. A slope steeper than 1 means that the stock's excess return varies more than proportionately with the excess return of the market portfolio. Put another way, it has more systematic risk than the market as a whole. This type of stock is often called an "aggressive" stock. A slope less than 1 means that the stock has less unavoidable or systematic risk than does the market as a whole. This type of stock is often called a "defensive" stock *(Copeland; 1986: 302).*

"Changes in the economic, political and sociological environment that affect securities markets are sources of systematic risk. Systematic variability of return is found in nearly all securities to varying degrees because most securities tend to move together in a systematic manner" *(Clark; 1986: 321).*

2.1.4.2 Unsystematic Risk

It is the amount of a stock's variance unexplained by overall market movements. It can be diversified away. It derives from the variability of the stock's excess return not associated with movements in the excess return of the market as a whole.

"Events such as labor strikes, management errors, inventions, advertising campaigns, shifts in consumer taste, and lawsuits cause unsystematic variability in the value of a market asset. Since unsystematic changes affect one firm, or at most a few firms, they must be forecast separately for each firm and for each individual incident. Unsystematic security price movements are statistically independent from each other, and so they may be averaged to zero when different assets are combined to form a diversified portfolio. Therefore, unsystematic risk is also called diversifiable risk *(Clark; 1987: 361).*

Figure 2.1

Risk and Diversification

Risk & Diversification
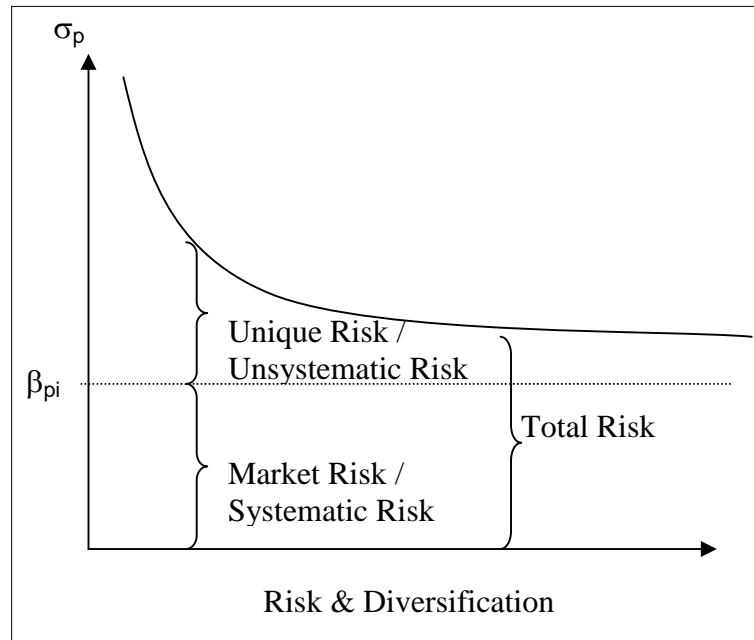
2.2 Review of Journals and Articles

In the field of finance in Nepal it is very difficult to get advanced and research based journal. There are very limited numbers of journals available in the subject of management and it is also hard to find any article in the subject matter of finance. Almost no articles about the risk and return analysis on common stock investment are found.

Hence some foreign well known recently published journals of finance has been reviewed here. However, it helps to build the conceptual framework on this topic.

Elton, Edwin J. (May 1999), has studied on "*Expected Return, Realized Returns and Assets Pricing Tests*" with the objectives to find out the factors that affect expected return on assets, to find out the sensitivity of expected return to those factors, and the reward for bearing this sensitivity. There is along history of testing in this area and it is clearly one of the most investigated assess in finance.

Almost all of the testing being aware of using realized returns as a process for expected returns. The sue of a average realized relies on a belief that information

surprises tent to out over the period of a study and realized returns are therefore an unbiased estimate of expected returns. However, he believes that there is ample evidence that there is ample evidence that this belief is misplaced. There are period's longer than 10 years during which stock market realized returns are one average less than the risk free rate (1973 to 1984). There are periods longer than 50 years in which risk long term bonds on average under perform the risk free rate (1927 to 1981). Having a risky asset with expected return above the risk less rate is an extremely weak condition for realized returns to be and appropriate process for expected return, and 11 and 50 years is an awful longtime for such a weak condition not to be satisfied. In the recent past, the United States has had stock market returns of higher than 30% per year while Asian Markets have had negative returns.

Rouwenhast, Geert K. (August 1999), has studied "*Local Return factors and Turnover in Emerging Stock Markets*", with the objective to examine the sources of return variation in emerging stock markets.

He attempts two set of question to answer. The first set of three questions concern the existence of expected return premiums. (i) Do the factors that explain expected return difference in developed equity markets also describe the cross section or expected returns of emerging market firms?(ii) Are the returns factors in Emerging markets primarily local or they have global components as well? (iii) How does the emerging market evidence contribute to the international evidence form developed markets that similar return factors are present in markets around the world? The set of questions of the paper include, (iv) is there a cross sectional relation between liquidity and average, returns in emerging markets? Are the return factors in emerging markets cross sectional correlated with liquidity?

Total returns are calculated in the sum of the dividend return and price appreciation using prices scaled by a capital adjustment factor, which the IFC computers to correct for price effects associated with stock splits, stock dividends and rights issues. Many emerging market have firms with multiple share assess are treated as a single value weighted portfolio of the outstanding equity securities. In this paper, Roowenhorst has been made detail analysis of the data and he interprets the result in each section. Lastly, he has concluded his findings as "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 market stocks exhibit momentums. There is no evidence that local market betas are associated with average returns. The low correlation between the country return factors suggest that the premium have a strong local character. Furthermore, global exposure cannot explain the average factor returns of merging market. This 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 separated from those drives the difference between expected return within these markets. A Bayesian analysis of Premiums in developed and emerging markets shows that unless one has strong prior belief to the contrary. The empirical evidence favors the hypotheses that size, momentum and values strategies are compensated for in expected returns around the world. Finally, the paper documents the relationship between expected returns and share turnover and examines the turnover characteristics of the local factors portfolios. There is no evidence of relation between expected returns and turnover, in emerging markets. However, beta, size momentum and value are positively cross sectionally correlated with turnover in emerging markets. This suggests that return premium do not simply reflect a compensation for liquidity.

Shrestha, Manohar Krishna (Oct. 1995), has studied on "*Shareholder's Democracy and Annual General Meeting Feedback*", with the objective to find the views on the rights of the shareholders regarding how they can exercise them in democratic perspective, and the issues raised by shareholders at different annual general meeting of the public limited companies and financial institutions.

Writer has found the overall shareholders democracy in terms of the protection of their interest, is basically focused on the payment of satisfactory wealth by appreciating the value or share they hold.

In many cases the existing authoritarian mentality of management seems to have not considered the share holders in deciding managerial plans and policies. Top level decision often by pass the interest of shareholders. As the management lacks serious concerns about the protection of shareholders rights and expectations. The annual general meeting has become a plate-form for shareholders to express their opinions and grievance in front of the management and board of directors.

Many general meeting feedback reveal no serious response so the feelings of shareholders. Thus it reflects unwillingness of the management and broad of director to change their traditionally held activities towards shareholders.

Shrestha has expressed his deep concern to the government for not taking my initiative formulating the separate act which protects the shareholders right despite the increase in population of shareholders in Nepal and questioned the need of separate act are regarding the protection of shareholders right.

He has further quoted as writing company and other acts relating to financial and industrial sector have provisioned rights of the shareholders as: (1) voting rights, (2) participation in general meeting, (3) rights of getting information, (4) Electing as aboard of director, (5) participation in the profit and loss of the company, (6) transferring share, (7) priory representation.

The collective rights or the shareholders are
1) Amend the internal by laws
2) Authorized the sales of assets
3) Enter into merger
4) Change amount of authorized capital

As reviewed above, Nepalese stock being in emerging state; study conducted previously in Nepal in relation with the subject was no in specific issues but in broad manner. An article published in business age by Nawaraj Pokharel (Oct.-Nov. 1999) "*Stock Market Doing Pretty Well*" is reviewed here.

In this article he has found that the investment on the shares of manufacturing and processing was more attractive than of the banks. He found that the share of individual companies showed very good performance from October 1998 to 1999. NEPSE index showed upward trend for all the shares in this period. He gave following reasons behind the appreciation of share price.
    a. Companies have rewarded shareholders.
    b. Reduction of interest rate of money market.

c. Healthy speculation and loan has made the market interesting by providing loan to the stock investors their share as collateral.

d. Investors are appearing more rational in their investment decision.

Finally, the concludes that the capital market needs more infrastructure investment than institution investment once the required infrastructure can facilitate the market, the size of the market could be made even bigger by introducing new instruments such as government bonds.

Ghimire, Atma Ram (June 2001), has studied *"Nepal share market and investors prospect"* with the objective to trace out the important trends our capital market.

He has concluded that the Nepalese share price is decreasing because of many unbalanced factors. The major reason behind the movement in the index is the domination of the banking sector script in the Nepalese stock market transactions. Mismanagement practices cannot help the growth of share market. The general public has invested recklessly. They just believe what one broker or the investor says about scrip. On of the prime motives for the investment is to earn return on it. Finally he concludes that the general investors should be alert and aware of the situation. They must receive the financial information before they make investment and act rationally.

Similarly, Poudel, Narayan Prasad (2001), also carried out another study in a topic of *"Investing in Shares of Return and Risk Elements"*. The study was based on the data collected for eight banks from mid July 2001. The main objectives of the study was to determine whether the shares of commercial banks in Nepal are over or under priced by analyzing risk and return characteristics of the individual share.

Poudel summarized the following finding:
a. Most of the individual share's appeared to be defensive as beta coefficients were less that on low data shares were less volatile than market as a whole. Only the return of share of Bank of Kathmandu had beta coefficient of greater than one, indicating that the share was more risky than the market.

b. Nepal Arab Bank Ltd., Nepal Indosuez Bank Ltd., Himalayan Bank Ltd. Had higher expected equilibrium return than expected rate or return. And standard

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Chartered Bank Ltd., Nepal SBI Bank Ltd., Nepal Bangladesh Bank Ltd., Bank of Kathmandu Ltd. Had lower equilibrium return than expected rate or return.

   c. From this study we get Nepal Arab Bank Ltd., Nepal Indosuez Bank Ltd. And Himalayan Bank Ltd. was overpriced and other were under priced.

2.3 Review of Thesis

However risk and return is not a new concept for financial analysis, in context of Nepal and its very slow growing capital market, few studies are made regarding this topic. Some studies related to the topic of risk and return has been conducted for the fulfillment of master degrees in T.U. In this study only relevant subject matters are reviewed which are as follows.

Manandhar, Manilata (2003), has made her Master's thesis on "*Analysis of Risk and Return Analysis on Common Stock Investment*" with special reference to five listed commercial banks. The main objective of the study is to examine risk and return of common stock in Nepalese stock market, the study is focused on the common stock of commercial banks.

The major findings of Manandhar were;
   a. "Banking industry is the biggest one in F/Y 057/058 in terms of market capitalization and turnover expected return of the common stock of BOKL is maximum (i.e. 1.1267) due to effect of unrealistic annual return and Capital Structure of NIBL is found minimum. In the context of industries, expected return on banking sector (i.e. 67.39) is highest and other sector is the least (0.65%).
   b. Expect NIBL, other banks other banks common stocks are more volatile (aggressive with market stocks). All banks in the study are said to be under priced. Capital Structure of BOKL is most risky and Capital Structure is least risky.
   c. Stocks have greater volatility risk than other investment, which take a random and unpredictable path. Stock market is risky in the short term and it is necessary to prepare the investors for it.

d. One of the most important things to consider when choosing investment strength is the balance between risk and return that you are comfortable with Investors should diversify their fund to reduce risk with the help of optimal portfolio concept.

e. It is better to say something that is going up and sell something that is going down.

f. Investor's attitude, perception and risk handling capacity also play essential role is rational investment decision.

Khadka, Ram Hari (2004), has made his Master's thesis on "*Analysis of Risk and Return on Selected Nepalese Commercial Banks listed in NEPSE*" with special reference to 7 listed commercial banks is also relevant to this study. The main objective of the study is to analyze the risk, return and other relevant variables that help in making decision about investment on securities of the listed commercial banks. This study will also target to determined whether the share of commercial banks are correctly priced or not by analyzing the required rate of return using the CAPM.

Khadka addressed the following findings in risk return behavior from the analysis of different stock.

a. The share of Bangladesh Bank offered highest realized rate or return. Amongst them NABIL bank is the lowest having 5.23% which is less than required rate or return. NBL, which is hard hit by the events (Return = -0.8809), the ranking of the bank is placed as the highest return earner. The study showed that the realized rate or returns of the samples banks do not have the some features being with in the range of 5.23% to 16.12%.

b. Return on the average tock is 5.51% over the period. All the shares under review generated higher rate of return than the market portfolio except NABIL Bank Ltd. The price of shares of banks under review except NABIL Bank Ltd. are under priced. The unsystematic risk of NBL is the highest one amongst the shares under review which is 95.59% and SCB of Nepal has the lowest one being 45.14%. The negative correlation coefficient of NBL (-0.21) revealed that the return on the bank goes down if the market goes up. The rest of the shares moved in the direction the market moves. By observing the individual shares beta coefficient, most of the shares appear to be defensive as beta

coefficient are less than one. However, beta of the stocks NB bank SCB are greater than one indicating that the shares are more riskier than the market..

On the basis of finding, Khadka concluded that in Nepalese capital market, the contribution of real sector is negligible. Though the shares of commercial Banks of Nepal are heavily traded in NEPSE, none of the share NABIL Bank will have positive trend towards the equilibrium.

Manandhar, Surendra (2005), has made his Master's thesis on "*A Study of Risk and Return Analysis on Common Stock Investment*" with special reference to six listed commercial banks. The main objective of the study is to evaluate common stock of listed commercial bank in terms of risk and return and to perform sector wise comparison on the basis of market capitalization, to identify whether the share of commercial banks are overpriced, under priced or at equilibrium price, to identify the correlation between returns of commercial banks, & to construct optimum portfolio from listed common stock.

Major findings of the study are as follows:
   a. The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on the common stock of EBL is maximum (44.44%) which is very high rate of return. in reality this rate exists only due to effect of unrealistic annual return because of the issues of banks share and increase in share price. Similarly expected return of the NIBL is found minimum (24.21%).
   b. Risk is the variability of return which is measured in terms of standard deviation on the basis of S.D. common stock of NSBI is most risky since it had high S.D. and C.S. of NIBL is least risky because of its lowest S.D. on the other hand, we know that coefficient of variation is more rational basis of investment decision. Which measures the risk per unit of return on the basis of CV; CS of NIBL is the best among all banks. NIBL has 1.4977 unit of risk per 1 unit of return. But CS of SBI has the highest risk per unit return i.e. 3.5495.
   c. Diversification of fund by making a portfolio can reduce unsystematic risk of individual security significantly. If investors select the securities for investment, which have highly negative correlation of returns, the risk can be

returns of two stocks in highly positive, risk reduction is not so significant. So, portfolio between the C.S. of same industry cannot reduce risk properly. In this study, SBI and EBL have negative correlation between their returns, which is favorable with the viewpoint of the diversification. And all other banks have positive correlation among their returns. So, the portfolio construction among their returns. So, the portfolio construction of the common stock of these banks will not completely reduce any risk, which is not favorable as portfolio construction is concerned.

Baniya, Ramji (2007), Has made his Mastrer's Degree thesis on "Risk and Return Analysis on Common Stock Investment of Commercial Banks listed in NEPSE". Baniya's study is concerned on Risk and Return Analysis of Common Stock of sampled commercial banks of Nepal.

Baniya addressed the following findings in risk return behaviours from the analysis of different stock.

a. Over the period included in the sample for study, the share of EBL offers the highest average rate of return where as the share of HBL offers the lowest rate of return. The different shares have different rate of returns ranging from 18.45% to 30.93%. On the basis of average rate of return, the share of EBL seems to be the best for the investment. Considering the overall market, however the shares of all the commercial banks are attractive for investment.

b. Correlation between the returns of the common stock of NABIL with HBL, SCBNL, EBL, NIBL, and BOK is 0.9446, 0.8651, 0.9991, 0.5604 and 0.8980 respectively. Likewise, correlation between the returns of stock of HBL with SCBNL, EBL, NIBL and BOK 0.9750, 0.9290, 0.7673 and 0.9759 respectively. Correlation between returns of the stock of SCBNL with EBL, NIBL and BOK is 0.8409, 0.7917 and 0.9326 respectively. Correlation between the returns of the stock of EBL with NIBL and BOK is 0.5302 and 0.8817 respectively. Similarly correlation between the returns of the stock of NIBL and BOK is 0.8369.

c. Out of total risks, the unsystematic risks of NABIL, HBL, SCBNL, EBL NIBL and BOK are 7.94%, 2.60%, 9.40%, 10.37%, 56.58% and 10.99% respectively.

Rana, Ravi (2009) has made his Master's Degree Thesis on "Risk and Return analysis of common stock investment". Rana's study is concerned on Risk and Return Analysis of common stock investment of commercial banks in Nepal.

Rana pointed out the following findings in risk return behaviours from the analysis of different stock.

a. Nabil Bank appears to be aggressive stock as beta coefficient more than one, it indicates that the share are more risky that the market. Himalayan Bank, Standard Chartered Bank and Everest Bank appear to be defensive stock as beta coefficient are less than one, it indicates that the share are less risky that the market . All stocks have positive alpha value. All the stocks can generate income even market does earn nothing.

b. Maximum return of Nabil Bank under the review period is 129.91% in year 2063/64 where as the same period market has highest return that is 80.31%. Maximum return of Everest Bank under the review period is 76.94% in year 2063/64 where as Himalayan Bank has lowest return that is 4.73% in the year 2059/60.

c. Based on the standard deviation of the returns on stocks, the stocks of Nabil Bank can be considered as high-risk securities. The standard deviation of the returns on stocks of Himalayan bank is the lowest one. However, the realized rate of returns are not the same and in such case the used of standard deviation may not provide meaningful basis for meaningful risk. Looking at the coefficients of variation, the stocks of Everest Bank has the lowest risk per unit of return, the highest being with the stocks of Nabil Bank. The systematic part of the total risk is due to the individual stocks correlation coefficient with the market portfolio. All the stocks have systematic risk less than total risk. Only a portion of the total risk is rewarded by the bank share's returns and the unrewarded portion of the risk is the unsystematic risk. The unsystematic risk with the stocks of Standard Chartered Bank is highest and the stock of Himalayan is lowest in review period.

d. Returns on all the stocks have positive correlation with the returns on market. However, the correlation coefficient ranges from -1 to +1 which indicates that return on individual stocks move less than the proportionate movements of the returns on market portfolio consisting of all shares.

Research Gap

Although some previous MBS students have conducted their thesis in the similar topic the present researcher has selected, there is fundamental difference between those and

this present one. The previous researcher focused only on the risk and return aspect of selected commercial banks from investors perspectives. This research has further tried to identify the correlation among returns of the commercial banks under study which plays a significant role in risk reduction by portfolio construction and systematic and unsystematic risk has been identified for each bank which is not done by previous researchers.

Most of the previous researches reviewed have been carried out with less than seven year data. Here, in this research seven year's data has been taken for analysis. Similarly, the number of sample firms takes by the previous researchers is five or more. But this research has been conducted with reference to three sample firms which give the clear vision for all the investors who invest in common stock investment of commercial banks listed in NEPSE. However, almost effort has been put upon to save it from allegation of being copy of previous research works done in the similar topic.

CHAPTER-III
RESEARCH METHODOLOGY

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 rational 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

"A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure" (Kothari, 1990: 39). Research design is a plan, structure and strategy of investigation conceived. So as to obtain answer to research question historical and analytical research design have been used.

3.2 Population and sample

All the listed companies in NEPSE (231) are the population for this study. But this study is concentrated in listed commercial banks (23) only. So, five listed commercial banks are randomly selected for the study.

3.3 Sources and collection 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, market capitalization, and movement of NEPSE index have taken from related web sites and reports. 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 analysis tools

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

3.4.1 Dividend

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 –

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

Where,

MPS = Market price per share

3.4.2 Stock price

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.

3.4.3 Holding period return

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.

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

3.4.4 Expected rate of return

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.

Mathematically,

If historical returns are taken-

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

If probability distribution is taken-

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

Where,

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

n = no. of years that the return is taken

R_j = Return on

P_i = Probability of returns

3.4.5 Standard deviation

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. Total risk refers to the deviation of returns from expected return of investment. S. D. is calculated as follows:

When historical data is used-

$$\dagger_j = \sqrt{\frac{\Sigma\left(R_j - \overline{R}_j\right)^2}{n-1}}$$

When probability distribution is used-

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

Where,

P_i = Probability of returns

R_j = Return on stock j

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

3.4.6 Coefficient of variation

"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:

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

Where,

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

3.4.7 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. 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,

$$\text{S}_j = \frac{COV(R_j R_m)}{\dagger_m^2}$$

Where,

S_j = Beta coefficient of stock j

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

return of market

$$= \frac{\sum\limits_{j=1}^{n}(R_j - \overline{R}_j)(R_m - \overline{R}_m)}{n}$$

$\dagger_m^2$ = Variance of market return

Beta of stock j is its systematic risk i.e. $COV(R_j R_m)/\dagger_m$ expressed in units of market risk $(\dagger_m)$. 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 $\dagger_m$.

Beta coefficient may be used for ranking the systematic risk of different assets. If the beta is larger than one, $\text{S} > 1$, the asset is more volatile than the market and is called an aggressive asset. If the beta is less than one, $\text{S} < 1$, 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.

3.4.8 Correlation coefficient (ρ_{ij})

The correlation coefficient measures the direction of relationship between two sets of figures. 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, σ_i and σ_j are the standard deviations of returns for asset i and j and ρ_{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.

3.4.9 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.

3.4.9.1 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. 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-

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

Where,

$\overline{R}_P$ = 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 %

3.4.9.2 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 variables 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

3.4.10 Minimum variance portfolio

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

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

3.4.11 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 at time

R_m = Return on market

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 a 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 are in operation up to 2004/05. But only fifteen banks are listed in NEPSE. This study has been focused only on five 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. Nepal Investment Bank Ltd.
2. NABIL Bank Ltd.
3. Himalayan Bank Ltd.
4. Nepal SBI Bank Ltd.
5. Nepal Bangladesh Bank Ltd.

4.1.1 Nepal Investment Bank Ltd. (NIBL)

Nepal Investment Bank Ltd. was incorporated in the year 2042 B. S. (1985 A. D.) with the name Nepal Indosuez Bank Ltd. It was the third joint venture bank and managed by Banque Indosuez, Paris in accordance with joint- venture and technical service agreement signed between it and Nepalese promoters. At present, the bank is

operating under the full ownership of Nepalese promoters and shareholders. The bank was listed in NEPSE on 05/08/2044 BS. The Authorized capital is Rs. 590,000,000, issued capital and is Rs. 2495,293,000 and Paid up capital is Rs. 255,293,000. The Face value of a share is Rs. 100 and no. of shareholders is 2780 respectively.

4.1.1.1 MPS and DPS of the bank

The Highest, Lowest and closing MPS and DPS of NIBL has shown in table no. 4.1 and year-end price movement has shown in figure 4.1.

Table 4.1
MPS and Dividend

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2003/04	980	551	822	30	----------	30
2004/05	1415	822	1401	25	----------	25
2005/06	2730	1080	1150	0	1:1	760*
2006/07	1150	575	760	0	----------	0
2007/08	890	635	795	20	40%	376**

Source: NEPSE Annual Reports

*0 + 1 x 760 = Rs. 760

**20 +0.4 x 940 = Rs.376

 Note: The closing MPS for 2008/09 was Rs.940

Year-End Closing Price Movement
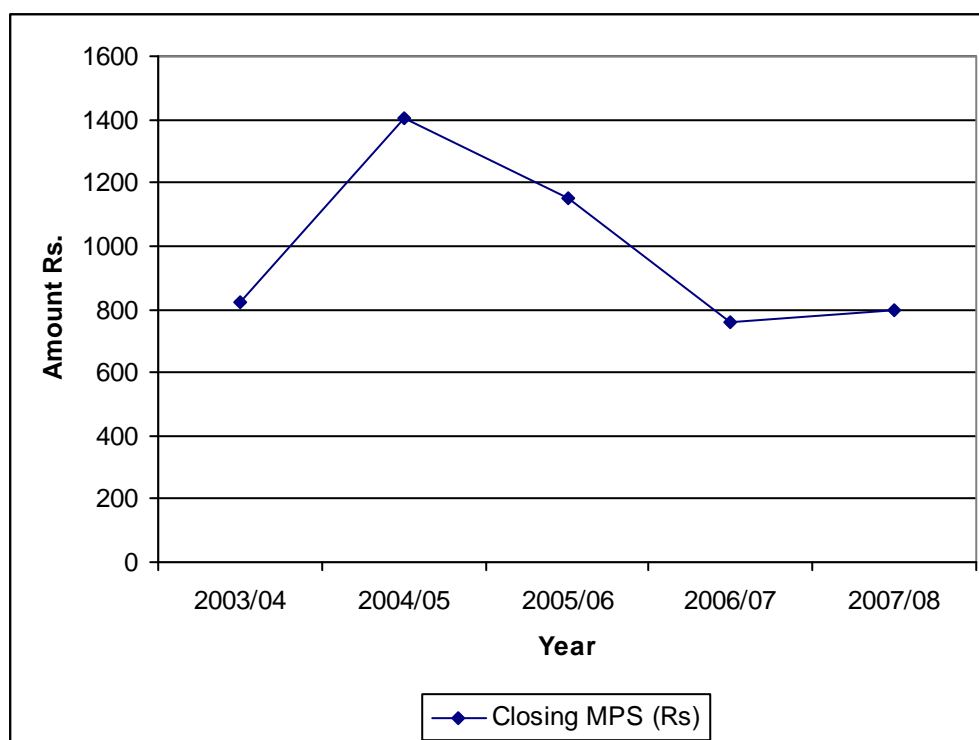
Figure 4.1

The price is the maximum in the fiscal year 2004/05 A.D. and lowest in the fiscal year 2006/07.The price is in decreasing trend 2004/05 to 2006/07 and thereafter it is in increasing trend.

4.1.1.2 Realized return (R), standard deviation (σ) and expected return $(\overline{R})$

The realized rate of return has calculated by 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 standard deviation.

Fiscal Year	Closing MPS (Rs.)	Total Dividend (D) (Rs.)	$R = \dfrac{D_t + (P_{tt} - P_{t-1})}{P_{t-1}}$	$(R - \overline{R})$	$(R - \overline{R})^2$
2003/04	822	30	--------------------	--------	----------
2004/05	1401	25	0.7348	0.4099	0.1680
2005/06	1150	760	0.3633	0.0384	0.0015
2006/07	760	0	-0.3391	-0.664	0.4409
2007/08	795	376	0.5408	0.2159	0.0446
		Total	1.2998		0.6570

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We have,

$$\text{Expected Return}\left(\overline{R}\right) = \frac{\sum R}{n} = \frac{1.2998}{4} = 0.3249$$

$$\text{Standard Deviation}\left(\dagger\right) = \sqrt{\frac{\sum\left(R - \overline{R}\right)^2}{n-1}} = \sqrt{\frac{0.6570}{3}} = 0.4680$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{\overline{R}} = \frac{0.4680}{0.3249} = 1.4404$$
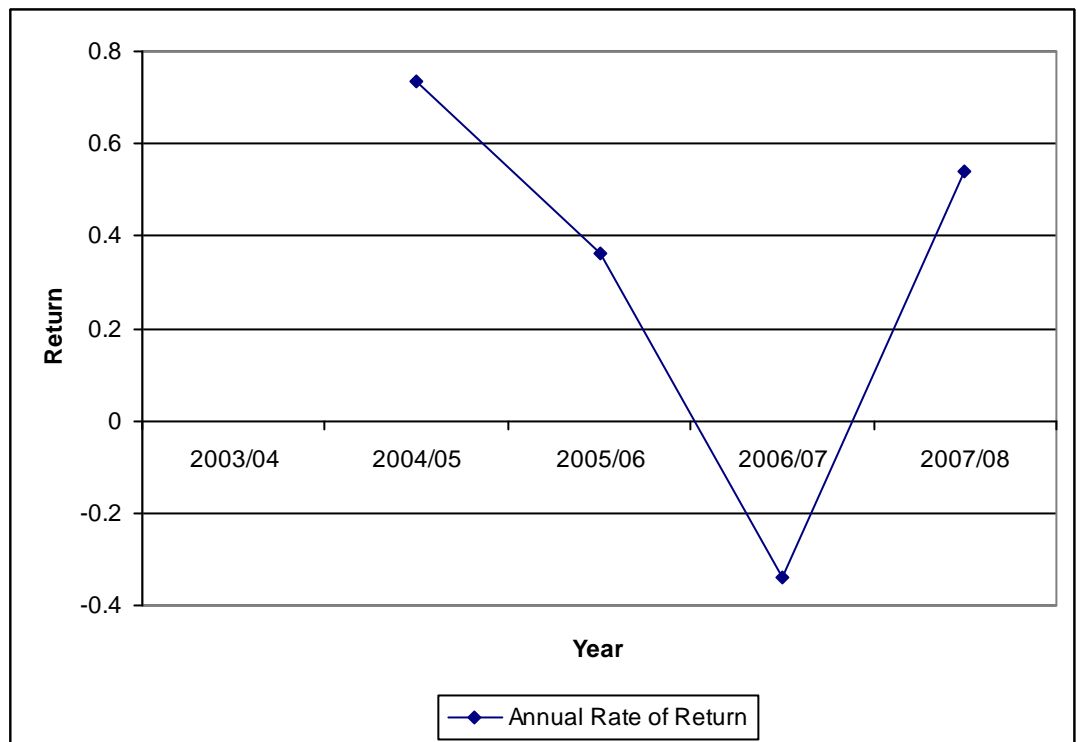
Annual Rate of Return

Figure 4.2

The above figure shows that the return of NIBL is in decreasing trend up to 2006/07 and in 2007/08 it has increased. The highest rate of return is in 2004/05 and lowest rate return is in 2006/07.

4.1.2 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.

4.1.2.1 MPS and DPS of the Bank

The Highest, Lowest and Closing MPS with DPS have shown in the following table no. 4.3. The movement of closing price over the period is presented in figure 4.3.

Table 4.3
MPS and Dividend

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2003/04	762	404	700	50	-----------	50
2004/05	1495	700	1400	55	-----------	55
2005/06	2301	1310	1500	40	1:1	775*
2006/07	1500	465	735	30	-----------	30
2007/08	1515	1000	1505	65	-----------	65

Source: NEPSE Annual Reports

*40 +1 x 735 = Rs.775

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

Year-End Price Movement
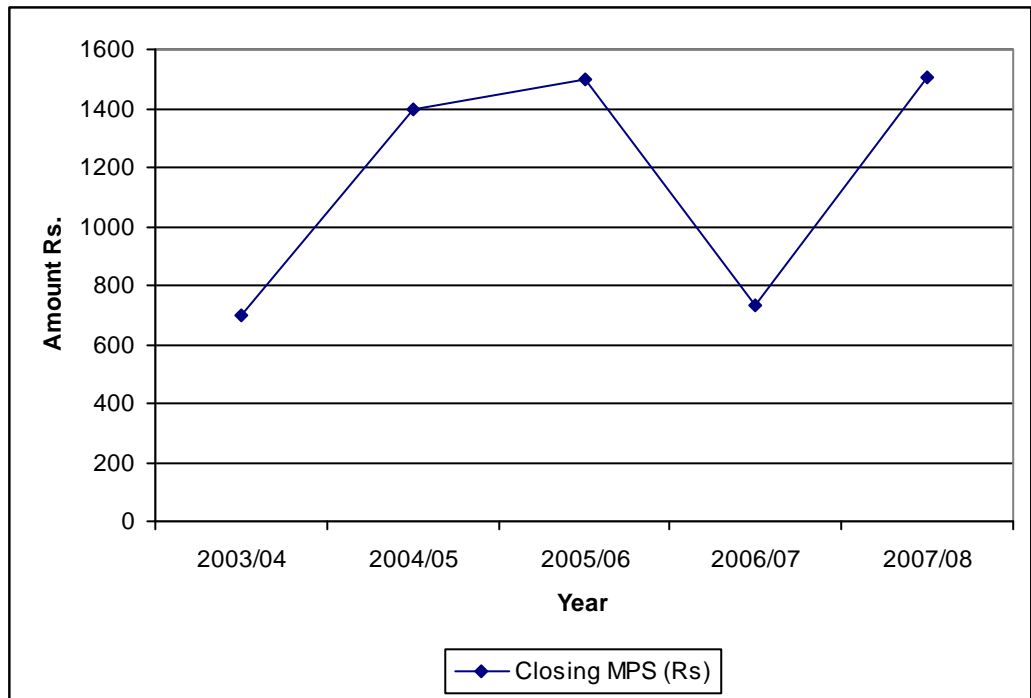
Figure 4.3

The price is maximum in the fiscal year 2003/04 A..D. and lowest in fiscal year 2003/04. The price is in increasing trend from fiscal year 2003/04 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.

4.1.2.2 Realized return (R), Standard deviation $(\dagger)$ and Expected return $(\overline{R})$

The realized rate of return has been calculated 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 S.D. of returns

Fiscal Year	Closing MPS (Rs.)	Total Dividend (D) (Rs.)	$R = \dfrac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R - \overline{R})$	$(R - \overline{R})^2$
2003/04	700	50	------------------	---------	---------
2004/05	1400	55	1.0786	0.8857	0.7845
2005/06	1500	775	0.6250	0.4321	0.1867
2006/07	735	30	-1.0000	-1.1929	1.4230
2007/08	735	50	0.0680	-0.1249	0.0156
		Total	0.7716		2.4098

We have,

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

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

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

Annual Rate of Return
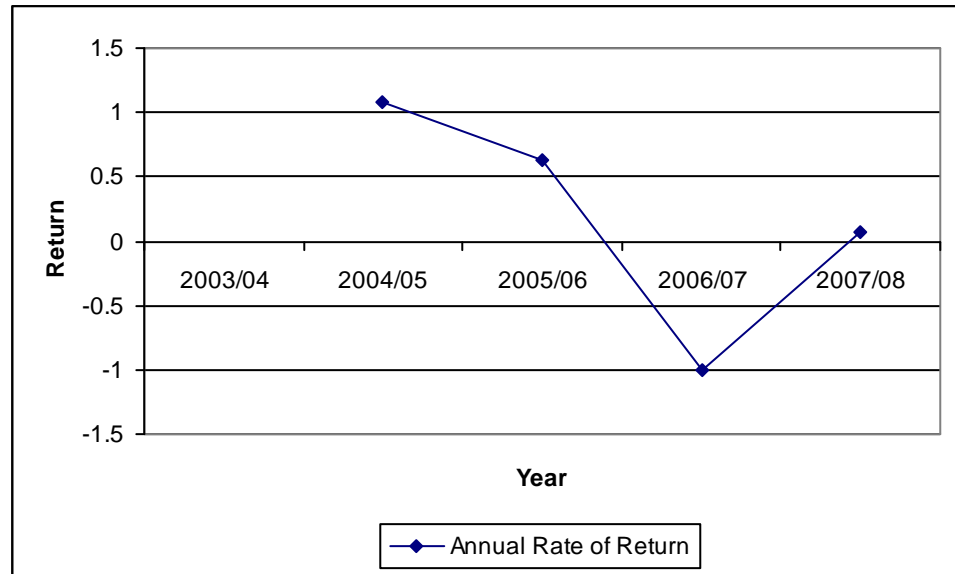
Figure 4.4

The above Figure, 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 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 AuthorizedcapitalisRs.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.

4.1.3.1 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 figure 4.5.

Table 4.5

MPS and Dividend

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2003/04	1200	700	1000	50	3:5	1070*
2004/05	1780	1000	1700	50	1:4	425**
2005/06	2726	1325	1500	27.50	1:4	277.5***
2006/07	1530	610	1000	25	30%	275.80****
2007/08	950	750	836	1.31	1:10	85.31*****

Source: NEPSE Annual Reports

   *50 +3/5 x1700   = 1070

   **50 + 1/4 x1500   = 425

   ***27.50 +1/4 x1000   = 277.5

   **** 25 +0.3 x 836   = 275.80

   ***** 1.31 +1/ 10 x 840 = 85.31
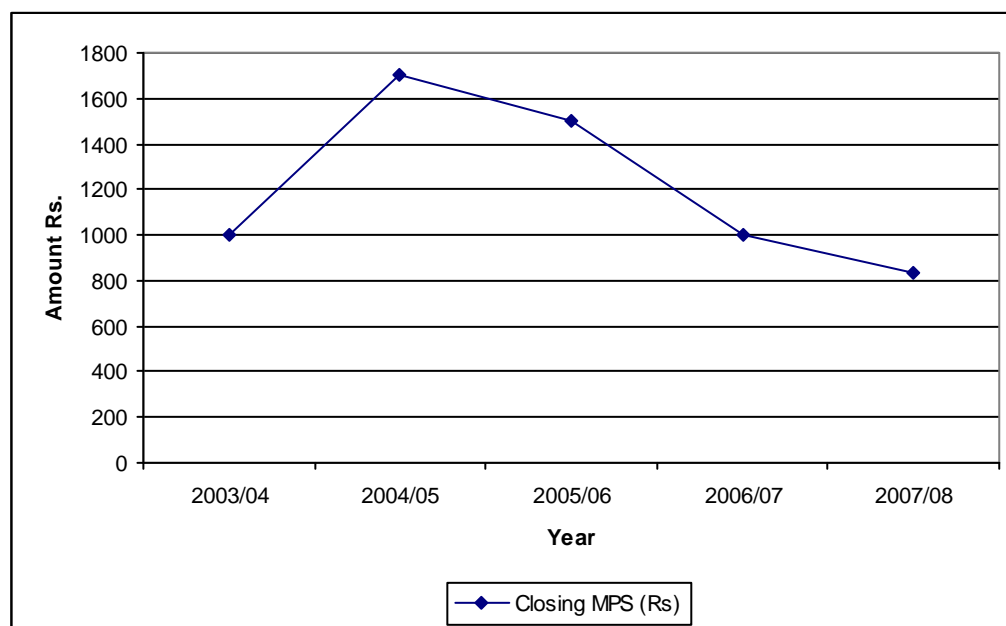
Note: closing mps for 2005/06 was 840.

Figure 4.5

The price is the maximum in the fiscal year 2005/06 A. D. and minimum in the fiscal year 2003/04 A. D. The price is in increasing trend from 2003/04 to 2005/06. It has decreased in fiscal year 2007/08 and again has in increasing trend thereafter. The issue of bonus share, in the fiscal year 2003/04 A. D. resulted in decrease in MPS heavily.

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

The realized rate of return has calculated by using year-end price and total dividend amounts. 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.)	$R=\dfrac{D_t+\left(P_{tt}-P_{t-1}\right)}{P_{t-1}}$	(R-$\bar{R}$)	$\left(R-\bar{R}\right)^2$
2003/04	1000	1070	-------------------	---------	---------
2004/05	1700	425	1.125	0.8894	0.7910
2005/06	1500	277.50	0.0456	-0.19	0.0361
2006/07	1000	275.80	-0.1495	-0.3851	0.1483
2007/08	836	85.31	-0.07869	-0.3143	0.0988
		Total	0.9424		1.0742

Source: NEPSE Annual Reports

`We have,

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

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

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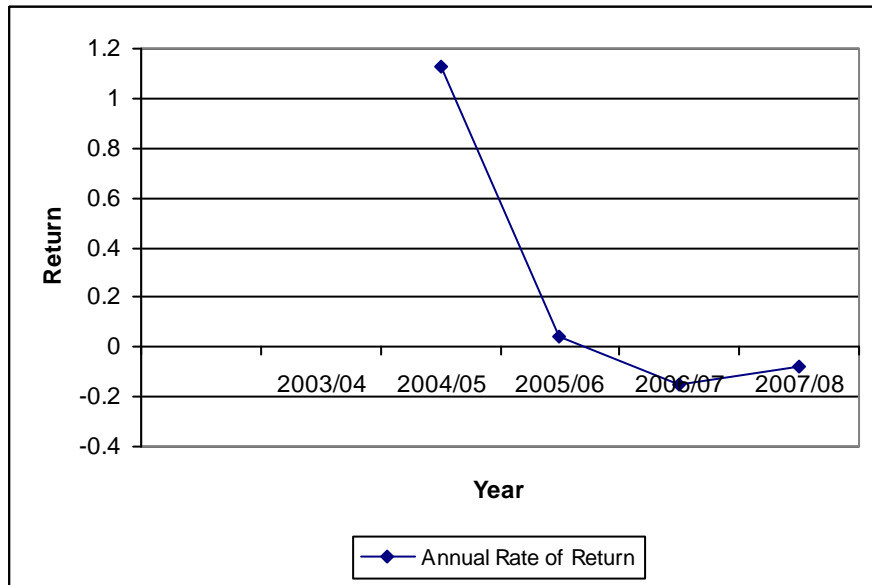
Trend Line of Annual Rate of Return

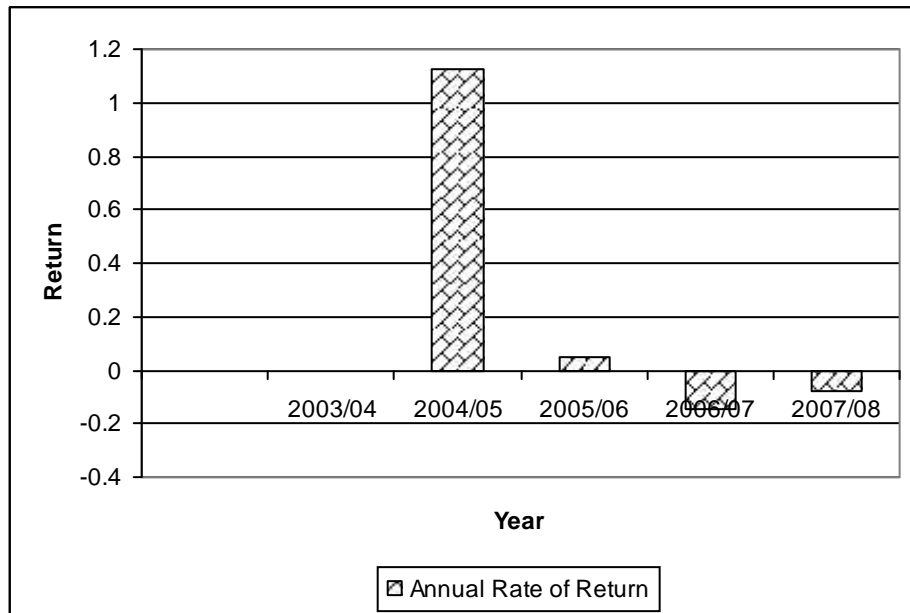**Figure 4.6**

Bar Diagram of Annual Rate of Return

Figure 4.7

The above figures 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.

4.1.4 Nepal SBI Bank Ltd

Nepal SBI Bank Ltd. is also a joint venture bank. It was established in 2058 B. S. (1993 A. D.). It was listed in NEPSE in 10/03/2051 B. S. It has been managed by the State Bank of India under joint venture and technical service agreement signed between it and Nepalese promoters. The joint venture partner, State Bank of India is holding its half of equity shares. This bank is one of the largest shareholders based companies. The   Authorized capital is Rs.1, 000,000,000, Issued capital is Rs.500, 000,000 and Paid up capital is Rs.425, 157,300. The Face value of a share is Rs. 100 and no. Of shareholders are 20589 respectively.

4.1.4.1 MPS and DPS of the bank

The Highest, Lowest and Closing MPS and DPS of SBI Bank Ltd. has shown in table no. 4.7 and year - end price movement has shown in figure 4.8.

Table 4.7

MPS and Dividend

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2003/04	670	435	562	10	----------	10
2004/05	670	435	562	15.01	-----------	15.01
2005/06	2699	1150	1500	0	1:1	401*
2006/07	1600	300	401	0	-----------	0
2007/08	410	255	255	8	-----------	8

Source: NEPSE Annual Reports

   *0 +1 x 401 = Rs. 401

Year –End Price Movement

Figure 4.8

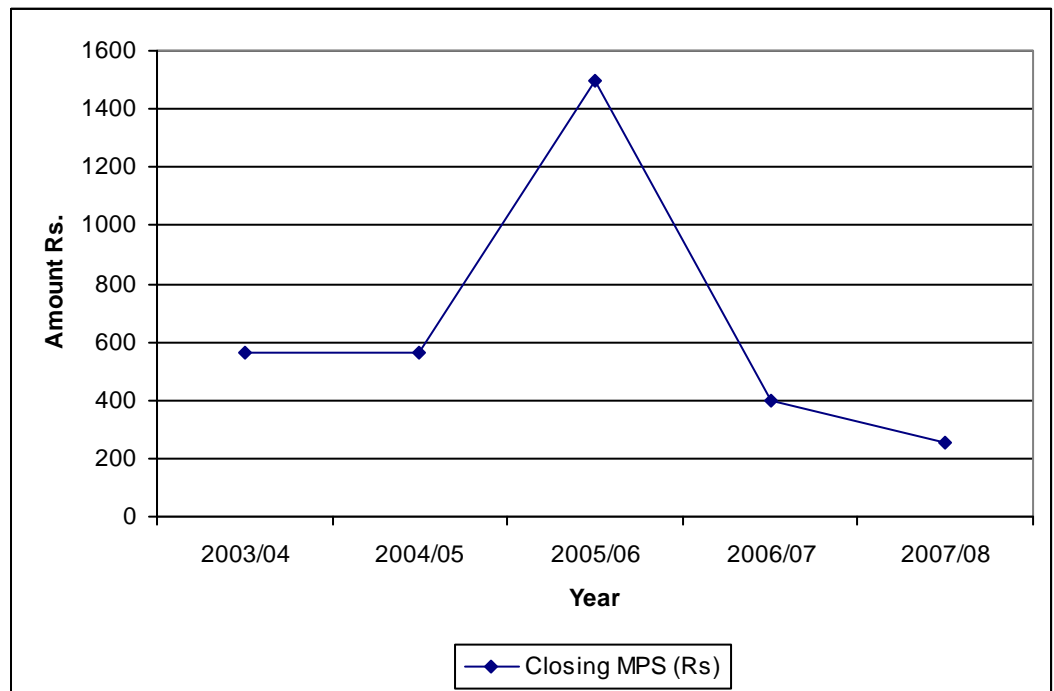The price is maximum in the fiscal year 2005/06 A. D. and lowest in the fiscal year 2007/08.The price is in decreasing trend from the fiscal year 2005/06.

4.1.5.2 Realized return (R), Standard deviation $(\dagger)$, and Expected return $(\overline{R})$

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.)	$R = \dfrac{D_t + (P_{tt} - P_{t-1})}{P_{t-1}}$	$(R-\overline{R})$	$(R-\overline{R})^2$
2003/04	562	10	--------------------	--------	--------
2004/05	562	15.01	0.0267	-0.3064	0.0939
2005/06	1500	401	2.3826	2.0495	4.2005
2006/07	401	0	-0.7327	-1.0658	1.1359
2007/08	255	8	-0.3441	-0.6772	0.4586
		Total	1.3325		5.8889

Source: NEPSE Annual Reports

We have,

$$\text{Expected Return} \left(\overline{R}\right) = \frac{\sum R}{n} = \frac{1.3325}{4} = 0.3331$$

$$\text{Standard Deviation} \left(\dagger\right) = \sqrt{\frac{\sum (R-\overline{R})^2}{n-1}} = \sqrt{\frac{5.8889}{3}} = 1.4011$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger}{\overline{R}} = \frac{1.4011}{0.3331} = 4.2061$$

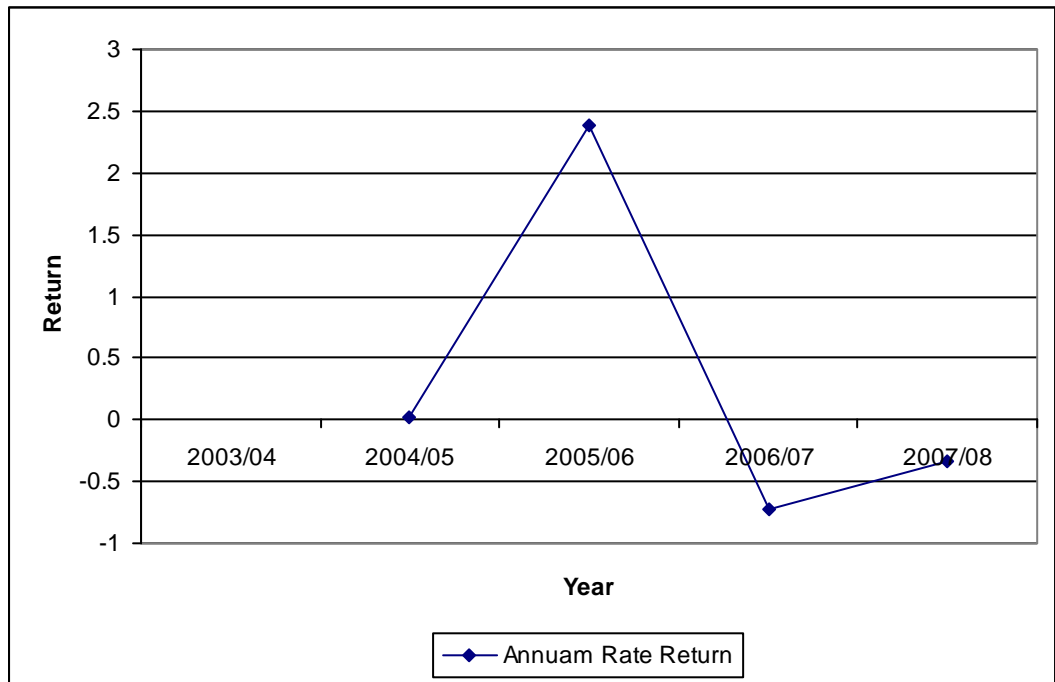**Trend Line of Annual Rate of Return**

Figure 4.9

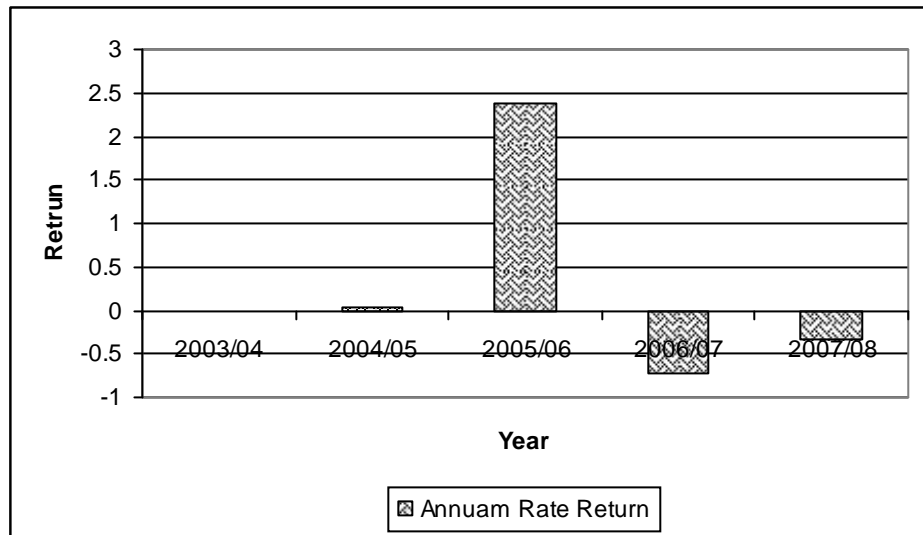**Bar Diagram of Annual Rate of Return**

Figure 4.10

The above figure shows that the rate of return of SBI is not following any trend, it is highest in 2005/06 and is lowest in 2006/07.

4.1.5 Nepal Bangaladesh Bank Ltd.

Nepal Bangaladesh 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.

4.1.5.1 MPS and DPS of the bank

The Highest, Lowest and closing MPS and DPS of NBBL has shown in Table no. 4.9 and year- end price movement has shown in figure 4.11.

Table 4.9

MPS and Dividend

Fiscal Year	High MPS (Rs)	Low MPS (Rs)	Closing MPS (Rs)	DPS (Rs)	Stock Dividend	Total Dividend (Rs)
2003/04	682	251	616	15.47	-----------	15.47
2004/05	1505	800	1502	0	-----------	0
2005/06	3430	950	1100	5.04	1:1	515.04*
2006/07	1200	340	510	0	1:2	180**
2007/08	535	341	360	0	-----------	0

Source: NEPSE Annual Reports

*5.04 + 1x 510 = Rs.515.04

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

Year-End Price Movement
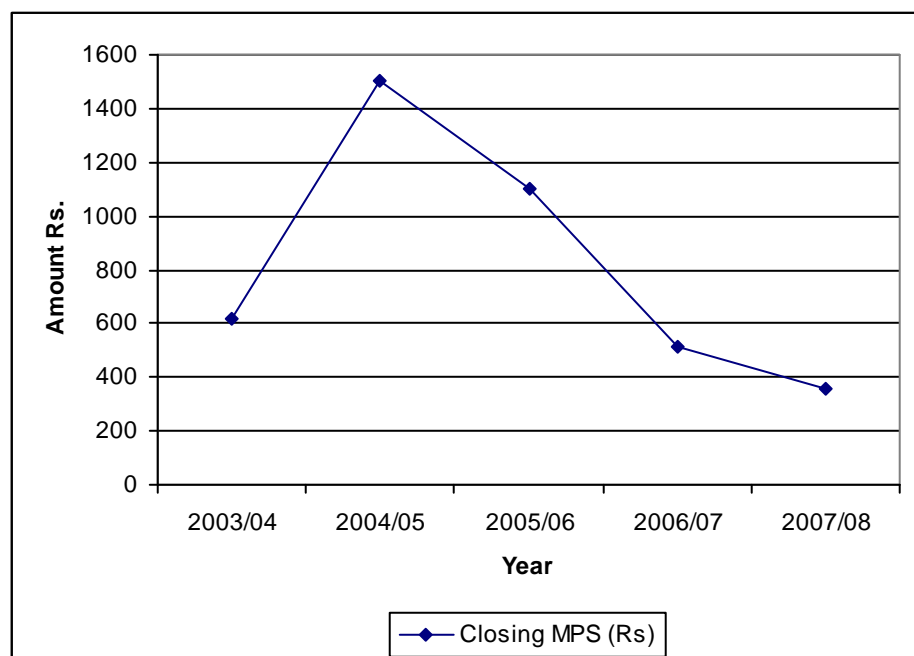
Figure 4.11

The price is maximum in the fiscal year 2004/05 A. D. and lowest in the fiscal year 2007/08 A. D. The price is in decreasing trend from fiscal year 2004/05 A. D. The issue of bonus share resulted into a heavy decrease in share price.

4.1.5.2 Realized return(R), Standard deviation $(\dagger)$ 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.)	$R=\dfrac{D_t+\left(P_{tt}-P_{t-1}\right)}{P_{t-1}}$	$(R-\bar{R})$	$\left(R-\bar{R}\right)^2$
2003/04	616	15.47	-------------	-----------	---------
2004/05	1502	0	1.4383	1.1039	1.2186
2005/06	1100	515.04	0.0753	-0.2591	0.0671
2006/07	510	180	-0.3727	-0.5844	0.3415
2007/08	360	0	-0.2941	-0.6285	0.3950
		Total	0.8468		2.0222

Source: NEPSE Annual Reports

We have,

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

$$\text{Standard Deviation}(†) = \sqrt{\frac{\Sigma\left(R-\bar{R}\right)^2}{n-1}} = \sqrt{\frac{2.0222}{3}} = 0.8210$$

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

Annual Rate of Return
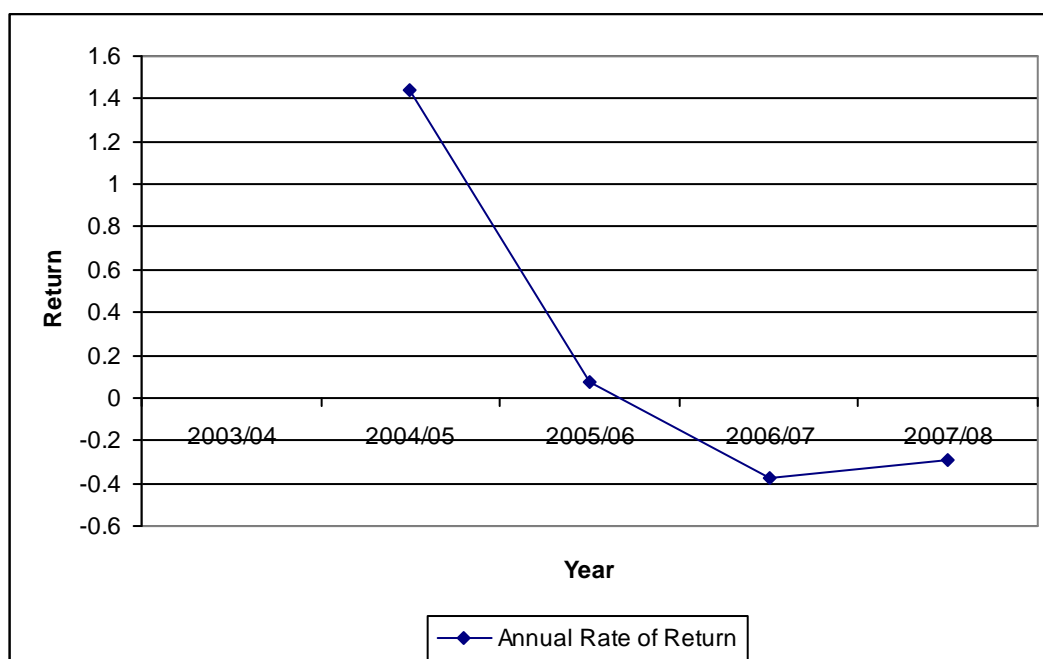
Figure 4.12

The above Figure shows that the return of NBB was highest in 2003/04west in 2005/06eturn of NBB is also following decreasing trend up to 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 4.1, 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
NIBL	0.3249	0.4680	1.4404
HBL	0.2356	0.5984	2.534
SBI	0.3331	1.4011	4.2061
NBBL	0.2117	0.8210	3.878

From the above table it can be concluded that the return from SBI 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 common stock of SBI and these can get the

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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. means more consistency in returns and the NIBL has the lowest C. V.

For a quick view of the risk position of the banks following figures are presented.
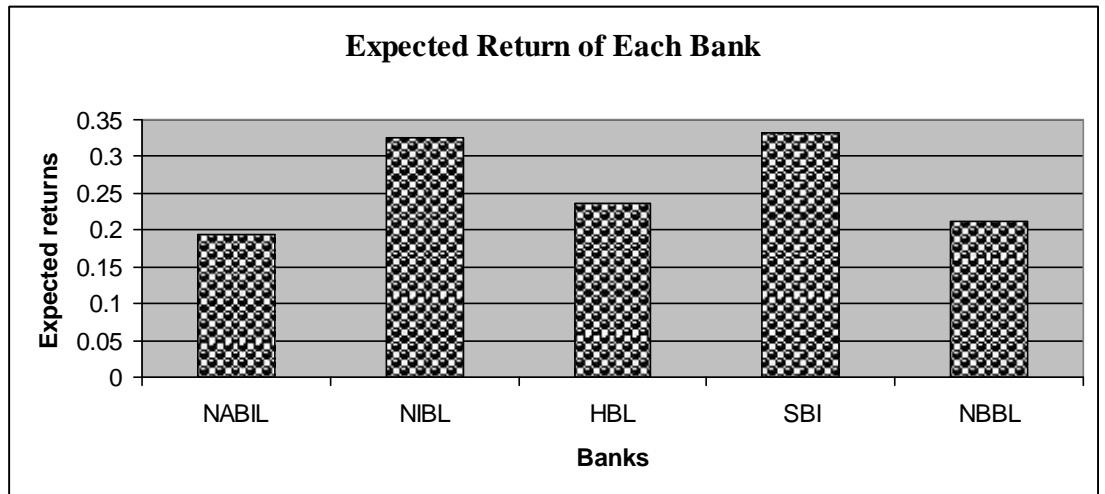
Figure 4.13
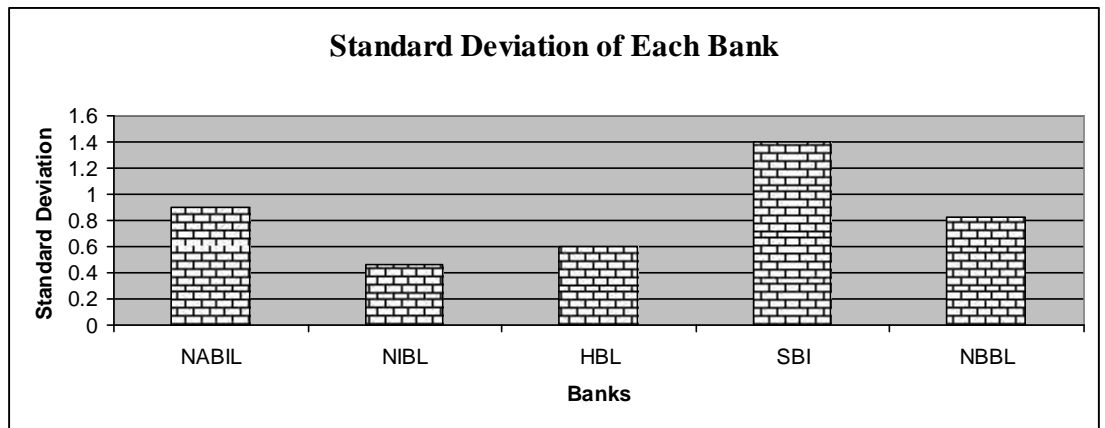
Figure 4.14
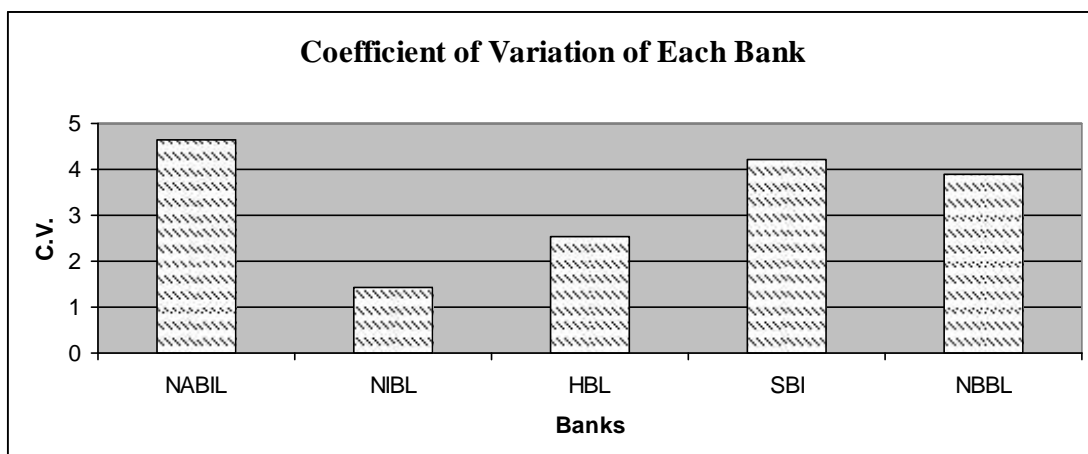
Figure 4.15

The above figure, it is seen that the expected return of SBI has highest and NABIL return is lowest. Rate of return of NIBL and HBL are very close to return of SBI. 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	30.29
Nepal Investment Bank Ltd.	2347.56	19.68
Himalayan Bank Ltd.	3586.44	30.07
Nepal SBI Bank Ltd.	1084.16	9.09
Nepal Bangaladesh Bank Ltd.	1295.71	10.86

Source: NEPSE Annual Reports
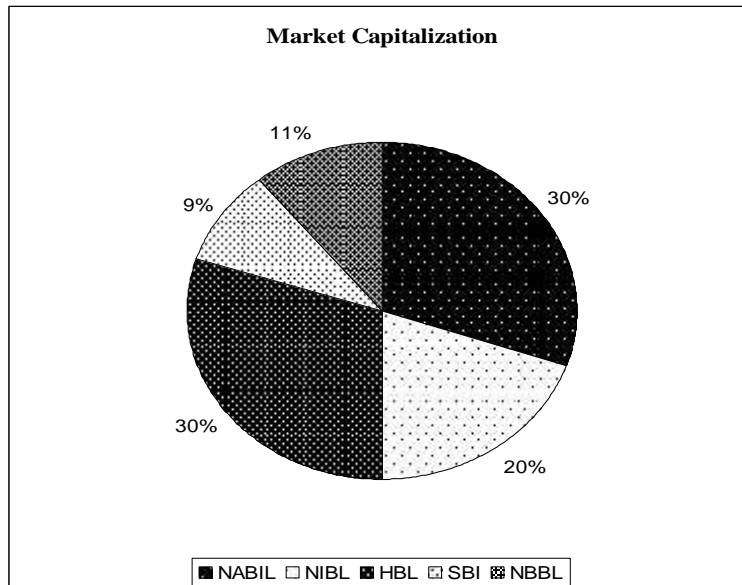
Figure 4.16

On the basis of Market Capitalization, NABIL Bank 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 Common stock of NABIL Bank 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 4.13 shows the year- wise movement of market capitalization.

Table 4.13

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

Banks	Year				
	2003/04	2004/05	2005/06	2006/07	2007/08
NABIL	2749.60	5499.20	7374.75	3613.63	3613.63
NIBL	1112.58	1896.25	1954.77	1291.85	2347.56
HBL	1920	4080	4500	3900	3586.44
SBI	674.12	674.12	2159.10	170.81	1084.16
NBBL	716.72	1768.91	2619.76	1821.98	1295.71

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.

Year-Wise Comparative of Market Capitalization of the Banks

Figure 4.17
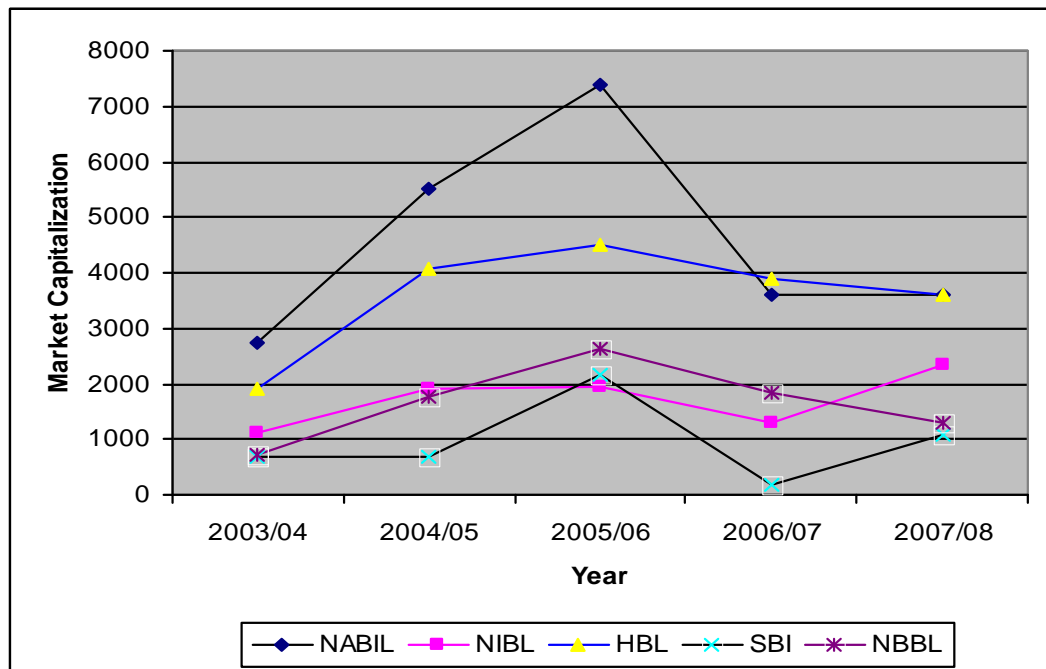
The above figure shows that the movement of market capitalization is in increasing trend up to 2005/06ter 2006/07l movements is stable of NABIL and market capitalization of NIBL is in increasing trend up to 2005/06 and in 2006/07 it decreased but again in 2007/08 its increased. But market capitalization of HBL is in increasing

trend up to 2005/06 but after that it is in decreasing trend. Highest movement of market capitalization is in 2005/06 and lowest in 2006/07. SBI movement of market capitalization is not following any trend that highest movement of market capitalization of NBBL is in 2005/06 and lowest in 2003/04.

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

Market capitalization of each industry

Market Capitalization
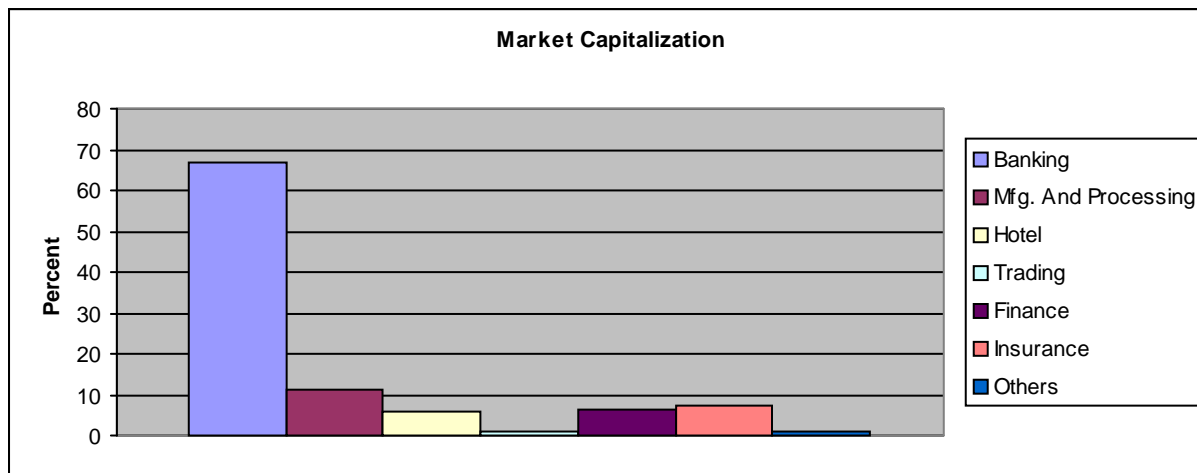
Figure 4.18

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 on section 4.3 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. The year wise NEPSE index and calculations related to this analysis has presented in appendices table no. 2 to 7.

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

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.
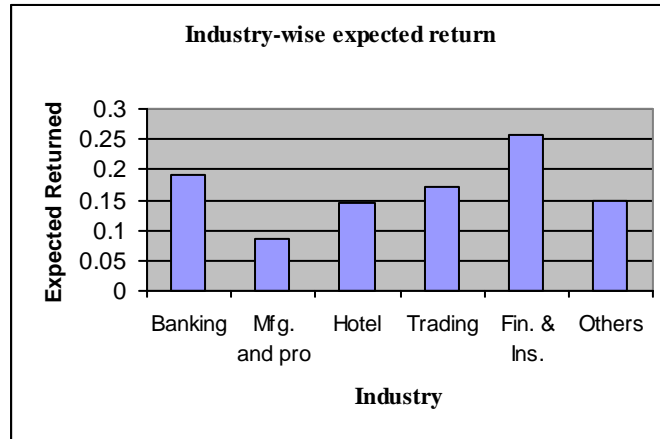
Figure 4.19

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.

Industry-wise standard deviation.
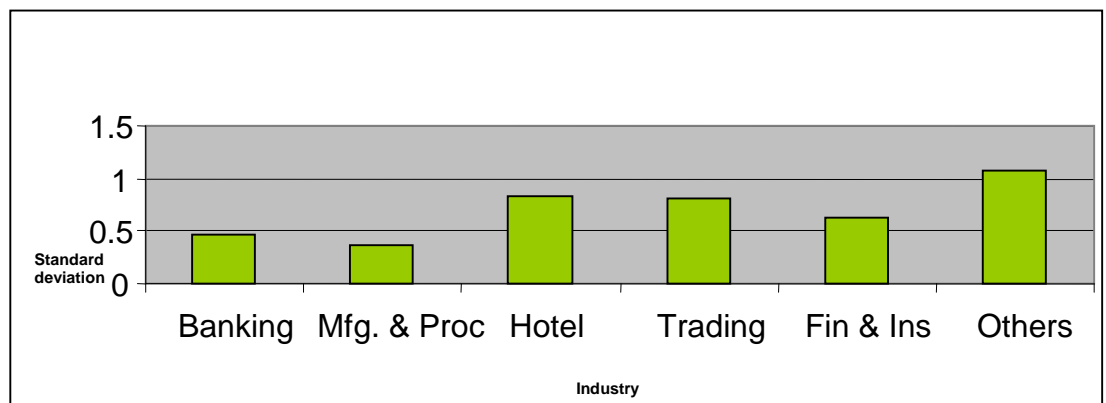
Figure 4.20

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 4.20.

Industry-wise coefficient of variation (C. V.)

Figure 4.21

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 in Annex no. 1.

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,

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

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

Where,

ρ_{jm} = Correlation Coefficient between returns of market and stock j

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

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 has calculated in ANNEX no. 9 to ANNEX no. 15. The summary has presented in table 4.17.

Table 4.17

Beta coefficient of different banks

Banks	beta coefficient	Remarks
NABIL	1.7105	Most Aggressive
NIBL	1.0028	Aggressive
HBL	1.158	Aggressive
SBI	-0.1515	Most defensive
NBBL	1.5888	Aggressive

The beta coefficient of NABIL is the greatest and is more than one. So, common stock of NABIL is the most aggressive stock among the sampled banks. The beta coefficients of NBBL, NIBL and HBL are also greater than one so their common stock is also aggressive. The beta of SBI is less than one and negative too, so this is most 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-

$$E(R_j) = R_f + \left[E(R_m) - R_f \right] \beta_j$$

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 = Risk free rate of return = 3.2947% = 0.032947

$E(R_m)$ = Expected market rate of return = 13.74% = 0.1374

The betas have calculated in appendix no. 9 to 15. The required rate of return and comparison has presented 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
NIBL	1.0028	0.1377	0.3249	Under priced
HBL	1.158	0.1322	0.2356	Under priced
SBI	-0.1515	0.0171	0.3331	Under priced
NBBL	1.5888	0.118	0.2117	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 NIBL (ρ_{AB})

We have,

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

Where,

ρ_{AB} = Correlation coefficient of returns between NABIL and NIBL

$\dagger_A$ = S. D. of NABIL

$\dagger_B$ = S. D. of NIBL

Similarly, the other correlation coefficient are presented in Table 4.19

Table 4.19

Correlation coefficient between C. S. of various banks.

	NABIL	NIBL	SCBL	HBL	SBI	NBBL	EBL
NABIL	1	0.9097	0.8861	0.7485	0.5230	0.6916	0.8770
NIBL		1	0.8520	0.6777	0.2616	0.6577	0.8929
HBL				1	0.0327	0.994	0.9169
SBI					1	0.0877	0.1723
NBBL						1	0.910

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 explained that the risk could be reduced without loosing 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 HBL rather investing only in NABIL or in HBL. 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 4.20 and 4.21 show 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	0.039
NIBL	0.3249	1/5	0.065
HBL	0.2356	1/5	0.047
SBI	0.3331	1/5	0.067
NBBL	0.2117	1/5	0.042
		Expected Return	0.26

Therefore, portfolio's expected rate of return=0.26 or 26 %

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	0.3029	0.058
NIBL	0.3249	0.1968	0.064
HBL	0.2356	0.3007	0.071
SBI	0.3331	0.0909	0.030
NBBL	0.2117	0.1086	0.023
		Expected Return	0.246

Therefore, Portfolio's expected return=0.246 or 24.6%

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 SBI Bank Limited is the maximum (33.31 %). The expected return of NABIL Bank Limited 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 SBI 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. and the common stocks of NIBL are less risky because it has lowest C.V. On the basis of C.V. common stock of NIBL are more suitable for investment.

- 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 four 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 SBI and low difference 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 SBI and HBL and between NBBL and SBI 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 NABIL seems to be the most volatile because it has the highest beta. The Beta of NABIL is 1.7105, which shows the change in market return by 1% brings the change in systematic return on common stock of NABIL by 1.7105 %. The Beta of SBI is the least and negative which shows the stock of SBI provides just opposite return overtime that those provided by market portfolio. So stock of SBI is defensive and rests are aggressive. Stocks having high Beta coefficients are expected to provide higher return compensation.

- 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, NABIL is in the highest position (Rs. 3613.63 million) and SBI 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 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 Recommendations

Mainly this study is made for the partial fulfillment of M.B.S. level. However, this study may be helpful for the individual investors. The following recommendations are prescribed on the basis of data analysis and major findings of this study.

- Considering the whole industry, banking industry is better for investment because it has lowest C.V. (2.4693). From the analysis of individual common stocks of banking industry, the investment on common stock of NIBL is recommended for individual stock investment because the C.V. of the returns of NIBL common stocks is the lowest. But if the criteria are market sensitivity, the common stock of SBI is recommended for investment because it has defensive type of stock.

- 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 and SBI 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.

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