

CHAPTER – I

INTRODUCTION

1.1 Background of the Study

Banking sector is the most dynamic part of economy which collects unused fund and mobilizes it in needy sectors. It is the heart of trade, commerce and industry. In the context of Nepal, the growth of banking sector is not so long. The institutional banking system started with the establishment of "Tejarath Adda." It didn't collect deposits from the public but gave loans to employees and public against the gold and silver. So its limited resources were able to serve only limited people.

The concept of banking was formally executed after the establishment of the Nepal Bank limited (NBL) in 1937 A.D. Nepal Rastra Bank (NRB) was established in 1956 A.D. as the first central bank. Since then, it has been functioning as the government bank and has contributed to the growth of financial sector. The major objectives of NRB are to supervise, protect and direct the functions of commercial banking activities. Later it considered that the NBL was not sufficient to meet the increasing banking service requirements of government and people. Then the number of banks increased gradually as per the requirements under different Acts. Like in 1965 A.D. Rastriya Banijya Bank (RBB) was established as a fully government owned commercial bank under commercial Act. With the permission for the establishment of joint venture Banks in the early 1983 A.D, the financial scenario has changed. The number of commercial banks has been increasing so, the investment volume and opportunity in various sector such as agriculture, industry, commerce and social sector are also increasing gradually.

In 1984 A.D. Nepal Arab Bank Limited (NABIL), the first joint Venture bank in Nepal was established. Continuously, different commercial banks have been establishing in Nepal. There are twenty-five commercial banks in Nepal. In

the development of financial system in Nepal, commercial banks are playing vital role and there is the highest contribution of banking sector in the total market capitalization.

The History of Nepalese capital market began with the flotation of equity shares of Biratnagar Jute Mills Ltd. and Nepal Bank Ltd in 1973 A.D. In 1976 A.D. Security Exchange Centre Ltd. (SEC) was established for some of the initial efforts made for the development of capital market in Nepal. In the initial time, SEC was the only one capital market undertaking the job of brokering underwriting, managing public issues, market making for government bonds and other financial services. SEC was converted into Nepal Stock Exchange (NEPSE) in 1993 A.D. The objective of NEPSE is to import free marketability and liquidity to the government, corporate securities by facilitating transaction in the trading floor. The Board of Directors of NEPSE consists of nine directors in accordance with security exchange act 1983. Members of NEPSE are permitted to act as intermediaries in buying and selling government bonds of listed corporate securities. At present, there are 27 member brokers operating on the trading floor as per the security exchange Act 1983.

1.2 Focus of the Study

An Investment is a commitment of money that is expected to generate additional money. Regarding investment two terms are mostly used to interpret, they are risk and return. Risk and Return analysis is conducted to identify the sustainable position of any financial sector. Risk and return are most important concepts in finance. In fact, they are foundation of the modern finance theory. The relationship between risk and return is described by investor's perception about risk and their demand for compensation. No investors will like to invest in risky assets unless they are assured of adequate compensation for the assumption of risk. Risk plays a central role in the analysis of investment. Investor often ask about the total risk they will be assuming in an investment, and like to know if the risk premium provided is quite enough. But they are also concerned with many other issues involved in the investment decisions. The investment simply means

sacrificing current funds for future returns, bearing certain risk. The investment may be on fixed assets like, land, building or precious metals and collectibles or something else. But here as a student of finance, we have focused the term investment as sacrificing current fund on financial assets like share, debenture etc.

Investors invest their fund on the securities of certain companies for the long run future returns. The return is defined as the reward for bearing the risk. Return is the most important outcome from an investment. It measures the investors rate of wealth accumulation i.e. increase or decrease per period. Risk is defined as the occurrence of unfavorable outcomes, which is ever harmful for the business. Risk is inseparable from return, it ever creates uncertainty. Thus, "Risk is present in virtually every decision. Assessing risk and incorporating the same in the final decision is a integral part of financial analysis. The objectives in decision making are not to eliminate or valid risk often it may be neither feasible nor necessary to do so. But to properly assess it and determine whether it is worth bearing" (Gitman, 2001).

In the context of finance investment is made on common stock, the future return is uncertain and it is usually dividend plus any change in market price of share. The stock price can be affected by economic factors such as interest rates, economic growth, inflation and strength of dollar.. The risk of a stock can be measured by its price volatility. Risk cannot be avoided if investor is seeking for higher rate of return, investor will require different rate of return on various securities since they have risk differences. Higher the risk of security, higher rate of return demanded by the investors. Since the ordinary share (Common Stock) is more risky, investor will require highest rate of return on their investment on common stock. Preference shares are more risky than debenture. Therefore, the risk- return relationship for various securities is different at all due to the risk associated with securities.

1.3 Statement of the Problem

After the restoration of democracy in 1990, Nepal Government initiated open market policy in country. As a result, numbers of public limited companies are increasing tremendously. Such institutions are for providing banking services,

participating in developing works, manufacturing, processing and other. By the rapid growth in public limited companies, investors diverted their saving towards securities of different companies. But recent trend shows that all economic activities are not operating properly in Nepal due to different causes such as unnecessary political regulation, political violence and difficult topography, lack of proper evaluation by the government or central bank controversy policy of government and so on. Therefore, commercial bank could not be exception as other economic institutions in Nepal. So, commercial banks are facing different problems during their inception.

However, the general publics are interested to invest their small money on the common stock of commercial banks due to their sound financial performance in comparison with the share of other manufacturing companies. But the price trend of securities seems much volatile which is a basic determinant of the return of the shareholders. This means while investing in any security, the investor should closely examine the extent of the volatility of the return which virtually lacks in our capital market. Sometimes they bear greater risk in investing on common stocks. This is the main problem that does not allow gearing up the capital market of the nation. Investors attitude and perception also play vital role in rational decision which is influenced by the knowledge and access to the data required for analysis. In Nepal, most of the investors invest their funds in single security rather they can be benefited by investing in portfolio of securities and achieving diversification of risk. The main problem is that the general public cannot perfectly analyzed the risk and return of common stock and market situation.

In this background, it is necessary to analyze the risk and return situation of the listed commercial banks not only this has the analysis of diversifiable and undiversifiable risk position also helped to make investment decision to minimize the risk. So the researcher has the following questions for the study.

-) Which sampled bank's stock is suitable for investor for buying and selling?
-) What is the total risk and return position of the banks?

-) Which securities have most diversifiable risk? And which have most undiversifiable?
-) What portion of total risk is diversifiable and what portion is undiversifiable?

1.4 Objectives of the Study

The main objective of the study is to assess the risk and return of common stock investment of listed commercial banks. The specific objectives of the study are as follows:

-) To analyze the common stock in terms of risk and return.
-) To analyze the systematic risk and unsystematic risk of commercial banks.
-) To analyze the risk and return in the framework of CAPM Model.
-) To analyze whether the stock of selected commercial banks are overpriced or under priced or equilibrium priced.

1.5 Significance of the Study

Basically, the proposed study is important for researchers to fulfill the academic requirement of Master's Degree. Apart from this, the study will give information about Nepalese capital market by analyzing risk and return and will definitely contribute to increase the analytical power of the investor in capital market. It will be beneficial for all persons who are directly or indirectly related to the capital market.

1.6 Delimitation of the Study

Every research naturally has some limitations. So this study is not an exceptional case, the major delimitations of the study are:

-) Major portion of analysis and interpretation have been done on the basis of available secondary data and information. So the consistency of finding and

conclusion strictly depends on the reliability of secondary data and information.

-) This study covers the relevant data and information only for five years.
-) This study mainly focuses on risk and return analysis of common stock of five listed commercial banks i.e. Nepal investment Bank Ltd. Himalayan Bank Ltd, Everest Bank Ltd., Nepal Arab Bank Ltd. and Standard Chartered Bank Nepal Ltd.

1.7 Organization of the Study

This study has been organized into five chapters :

Chapter I

This chapter is the introduction chapter. It consists of background of the study, focus of the study, statements of the problem, objectives of the Study, significance of the study, delimitation of the study and organization of the study.

Chapter II

The second chapter consists of conceptual framework and research review.

Chapter III

This chapter is concerned with the research methodology used in the study. It includes research design, population and sample size, sources of data, data collection procedure and data analysis tools.

Chapter IV

This chapter contains data presentation and analysis. It analyzes and interprets the collected data using various financial and statistical tools and techniques. It includes major findings of the study.

Chapter V

This chapter consists of summary of the whole study, conclusion and recommendation.

CHAPTER – II

REVIEW OF LITERATURE

In this chapter the theoretical aspect of the study on risk and return analysis is explored in more detail and descriptive manner. The first part of the study tries to describe the conceptual framework, concept of commercial bank, investment, common stock, meaning of risk and return. The second chapter explains the available research in the related topics. Not only this the available literature about risk and return published in the newspaper, articles and journals are also explained.

2.1 Conceptual Framework

This sub chapter presents the conceptual aspect of the study. It includes the concept of risk and return on common stock of commercial banks, Investment on Securities, reasons to manage risk, common stocks.

2.1.1 Investment, Risk and Return

Analyzing risk and return shows the tradeoff between risk and return of any type of investment. Investment, risk and return are the financial terms, which are heavily associated with each other. Investment simply means the employment of funds with the aim of achieving additional income or growth in value. It involves the commitment of resources that have been saved or put away from current consumption in the hope that some benefits will produce in future. Investment involves long term commitment and waiting for a reward.

Investment, in its broadest sense means the sacrifice of dollars for future dollars. The sacrifice takes place in the present and is certain. But the reward comes later, which is uncertain. Return to investors is ever-followed by risk. Risk ever creates uncertainty. Simply "Risk means the possibilities of suffering some

form of loss or damage" (Shrestha, 2003). It is the chances of unfavorable event. Assets having greater chances of loss are more risky than those with lower of loss. Thus, risk refers to the variability of the returns associated with the given asset.

Investment can be made on real assets or financial assets. Investment on real assets is known as real investment and on financial assets is known as financial investment. Real investment means investment on real assets like lands, buildings, factory etc. Financial investment means the investment on financial assets like shares, debentures, warrants, convertibles etc. "Real Investment generally involves some kind of tangible assets such as land, machinery or factories. Financial Investment involves contracts written on pieces of paper such as common stocks and bonds in the primitive economies most investment is of the real variety, where as in a modern economy much investment is of the financial variety" (Gordon and Jeffery, 1995).

Risk cannot be avoided if investors is seeking higher rate of return. Investors will require different rate of return on various securities since they have risk difference. Higher the risk associated with security, higher the rate of return demanded by investor. Among different types of securities, common stock is most risky. Investors will require highest rate of return on their investment with stock, common stock represents a commitment on the part of a corporation to pay periodically whatever its board of directors seem appropriate as a cash dividend. Thus, common stock is known as a risky security. There are different sources of uncertainty that contribute to the investment risk, i.e. investment risk, purchasing power risk, Bull bear risk, default risk, liquidity risk, call ability risk, convertibility risk, political risk and industry risk.

Investors invest their fund on the securities of certain companies for the long term future returns. The return is defined as the reward for bearing risk. Return is the most important outcome from an investment. It measures the investor's rate of wealth accumulation i.e. increase or decrease per period. Return can be of different types like holding period return, return from speculation or from short sell, capital gain, divided gain, yield on investment etc. These all types of returns are the rewards to the investors for bearing the risk.

2.1.2 Investment on Securities

The investment environment refers to all internal and external forces, which have a bearing on the functioning of investment decisions. "It encompasses the kinds of marketable securities that exist and where and how they are bought and sold through the broker's network and financial intermediary" (Sharpe, et. al., 2002).

Securities normal any other financial certificates issued by the companies to general public. These certificates are issued at certain price called par value and are transferable from one person to another. In simple way, securities can be understood as the promissory paper that the company gives to the investors after receiving certain rupees as loan or share.

When someone borrows money from a pawnbroker he or she must leave some item of value as security. Failure to repay the loan (plus interest) means that the pawnbroker can sell the pawned item to recover the amount of loan (plus interest) and perhaps make a profit. The terms of the agreement to buy a car, the lender usually hold formal title to the car until the loan is repaid. In the event of default, the lender can repossess the car and sell it to recover his/her costs. In this case, the official certificate of title is issued by the state that serves as securities for the loan.

An investor can invest on any kinds of the securities for the long term return. He or she can make investment on shares, debentures or any other financial assets. But a rational investor must think about the risk and return on his/her investment. Before making any type of investment, rational investor must analyze risk and return. Normally almost investors are risk averters. So, risk analysis is very important for investment. Investment on bonds or preferred stocks are less risky because of their nature of fixed investment and fixed return, but the investment on common shares are more risky because of their certain investment but uncertain returns.

There are many varieties of securities available in the market. A market where securities like stocks and bonds are traded is known as security market. Security market facilitates the process of transferring funds from savers to

investors. People requiring money is brought together with those having surplus money in the securities market. Security markets are also known as mechanism created to facilitate the exchange of financial assets. Therefore, the market exists in order to bring together the buyers and sellers of securities. There are many ways in which security market can be classified.

I. On the basis of Securities Traded

On the basis of securities traded security market can be classified in to :

Primary Market

Secondary Market

) Primary Market

Primary Market is the place where corporations and governments issue new securities. All securities whether in money or capital markets, are initially issued in the primary market. This is the only market in which the company or government directly involved in the transaction and receives direct benefits from an issue that is the company actually receives the proceeds from the sale of securities. Once the securities begin to trade among individuals, business, governments or financial institutions savers and investors, they become a part of the secondary market.

) Secondary Market

The Secondary Market is a place where outstanding securities are bought and sold. In other words, the secondary market is a market for old securities i.e. the securities which have already been listed in the stock exchange. It comprises the organized securities exchange and specialist facilitates the transaction. Nepal Stock Exchange (NEPSE) is an example of secondary market in Nepal, which is non profit organization operating under the Securities Exchange Act 1983. The basic objective of NEPSE is to impart free marketability and liquidity to the government bonds and corporate securities by facilitating transactions in its trading floor through market intermediaries such as brokers, market makers.

Members of NEPSE are permitted to act as intermediaries in buying and selling of government bonds and listed corporate securities. At present there are 27 member brokers and two market makers, who operate in the trading floor as per the security exchange Act 1983 rules and by laws of exchange. Besides, NEPSE has licensed dealers.

II. On the basis of Maturity of the Security

On the basis of maturity period security market can be classified in to :

Money Market

Capital Market

) Money Market

The money market refers to the market in which short term financial assets are traded. Money market typically involves financial assets that have a lifespan of one year or less. The bill of exchange, commercial paper, certificate of deposits, treasury bills are the examples of short term financial assets which are marketable, highly liquid and low risk.

) Capital Market

The capital market is the market for long term securities. Securities that matures in more than a year are known as long term securities. Capital market is that market where anybody or individuals, whether incorporated or not, constituted for the purpose of regulating or controlling the business of selling or dealing in securities. The examples of long term securities are common stock, debenture and long term bonds of the government.

2.1.3 Common Stock

Common stock represents the ownership position in a corporation. It has a residual claim, in the sense that creditors and preference shareholders must be paid as scheduled before common stock holders can receive any payment. In bankruptcy, common stockholders are in principal entitled to assets remaining

after all prior claimants have been satisfied. Thus, risk is highest with common stock. When investors buy common stock they receive certificate of ownership as a proof of there being part of the company. The certificate states the number of shares purchased and their par value.

Common Stock holders of corporations are its residual owners; their claim to income and asset come after creditors and preference shareholders have been paid in full. As a result, "a stockholder return on investment is less certain than the return to lender or to a preferred stock. On the other hand, the share of the common stock can be authorized either with or without par value. The par value of the stock is merely a state figure in the chapter and is of little economic significance" (Van Horne, 1997).

A company should not issue stock at a price less than par value because stock holders who buy stock for less than par value would be liable to creditors for the difference between the below par price they paid and the par value. But in Nepal, as per the provision its par value must be either Rs. 10 or Rs. 100.

Common stock has one important characteristic and is important speculative characters. Their investment value and average market price tend to increase regularly but persistently over the decades as their net worth builds through the reinvestment of undistributed earnings. However, most of the time common stocks are subject to irrational and excessive price fluctuations in both directions, as most people to speculate or gamble i.e. to give a way to hope fear and greed.

2.1.4 Meaning of Return

Return is the total gain or loss experienced on an investment at a given period of time. The concept of return has different meaning to different investors. Some investors seek near term cash inflows and give less value of more distant return such as investor might purchase the other firm that pays large cash dividends. Other investors are concerned primarily with growth. They would seek

projects that offer the promise of long term, higher than average growth of sales, earning and capital appreciation.

Return is also defined as the after tax increase in the value of the initial investment. This value can be increased through a direct cash payment to the investor or by an increase in the market value of the investment relative to the original purchase price. It is usually expressed as a percent of beginning price of the investment. The overall rate of return can be decomposed into two parts as capital appreciation is the difference between ending value and beginning value of an investment.

2.1.5 Return on Common Stock

The period during which an investor who owns an investment is called its holding period and the return for that period is the holding return. In other words, a single period return is also known as a holding period return. It is one of the techniques of measuring returns. It is the total gain or loss on an investment over a given period of time. It is often calculated for a period other than one year. For this reason, the length of the holding period must always be indicated for a specific single periods return. In general, if the length of the holding period is not specified, it is assumed to be one year.

Symbolically,

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

Where,

R = Actual or Expected rate of return

P_t = Stock price at the time period t.

P_{t-1} = Stock's price at the time period t-1.

D_t = Cash dividend at the end of time period t.

i. Multi Period Return and Annualized Return:

A multi-period return is the return earned during the multiple period of holding the securities. To express the multiple period returns as annual return, the returns are converted in an annual basis. Such as annualized return is the mean return and there are two types of mean return.

ii. Arithmetic Mean:

This mean is the most familiar statistical measure to any investor or individual. It is a more applicable measure of average performance over the period, when variability of return is less. It is calculated by dividing the total return of multiple periods by the number of observation or returns. The mean return in equation is as follows:

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

Where,

\overline{HPR} = Arithmetic mean returns.

HPR_t = Holding period return at time t.

n = No. of Observations or returns.

ϕ = Summation.

iii. Geometric Mean:

It is another method of calculating annualized return. It is better measures of growth of wealth over time that would give the same cumulative performance as the sequence of actual returns. It measures more accurately the authentic average return. It is calculated by taking the nth root of the product of one plus individual rate of returns minus one. The geometric mean is defined as follows:

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

Where,

G_m = Geometric Mean Return

HPR_t = Holding period return at time t.

n = no. of observations or returns.

Δt = period of observations or returns.

iv. Expected Rate of Return

The return that an investor expects from his investment in the forthcoming future is called expected rate of return. An investor normally estimates his expected rate or return by analysis the trend of previous periods (years).

"If an investment is to be made the expected rate of return or the expected holding period return should be equal or greater than the required rate of return of that investment. The expected rate of return for that investment. The expected rate of return is based upon the expected cash receipts (eg. dividend 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 return. Unless the real rate of return is guaranteed, most investor recognizes the possible rate of return into a single number called the expected rate of return' (Van Horne, 1995).

Investment decision is based on expectations about the future. The expected rate of return for any asset is the weighted average rate of return. Using the probability of each rate of return as the weight, the expected rate of return is calculated by summing the products of the rates returns and their respective probabilities.

$$E(r) = \sum_{i=1}^n P_i r_i$$

$$E(r) = P_1 r_1 + P_2 r_2 + \dots + P_n r_n$$

Where,

$E(r)$ = Expected rate of return

P_t = Probability of the out come

r_t = Possible outcomes

n = No. of possible outcomes

Other method for expressing the expected rate or return on investment in common stock.

Here ;

$$E (R_j) = \frac{\phi R_j}{N}$$

Where ;

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

R_j = Return on Stock j.

N = No. of observations

The expected rate of return or holding period rate of return is based upon the expected cash receipts over the holding period and the expected ending or selling price. Depending upon the assumption made about cash receipts and ending price a number of expected rates of returns are possible. These possible rates of return estimated by the investors are summarized in an expected rate of return. The expected rate of return must be greater or equal to the rate of return in order for the investor to find the investment acceptable.

v. Required Rate of Return

Required rate of return is the minimum return that an investor expects at least not to suffer from loss. If an investor gets below the required rate he/she definitely suffers from loss. "While suffering from loss of return an investor must consider the real rate of return, expected inflation and risk. Because consumption is forgone today, the investor is entitled to a rate of return that compensates for this deferred consumption. Since the investor expected to receive an increase in that real goods purchased later and assuming for the moment zero expected inflation and risk, the required rate could equal the real rate of return, in which case it would represent the pure time value of money (Cheney and Mosses, 1995).

The required rate of return is the function of real rate of return and risk. It is the minimum rate of return an investor will accept. The required rate of return for an assets or portfolio of assets can be estimated using the equation for the SML suggested by the CAPM Model.

2.1.6 Meaning of Risk

Different people interpret uncertainty and risk in different ways. To some uncertainty is simply lack of definite outcome, it is anything that could happen on any unknown event which may be favorable or unfavorable. Risk is a chance of happening some unfavorable event or chance of losing some material value. The trouble arises from the fact that despite different interpretations of uncertainty and risk, they are often used interchangeably.

Risk is defined in Webster's Dictionary "as a hazard a peril: exposure to loss or injury" thus for most, risk refers to chance that some unfavourable event will occur. If we engage in the skydiving we are taking a chance with our life skydiving risky. If we bet on the horses, we are risking our money. If we invest in speculative stocks (or really any stock), we are taking a risk in the hope of making an appreciable return (Brigham, Gapenski and Ehrhardt 2001).

Most people view risk is the manner. We just described a chance of loss. In reality, risk occurs when we cannot be certain about the outcome of a particular activity or event. So we are not sure that will occur in the future consequently, risk result from the fact that an action such as investing can produce, more than one outcome in future (Weston and Brigham 1996).

In the basic sense, risk is the chance of financial loss. Assets having greater chances of loss are viewed as more risky than those with lesser chance of loss.

2.1.7 Sources and Types of risk

i. Interest Rate Risk

It is the potential variability of return caused by changes in the market interest rates. If market interest rate rises, then investment value and market price will fall and vice versa. This interest rate risk affects the prices of bonds, stocks, real estate and other investment as well.

ii. Purchasing Power Risk

The risk caused due to the inflation is known as purchasing power risk. Economists measure the rate of inflation by using a price index. The consumer Price Index (CPI) is a popular index in the U.S. The percentage change in the CPI is a widely followed measure of the rate of inflation.

iii. Bull –Bear Market Risk

Bull bear market risk arises from the variability of market returns resulting from alternating bull and bear market forces. 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.

iv. Default Risk

Default risk is concerned with the security issuing firm's inability to meet its obligations. Therefore it is closely related to the financial condition of the firm. In case of default, investor is likely to lose some or all the initial investment made in the company.

v. Liquidity Risk

Liquidity risk is that portion of assets total variability of return which results from price discounts given on sales commissions paid in order to sell the without delay, perfectly liquid assets are highly marketable and suffer no liquidation costs. Illiquid assets are not readily marketable either price discounts must be given or these costs must be incurred by the seller, in order to find a new investor for an illiquid assets. The more illiquid asset is the larger the price discounts/commissions which must be given up to the seller in order to effect a quick sale.

vi. Industry Risk

An Industry is a group of companies that compete with each other to market homogeneous product Industry risk is that portion of an investment's total

variability of return caused by events that affect the products and firms that make up an industry.

vii. Callability Risk

Some bonds and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. Issuer like the call provision because it allows them to buy back outstanding preferred stocks and/or bonds with funds from a newer issue if market interest rates drop below the level being paid on the outstanding securities.

viii. Political Risk

It is the portion of an assets total variability of return caused by changes in the political environment. Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the efforts of various group to improve their relative positions increasing the variability return from the affected assets. Regard less of whether the changes that cause political or by economic interest the resulting variability of return is called political risk are sought by political or by economic interest, the resulting variability of return is called political risk if it is accomplished through legislative, judicial or administrative branches of government. Political risk can be classified as international political risk and domestic political risk.

Types of Risk

There are two types of risk in securities market

Systematic risk (Undiversifiable risk)

Unsystematic risk. (Diversifiable risk)

i. Systematic Risk

The systematic risk is market related. In other word, it arises from the changes in the economy and market conditions for example high inflation, recession, impact of political factors, which are beyond the control of company management. It affects all firms in the market. The portion of the risk is non-diversifiable and cannot be reduced. The systematic risk is rewarded in the form of

risk premium. Sometimes systematic risk is called market risk. Systematic risk affects almost all assets in the economy, at least to some degree, whereas unsystematic risk affects at most a small number of assets. The principle of diversification has an important implication to a diversified investor, only systematic risk matters. It follows that in deciding whether or not to buy a particular individual asset, a diversified investor will only be concerned with that asset's systematic risk. This is a key observation and it allows us to say a great deal about the risks and returns on individual assets. In particular, it is the basis of a famous relationship between risk and return called the security market line. To develop the SML, we introduce the equally famous beta coefficient one of the centerpieces of modern finance. Beta and SML are key concepts because they supply us with at least part of the answer to the questions of how to go about determining the required return on an investment.

ii. Unsystematic Risk

The unsystematic risk is non-market factors related. In other words, it arises from the project-specific factors for example inefficiency of management, failure in new product in production, employee strikes, lawsuits and any other event that is unique to the company. It is inherent to individual companies or projects. This portion of the risk is diversifiable and it is possible to reduce or eliminate through diversification of investments. It is called unique or asset-specific risk (Ross, Westorfield and Jordan 1998).

2.1.8 Capital Assets Pricing Model (CAPM)

Capital assets are the long-term financial as well as real assets and CAPM is based on the pricing of these assets. Modern portfolio theory of Markowitz suggests that the investment decision should be based on the total risk and the price of assets should be based on the total risk and the price of assets should also be determined on the basis of the total risk. But the CAPM, which was developed by William F. Sharpe, John Lintner and Treynor suggests that, any investor can create a portfolio of assets that will eliminate virtually all diversifiable risk, the only relevant risk is non-diversifiable risk and therefore, the investment decision

and the pricing of capital assets should be based on the undiversifiable risk. This is the primary importance of selecting that the price of capital assets should be determined in a way that compensates the systematic risk (Bhattacharai, 2005).

Assumptions of CAPM are as follows:

-) All investors have the same one period investment horizon.
-) No taxes and no transaction cost for buying and selling securities exists.
-) No inflation and no change in the level of interest rates exists.
-) The capital markets are in equilibrium.
-) All investments are infinitely divisible, fractional shares may be purchased in any portfolio or any individual assets.
-) All investor are Markowitz efficient diversifiers who delineate and seek to attain the efficient frontier.
-) An infinite amount of money can be borrowed or lent at the risk free interest rate.

The CAPM reduces the situations to an extreme case. Everyone has the same information and agrees about the future prospects from securities. This means that investors analyze and process information in the same way. There are perfect markets for securities because potential impediments such as finite divisibility, taxes, transaction costs and different risk free borrowing and lending rates have been assumed away. This approach allows the focus to shift from how an individual should invest to what would happen to security prices if every one invested in similar manner. By examining the collective behaviors in the market place, the nature of the resulting equilibrium relationship between each securities risk and return can be developed. The following features of CAPM are described as follows.

i. Capital Market line (CML)

The CAPM assumes that investor can lender borrow at the same risk free rate of interest. In reality, such borrowing is likely to be either unavailable or

restricted in amount. If there are no opportunities to borrow or lend at the risk free rate, the efficient set would be a curve and many combinations of risky securities would be efficient. All the investors face the same efficient set. The different investor will choose different portfolios from the same efficient set because they have different preferences toward risk and return. This means that each investor will spread his or her fund among risky securities in the same relative proportion in order to achieve a personally preferred overall combination of risk and return. This feature of CAPM is often referred to as the separation theorem.

Separation Theorem

The optimal combination of risky assets for an investor can be determined without any knowledge of the investor's preferences towards risk and return. In other words, the optimal combination of risky assets can be determined without any knowledge of the shape of an investor's indifference curves.

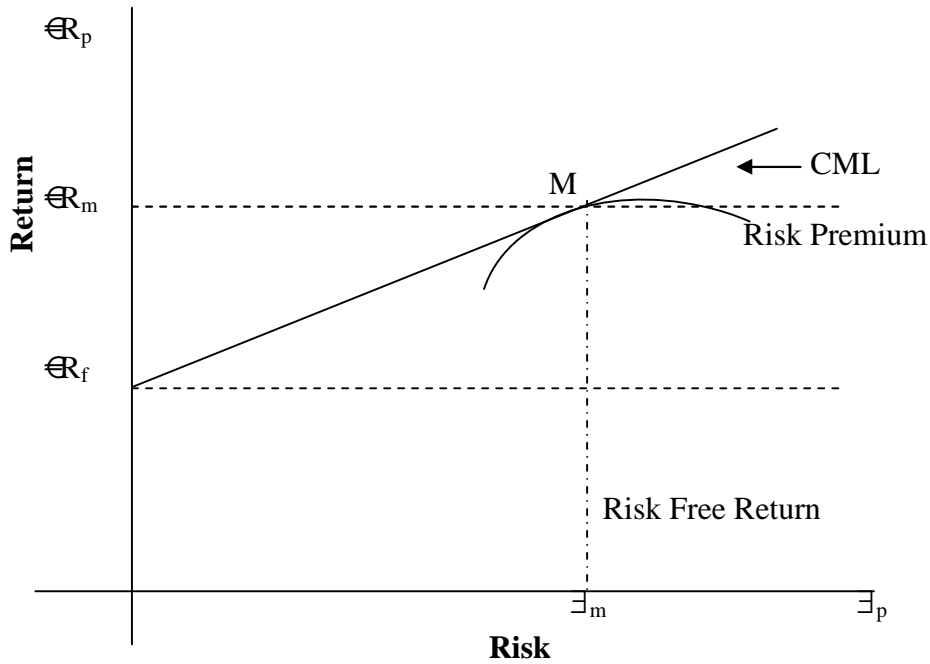
Market Portfolio

The market portfolio is a portfolio consisting of all the securities where the proportion invested in each security corresponds to its relative market value. The relative market value of a security is simply equal to the aggregate market value of the security divided by the sum of the aggregate market values of all securities. It plays a central role in the CAPM because the efficient set consists of an investment in the market portfolio, coupled with a desired amount of either risk-free borrowing or lending.

Efficiency Set

In the CAPM it is simple to determine the relationship between risk and expected return for an efficient portfolio. The figure clarifies more about it.

Figure 2.1: Capital Market Line



Point M represents the market portfolio and R_f represents the risk free rate of return. Efficient portfolio plots along the line starting at R_f and going through M and consist of alternative combinations of risk and return. The linear efficient set of CAPM is known as capital market line (CML). All portfolios other than those using the market portfolio and risk free borrowing or lending lie between the CML. It has an intercept of R_f and a slope $[E(R_m) - R_f] / \sigma_m$. Therefore the equation for the capital market line may be expressed as follows.

Symbolically,

$$E(R_p) = R_f + \frac{R_m - R_f}{\sigma_m} \sigma_p$$

Where,

R_f = Risk free return

R_m = Expected return on market

σ_m = Standard deviation on market portfolio

σ_p = Portfolio risk on efficient

For portfolio on the CML, the expected return is equal to the risk free rate plus a return proportional to the total risk of the portfolio. The slope of the CML is the same for all portfolios on the CML and is the market price of risk.

$$\text{Slope of CML} = \frac{E(R_m) - R_f}{\sigma_m}$$

ii. Security Market Line (SML)

The capital market line (CML) is the relationship between total risk of portfolio σ_p and expected portfolio return $E(R_p)$ which consists of the risk free assets and the market portfolio. However, the total risk of an individual asset should not be used to measure its riskiness. Because some of the risk as reflected in total risk can be eliminated by diversification. Therefore since its beta reflected risk after taking diversification benefits into account, beta rather than σ_i is used to measure individual assets riskiness to investors. The relationship between individual assets riskiness and their required return is set forth in the security market line (SML). The line is drawn in expected return and beta space. It is linear and positively sloped. Irrespective of whether investors can borrow or lend at a risk free rate, all individuals' securities and portfolios are positioned on the security market line. The relationship between an assets return and its systematic risk can be expressed by SML. The equation for the SML is

Symbolically,

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

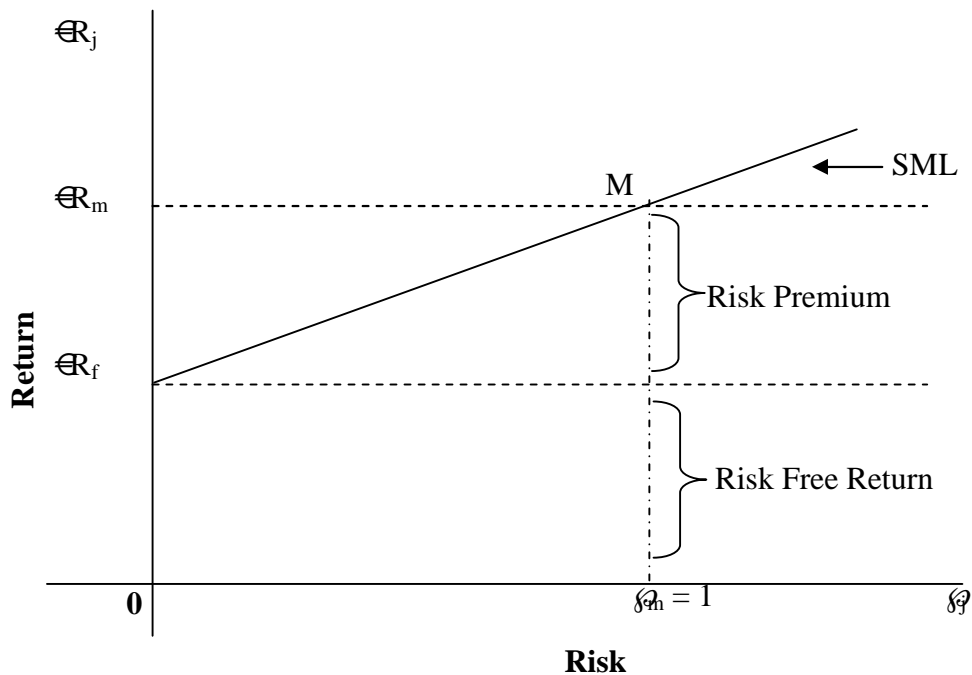
Where,

$E(R_j)$ = Expected return for an assets.

R_f = Risk free rate (usually assumed to be a short –term T – bill rate)
 equals the expected market return (usually based on NEPSE index)
 and

β_j = denotes the assets beta. It is a measure of sensitivity of a stocks return to changes in the average markets returns.

Figure 2.2: Security Market Line (SML)



Here SML starts from risk free asset (R_f) and moved ahead linearly with beta (β) if the securities beta is greater than 1. Then it implies that the securities returns fluctuate more than the market returns. If beta is less than 1, the securities returns are less sensitive to the change in the market. The CAPM theory indicates that how much required rate of return of individual securities for bearing the systematic risk.

2.1.9 Reasons to Manage Risk

The term risk management can mean many things, but in business it involves identifying events that could have adverse financial consequences and then taking actions to prevent or minimize the damage caused by those events. Years ago corporate risk managers dealt primarily with insurance that made sure the firm was adequately insured against fire, theft and other casualties, and that it had adequate liabilities coverage. We know investor dislike risk. We also know that most investors hold well diversified portfolio so at least in theory the only

relevant risk is systematic risk. Therefore if someone asks corporate executives what types of risk they concerned about, someone might expect the answer to be "beta". However this is certainly not the answer you will get. The most likely answer if someone asked a CEO to define risk is something like is the possibility that our future earning and free cash flows will be significantly lower than we expect. There is no proof that risk management adds values, here is several good reasons for companies to manage risk.

i. Debt Capacity

Risk management can reduce the volatility of cash flows, and this decreases the probability of bankruptcy. Firm with lower operating risks can use more debt and this can lead to higher stock prices due to the interest tax shield.

ii. Maintaining the Optimal Capital Budget Overtime

Firms are reluctant to raise external equity due to the high flotation costs and market pressures. This means that the capital budget must generally be financed with debt plus internally generated funds, mainly retained earning and depreciation.

iii. Financial Distress

Financial distress which can range from worrying stockholders to higher interest rates on debt to customer defections to bankruptcy is associated with having cash flows fall below expected levels. Hence risk management can reduce the likelihood of low cash flows of financial distress.

iv. Comparative Advantage in Hedging

Many investors cannot implement a homemade hedging program as efficiently as can a company. Firms generally have lower transaction cost due to a larger volume of hedging activities. Managers of a company know more about the firm's risk exposure to those outside investors. Hence managers can create more effective hedging techniques because of specialized skill and knowledge.

v. Borrowing Costs

Firms sometimes reduce input costs especially the interest rate on debt, through the use of derivative instruments called swaps. Any such cost reduction adds value to the firm.

vi. Tax Effects

Companies with volatile earnings pay more taxes than more stable companies due to the treatment of tax credits and the rules governing corporate loss carry-forwards and carry backs. Moreover, if volatile earnings lead to bankruptcy, then tax loss carry-forwards are generally lost. Therefore our tax system encourages risk management to stabilize earnings.

2.1.10 Highlights About Selected Bank

Nepal Investment Bank Ltd. (NIBL)

Nepal Investment Bank Ltd, previously Nepal Indosuez Bank Ltd., was established in 1986 A.D. as the second joint venture bank in Nepal between Nepalese and French partners. The French partner (holding 50% of the capital of NIBL) was Credit Agricole Indousez, a subsidiary of one the largest banking group in the world. Now this bank is operating under the full ownership of Nepalese promoters and shareholders in 2001 A.D. The name of the bank has been changed to Nepal Investment Bank Ltd. upon approval of bank's Annual General Meeting, Nepal Rastra Bank and company Registrar's office with the following shareholding structure. A group of companies holding 50% of the capital, Rastriya Banijya Bank holding 15% of the capital. Rastriya Beema Santhan holding 15% of the capital. The remaining 20% being held by the General Public. NIBL was listed in NEPSE in 1987A.D.

Himalayan Bank Ltd. (HBL)

Himalayan Bank Ltd. was established in 1993 A.D. It is the fourth joint venture bank in Nepal. In partnership with employee's provident fund and Habib

Bank Ltd, one of the largest commercial bank of Pakistan. HBL is the first joint venture bank managed by Nepalese Chief Executive. Beside commercial banking services, the bank also offers industrial and merchant banking services. Himalayan Bank Limited has always been committed to providing a quality service to its customers with a personal touch. The bank has also planned to adopt new banking technology and already offers unique services such as SMS banking, Internet banking and ATM service etc. Himalayan Bank was listed NEPSE in 1993 A.D.

Everest Bank Ltd. (EBL)

Everest Bank Ltd. (EBL) started its operations in 1994 A.D. with a view and objectives of extending professionalized and efficient banking services to various segments of the society. The bank is providing customer friendly services through its branch Network. All the branches of the bank are connected through Anywhere Branch Banking System (ABBS). EBL was one of the first bank to introduce ABBS in Nepal. Joint Venture partner which hold 20% equity in the bank (Punjab National Bank). It was listed in NEPSE in 1996 A.D.

Nepal Arab Bank Ltd (NABIL)

NABIL Bank Ltd. is the first joint venture commercial bank in Nepal. It was established in 1984 A.D. At the time of establishment NABIL had known as Nepal Arab Bank Limited but now it is known as only NABIL Bank Ltd. It was listed in NEPSE in the year 1985 A.D.

NABIL as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal. Bank is fully equipped with modern technology which includes ATM, Credit card, Internet banking and tele banking. Shareholders are distributed as follows :

50% - is owned by N.B. International Ltd., Ireland.

20% - Local Financial Institution

30% - Nepalese Public

Standard Chartered Bank Ltd. Nepal

Nepal Grindlays Bank Ltd., later changed to Standard Chartered Bank Ltd. This is the third joint venture bank in Nepal was established in 1987 in Collaboration with ANZ Grindlays Bank Plc., Australia. The foreign investor has invested 50% of the total paid up capital and remaining by Nepalese Financial Institution (35%) and general public (15%).

2.2 Research Review

Different research works are carried out by different scholars. Those studies and issues are reviewed in this section, which are related with risk and return analysis, Investment analysis on share.

2.2.1 Review of Journals

Belbase (2004), has studied on "Study and experience less investment." He concludes that the investors should properly analyze the company's performance on which stock he is going to invest. Mr. Belbase in his article has stated the actual behaviour of Nepalese investors towards the investment decision. According to him, "If there is no long term thinking and preparation certainly it will be bad business. Today's business is changing faster than information and technology. Because of this rapid change, it is hard to find the person who knows much more about the business. In this context, it is really challenging for those who knows very little about profit, loss and book value and tried to be shareholder."

Share market is the only market that is affected by Nepal's peace and security, political condition, change of the government and the change occurred in the world stock market. In such a condition, how investment on the share can be made secure? The profit and loss of the company should be watched by the efficient person or by the experts. The most important thing is to make own inquiry about the companies and invest on them. For example, we find lots of frauds in the stock markets that used to say this is Mt. Everest by showing the

Fishtail (Machhapuchhre). The clever man is that who saves himself from such persons."

As the current study is being confined to the risk and return factors related to common stock of commercial banks only. So it has a limited frame of study but the valuable studies reviewed above are pioneer for this study to carry out.

Paudel (2002), has studied on "Investing in shares of commercial banks in Nepal." in terms of risk and return. He had found out that the development of shares trading is not organized.

The investors are not very conscious about the risk and return characteristics of common stock in Nepal. They do not seem to be reasonable for Nepalese shares. The shares with higher standard deviation however, produced higher return, the portion of unsystematic risk for that share is very large. Although they have low systematic risk, they distribute high return to investors. The beta coefficient of such types of share was seemed to be negative. The risk per unit of return as measured by CV is less than that of market as a whole. It was found that most of the shares of Nepal are defensive stocks having beta less than 1. Theoretically, the market price of overpriced shares will fall in order to increase the expected return or the market price of under priced shares will rise to decrease expected return so the equilibrium condition would be met.

Akhigne and Whyte (2004), in their research paper "The Gramm–leach Billey Act " of 1999: Risk implications for the financial service industry have focused on risk implication of banking and focused on risk implication of banking and private sectors. The research paper has included many other studies some of the studies find that bank expansion into banking activities can affect of events that permitted only limited entry by banks into non banking activities. The study is conducted on systematic, unsystematic and total risk, such risk are calculated by using statistical tools i.e variance, standard deviation, t-statistical and signed rank which is recently used by Aminud, Delong and Saunders (2002). The study has included 340 banks for the sample size then they partition two sub samples: 46 large banks and 294 small banks. The major finding of the study is that evidence of a significant decline is systematic risk for banks securities firm and insurance

companies but a significant increase in total and unsystematic risk for the banks and insurance company. This study has included five years period data. The study also found that bank and insurance companies are less risky than securities business. So if security firms want to decline in risk. Security firm can be explained by their ability to diversify into less risky banking and insurance activities. The research paper result suggests that regulators should carefully monitor and supervise banking activities in the new era of financial modernization to mitigate adverse effects from the increase in risk.

2.2.2 Review of Thesis (Related Studies)

Several thesis works have been conducted ahead by various researchers regarding the risk and return analysis of commercial banks, listed companies. Some of them are presented as follows:

Upadhaya (2001), conducted a research entitled, "Risk and Return on Common Stock Investment of Commercial Bank in Nepal". His study is based on descriptive and analytical research design, which covered the five years period from 1994-1999. The main objective of the study was to analyze the risk and return of the common stock of commercial banks in Nepalese stock market, the study focused on the common stock of commercial banks. One of the objectives related to this study was to evaluate common stock of listed commercial banks in terms of risk and return. The major finding of the study is that the expected return on the common stock of the NGBL was maximum, which is very high rate of return. Other common stocks of having higher return is common stock of NBBL and EBL with more than 59 percent expected return. Expected return of NABIL is also favorable with 25 percent, common stock of the NGBL is most risky and common stock of SBI is least risky. Mr. Upadhaya has focused on changing environment of Nepalese business and economy but did not focus on relationship between closing MPS and EPS.

Joshi (2004), has conducted a research on "Risk and Return Analysis of Common Stock of Five Listed Commercial Banks". The main objective of the study was to assess the risk associated with return on common stock investment on

the basis of selected tools. For the study, the researcher has used five years data 1998/ 1999 to 2002/03.

For analysis, financial and statistical tools are used. He has used arithmetic mean to calculate the return, standard deviation and coefficient of variations, which are used to measure unsystematic risk and beta coefficient. The measurement explains sensitivity or volatility of the stock with market and individual banks. Correlation is a statistical tool that is used to measure relationship between risk and return. The researcher has also used t- test to calculate hypothesis. The major findings of his study are that Banking sector has the expected return of 21.77 percent, risk of 36.10 percent and CV of 1.66, similarly finance and insurance sector has 21.77 percent, 36.10 percent and 1.66, Hotel sector has 10.16 percent, 72.40 percent, 7.123, Trading sector has 6.86 percent, 80.68 percent, 11.76 other sectors have -16.61 percent, 50.45 percent, 3.037. Regarding the market, market expected return of 10.20 percent, risk of 39.57 Percent and CV of 3.88 SCBL has the maximum market capitalization and NBBL has the minimum market capitalization. Market capitalization as well as NEPSE index has been heavily influenced by banking sectors. If investors wish to generate higher return then they should bear high risk and invest in the share of SCBNL and if they are risk averters and they want to invest in single assets, they can invest in the shares of NIBL of HBL because these two stocks have lower risk that of portfolio risk.

Bhatta (1996), has conducted a study on "Assessment of the Performance of Listed Companies". The study is based on risk and return of listed companies from 1990 to 1995. The main objective of the study was to analyze the performance of listed companies in terms of risk and return. In this study, financial and statistical tools are used to analyze the data. The major finding of the study is that a highly significant positive correlation has been addressed between risk and return character of the company. Investors generally accept higher return from those stocks, which associates higher risk. Nepalese capital market is not efficient so the stock price does not contain all the information related to the market and company. Neither investors analyze the overall relevant information relating to the

market and company itself, nor does the member of the stock exchange try to realize.

Investors in Nepal have not yet practice to invest in portfolio of securities. Analysis of two securities portfolio shows that risk can be minimized if the correlation perfectly negative. In this situation risk can be diversified, but when there is perfectly positive correlation between the return of two securities, the risk is undiversifiable.

Kansakar (2004), has conducted a study on "A Study on Risk and Return Analysis of Common Stock Investment." with special reference to manufacturing company in Nepal. This study is based on primary data as well as secondary, from FY 1996/97 to 2001/02. Financial and statistical tools were used for the analysis of the data. The main objectives of the study is to assess the risk associated with return on common stock investment with special references to manufacturing companies in Nepal. The major finding of the study are expected return on the common stock of Nepal lever limited had the highest and lowest of Arun Vanaspati Ghee Udyog Ltd. with negative return. Risk is measured in terms of standard deviation. From this point of view, Nepal lever Ltd. is the most risky assets and Bottler Nepal Ltd. (Balaju) is the least risky assets. All stocks of manufacturing companies are under priced except the Arun Vanaspati Ghee Udhdyog is over priced.

Takhachhe (2006), has conducted a research on "Risk Analysis on Common stock of Listed Commercial Banks." His study is based on descriptive and analytical research design, which covers the six years period from 1998/99 to 2003/004. The main objective of the study was assess the risk and return on common stock investment of listed commercial banks. The major findings of the study was that the expected rate of return on common stock of NIBL was highest i.e 56.198% and the SCBNL has lowest expected rate of return i.e. 19.09%. The common stock of EBL has highest risk with 66.33% and the common stock of SCBNL has the lowest risk with 37.16%.

Lamichhane (2006), has conducted a research on "Risk and Return of listed commercial Banks in Nepal." The main objective of the study was to analyse the risk and return analysis of listed commercial banks in Nepal. For the study, the researcher has used 10 years of data from 1995 to 2005. She has used financial and statistical tools to calculate the return, standard deviation, coefficient of variation and beta coefficient. The major findings of her study are that the average rate of return of NABIL, HBL, NIB and EBL are 30.88%, 37.42%, 27.22% and 45.31% respectively. In the year 2000 all the sampled banks have negative return or no return. Annual return of NABIL, HBL, NIB and EBL is -0.49, -0.25, -0.14 & -0.312 respectively and this year NEPSE movement is also negative i.e. -0.43. In terms of risk, common stock of EBL is most risky while HBL is least risky. If investor wants to invest the share of banking sector he/she can purchase the share of HBL. Beta of EBL is highest and beta of NIB is lowest. It shows that NIB is least risky and EBL is most risky. From the study, it is concluded that none of the share prices are in equilibrium because all the sampled bank's average rate of return is more than required rate of return.

Karki (2006), has conducted a study on "Risk and Return Analysis of Listed Companies." The main objective of the study was to analyse the risk and return situation of the different listed commercial banks & to analyse whether it is better to invest in portfolio or individual stock. The study has covered five years of data from 1998/99 to 2002/003 of five commercial banks listed in NEPSE. The major findings of this study is that considering the trend of the price movement of the shares of selected banks, it reveals that the share price of almost all the banks is decreasing but there is a sign of progress seen in the share price of listed companies. When considering the return of SCBNL, it is 73.30% which is maximum but its risk is 123.55% which is also maximum, but if risk taken into account for consideration NIBL has the minimum risk. For the which stock should be selected, the best way of analysis is coefficient of variation (CV). As CV of SCBNL is 0.6855 the stock of SCBNL is the best for investment.

CHAPTER – III

RESEARCH METHODOLOGY

Research methodology describes the methods and processes applied in the entire aspects of the study. It is a systematic way to solve the research problem. It is necessary for researcher to know not only the research method but also the methodology. This chapter provides the overall framework or plan for the collection, presentation and analysis of data required to fulfill the objectives of the study. It also specifies the method and procedure for acquiring the information needed to solve the research problems. This chapter includes research design, population & sample, sources of data, data collection procedure, data analysis and limitation of the methodology.

3.1 Research Design

Research design is one of the most important elements of the thesis. It is the out line of the logic of the study. The research design is the outline of the plan to test the hypothesis and should include all the procedures that follow. The research design refers to the conceptual structure within which the research is conducted. As well set of research design is necessary in order to make any type of research which fulfills the objectives of the study.

A research design is the arrangement of condition for collection and analysis of data in a manner that aims to complete relevance to the research purpose with economy in procedure. The main objective of the research design is to analyze the risk and return on common stock of listed commercial banks which is based on historical data. Both descriptive and analytical research approach is adopted.

3.2 Population and Sample Size

For the purpose of this study those commercial banks are taken as population which have completed five years of operation period and listed in Nepal stock exchange (NEPSE). There are altogether twenty-five commercial banks in Nepal out of these twenty-one commercial banks are listed in NEPSE. So twenty-one commercial banks are taken as the population, only five commercial banks are taken as a sample of the study. Convenience sampling method is adopted for the study.

3.3 Sources of Data

Basically the study is based on secondary data. The data are collected from the balance sheet, profit and loss account of concerned banks, annual reports from Nepal stock exchange. And other data and information are collected from related institutions and authorities like NRB, SEBON, Ministry of finance. Website has been visited to take operational data of commercial banks.

3.4 Data collection Procedures

All the data for the present study have been collected from secondary sources. The annual reports of commercial banks have been taken from SEBON. Similarly, NEPSE price and sector price have been taken from NEPSE. NRB'S website nrb.org.np also visited to collect the other necessary data. Then collected data were recorded in master sheet manually. Data were entered to spread sheet to work out statistical and financial analysis. These data are also used to prepare figures and tables. To process the data of the present study manual and computer based programs were used.

3.5 Analysis of Data

Before, analysis of data are presented systematically in the formats of tables, charts and graphs. In this study a various financial and statistical tools are used to achieve the objectives of the study. Research variable and tools are used to examine the financial strengths and weaknesses of the bank. The various financial and statistical tools applied in this study are presented as follows :

3.5.1 Financial Tools

3.5.1.1 CAPM (Capital Assets Pricing Model)

As portfolio deals with the selection of optimal portfolio, capital market theory deals with an equilibrium model of assets prices. Especially, capital market theory postulates the ex-ante risk return relationship of individual assets as well as portfolio under equilibrium conditions.

The measure of systematic risk permits investors to evaluate an asset's required rate of return to the systematic risk of the assets. In general, the CAPM indicates that the asset's required return should be related to the risk free rate of return plus a risk premium based on the beta of the assets.

CAPM is a model that describes the relationship between risk and required return. In this model a security's expected return is the risk free rate plus a premium based on the systematic risk of the security. The model is

$$E(R_j) = R_f + \beta_j (E(R_m) - R_f)$$

Where,

$E(R_j)$ = Expected rate of return of security j

R_f = The rate of return of riskfree assets.

$E(R_m)$ = Expected return on market portfolio

β_j = (Beta coefficient) = $\text{COV}(R_j, R_m) / \text{VAR}(R_m)$ measures the undiversifiable risk of security j (Weston and Copeland 1996).

The CAPM model uses the theory of security market line (SML) to show the relationship between required return and beta (β).

"The SML equation shows the relationship between securities risk and rates of return. The return required for any security j is equal to the risk free rate plus market risk premium times the securities beta" (Cheney and Edward, 1988).

3.5.2 Definition of Key-Terms

3.5.2.1 Market Price of Stock (MPS)

One of the major data of this study is market price of stock. There are three types of market prices of different commercial banks i.e. high, low and closing. Among high, low and closing price, each year closing price has been taken as the market price of the stock which has specific time of span of one year and the study has focused in yearly basis. To get the real average, volume and price transaction in the stock and duration of time of each transaction in the whole year are essential. Hence, the closing price is used as market price of stock, which has a specific time span of one year and study has focused in an annual basis.

3.5.2.2 Dividend Per Share (DPS)

Dividend is a reward to the shareholder for the investment. It is required for computing the rate of return. If the company declares stock dividend (Bonus share), it is difficult to obtain the amount that really shareholders has gained. In this case, the no. of shares are increased and simultaneously price of stock declines. To get the actual amount of dividend there has been developed a model considering practical as well as theoretical aspects.

a) In case of stock dividend

$$\text{Total dividend} = \text{Cash dividend} + (\text{stock dividend}\% \times \text{Par Value}).$$

b) In case of right issued at par.

$$\text{Total Dividend} = \text{Cash dividend} + \text{Value of right}$$

Where,

$$\text{Value of right} = \frac{P_o - S}{N + 1}$$

P_o = Next year's market price

S = Par Value

N = No of rights required to be purchase one share.

3.5.3 Statistical Tools

3.5.3.1 Expected Rate of Return

The expected return is the income received in an investment.

Symbolically

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

Where,

$E(R)$ = Expected rate of return

D_t = Dividend for time t

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

P_t = Price of stock at time t

3.5.3.2 Average Rate of Return

Average rate of return is calculated by using arithmetic mean instead of geometric mean.

$$R_j = E(R_j) = \frac{\phi R_j}{N}$$

$E(R_j)$ = Expected rate of return

ϕR_j = Summation of the return

N = No. of observations

3.5.3.3 Standard Deviation (σ_j)

It is a quantitative measure of the total risk. It is the square root of the variance and measures the total risk on common stock. The formula for calculating the standard deviation is ;

$$\sigma_j = \frac{(R_j - \bar{R}_j)^2}{N}^{1/2}$$

Where ;

Ξ_j = standard deviation of return on stock j

R_j = Expected rate of return on stock j

\bar{R}_j = The average mean return on stock j

N = No. of observations

3.5.3.4 Coefficient of Variation (CV)

The coefficient of variation is the ratio of the standard deviation of a distribution to the mean of that distribution. It is applicable to calculate the risk per unit of the expected return.

$$CV = \frac{\Xi_j}{\bar{R}_j}$$

Where;

Ξ_j = standard deviation of stock j

\bar{R}_j = Average mean return of stock j

3.5.3.5 Beta Coefficient (β)

The beta coefficient is an index of systematic risk. Beta coefficient may be used for ranking the systematic risk of different assets. If the beta is larger than 1 then the assets is more volatile than market, which is called aggressive assets. If the beta is less than 1, the assets is defensive assets, its price fluctuation is less volatile than the market. The formula of beta coefficient is ;

$$\beta_j = \frac{COV_{(j, m)}}{\Xi_m^2}$$

Where;

β_j = beta of security j

Ξ_m^2 = variance of market

$COV_{(j, m)}$ = Covariance between security j and market

$$COV (R_j, R_m) = \frac{\sum [(R_j - \bar{R}_j) \times (R_m - \bar{R}_m)]}{N - 1}$$

3.5.2.6 Correlation Coefficient (r)

Correlation coefficient is the relationship between two variables. Correlation coefficient always lies in the range of +1 to -1. A positive correlation coefficient indicates that the return from two securities generally move in the same direction and vice-versa. Correlation coefficient is used to test the significant between risk and return.

$$r = \frac{COV_{(x, y)}}{\Xi_x \times \Xi_y}$$

Where;

r = Correlation coefficient

$COV_{(x, y)}$ = Covariance between x & y

Ξ_x = Standard deviation of x

Ξ_y = Standard deviation of y

3.5.3.7 Systematic Risk

Systematic risk is also known as undiversifiable risk. This risk is that portion of total variability in return caused by market. It occurs due to the changes in macro-economic factors like interest rate, inflation, political changes, technology etc.

$$\text{Systematic Risk} = \beta^2 \times \Xi_m^2$$

Where;

β^2 = Square of Beta of stock j

Ξ_m^2 = Variance of market

3.5.3.8 Unsystematic Risk

It is known as diversifiable risk. This type of risk can be largely eliminated by holding a diversified portfolio of investments. It occurs due to internal factors like strikes, management errors, advertising etc.

Unsystematic risk = $\text{Var}(j) - \text{Systematic risk}$

3.6 Limitation of the Methodology

The study is carried out within the framework of descriptive research design and analytical research design. This study also has certain limitations and they are.

-) This study is bounded to only those commercial banks which are taken as population and the study period is taken from fiscal year 2002/03 to 2006/07. Therefore, study may not be able to present the whole scenario.
-) In this research, the major portion of analysis and interpretations have been done on the basis of the availability of secondary data and information so the consistency of finding and analysis is dependent upon the reliability of secondary data and information.
-) In this research the dividend has been taken only as cash dividend.

CHAPTER- IV

4. DATA PRESENTATION AND ANALYSIS

This chapter is the main body of the study, it focuses on the data analysis and data presentation of the sampled banks. The study covers five years period from fiscal year 2002/03 to 2006/07. This chapter consists of historical returns, average return, coefficient of variation, standard deviation, beta, correlation of sampled banks. Returns are calculated to evaluate the return position of sampled banks. The standard deviation is used to measure diversify risk. It has also drawn different tables and figures to make the result more simple and understandable.

4.1 Analysis of Individual Commercial Bank

Here below analysis of all the selected banks are made. Five commercial banks listed in NEPSE are taken as sample and they are NABIL, NIBL, SCBNL, EBL and HBL. The study period covers five years from 2002/03 to 2006/07.

4.1.1 Analysis of Nepal Investment Bank Ltd. (NIBL)

The historical return, average rate of return, standard deviation and coefficient of variation has been presented in table 4.1.

Table 4.1 Historical return, average rate of return and standard deviation of NIBL

Yr	Closing Price (Rs)	Dividend Per share (Rs)	$R_j = \frac{(P_t - P_{t-1}) + Div_t}{P_{t-1}}$	$(R_j - \bar{R}_j)^2$
2002/03	795.00	20.00	-	-
2003/04	940.00	15.00	0.20	0.0036
2004/05	800.00	12.50	-0.14	0.16
2005/06	1260.00	20.00	0.6	0.1156
2006/07	1729.00	5.00	0.38	0.0144
			$\bar{R}_j=1.04$	0.2936

Source: NEPSE and Annual Report of NIBL

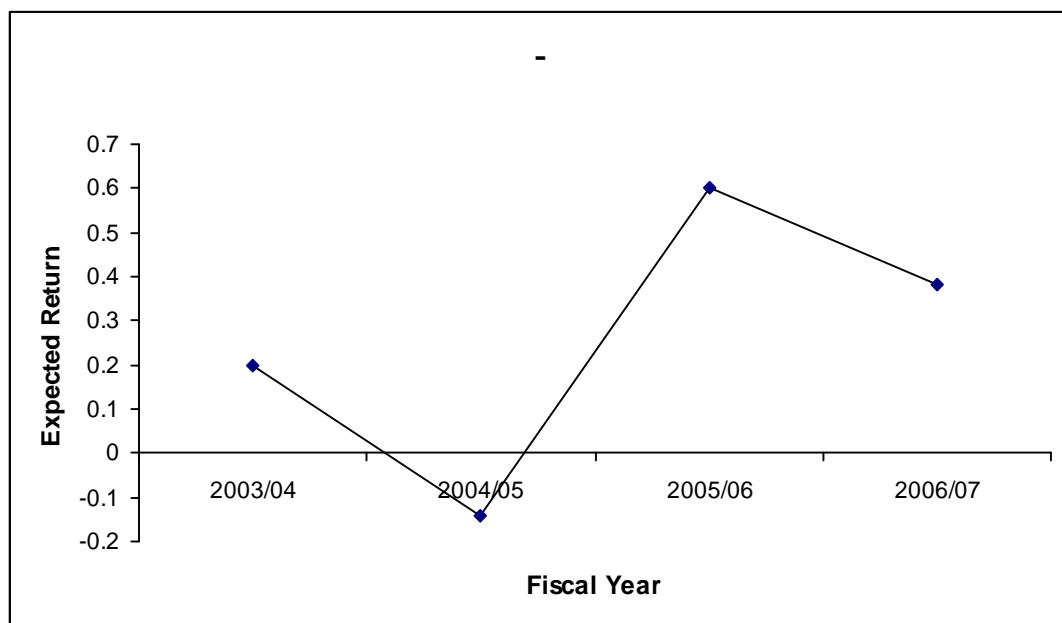
$$\begin{aligned} \text{Average rate of return } (\bar{R}_j) &= \frac{\sum R_j}{N} = \frac{1.04}{4} \\ &= 0.26 = 26\% \end{aligned}$$

$$\begin{aligned} \text{Standard deviation } (\Xi_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{N - 1}} \\ &= \sqrt{\frac{0.2936}{4 - 1}} \\ &= 0.31 = 31\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of variation (CV)} &= \frac{\Xi_j}{\bar{R}_j} = \frac{0.31}{0.26} \\ &= 1.19 \end{aligned}$$

From the table 4.1 it shows the closing market price per share of Nepal Investment Bank Ltd. is maximum in the year 2006/07 i.e. Rs. 1729.00 and in year 2002/03 it has a least closing market price i.e. Rs. 795.00 Nepal Investment Bank has maximum return in year 2005/06. Average return of NIBL is 26% and standard deviation and coefficient of variation are 31% and 1.19 respectively.

Figure 4.3: Historical Return Movement of NIBL



The figure 4.3 indicates the decreasing trend of NIBL the curve shows that the minimum point of return in given five years is in year 2004/05 i.e. negative (-0.14). In the year 2005/06 the return is maximum i.e. 0.6. Overall performance of NIBL is weak.

4.1.2 Analysis of Everest Bank Ltd. (EBL)

The Historical return, average rate of return, standard deviation and coefficient of variation has been presented in table 4.2

Table 4.2 Historical return, average return and standard deviation of EBL.

Yr	Closing Price (Rs)	Dividend Per share (Rs)	$R_j = \frac{(P_t - P_{t-1}) + Div_t}{P_{t-1}}$	$(R_j - \bar{R}_j)^2$
2002/03	445.00	20.00	-	-
2003/04	680.00	20.00	0.57	0
2004/05	870.00	20.00	0.31	0.0676
2005/06	1379.00	20.00	0.61	0.0016
2006/07	2430.00	10.00	0.77	0.04
			$\bar{R}_j = 2.26$	0.1092

Source: NEPSE and Annual Report of EBL

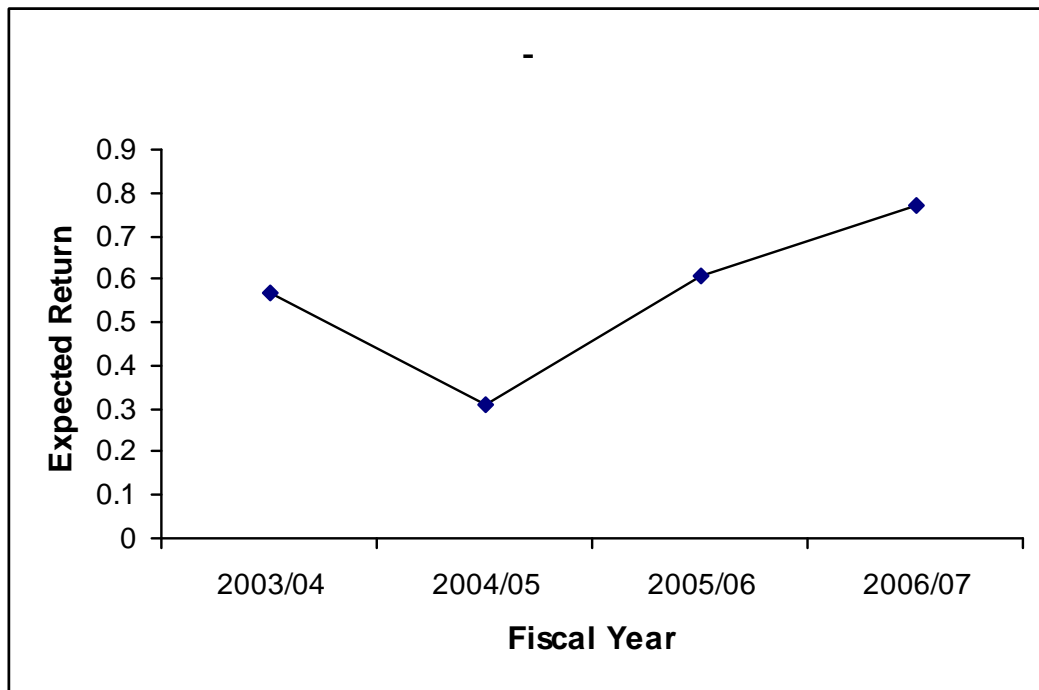
$$\begin{aligned} \text{Average rate of return } (\bar{R}_j) &= \frac{\sum R_j}{N} = \frac{2.26}{4} \\ &= 0.57 = 57\% \end{aligned}$$

$$\begin{aligned} \text{Standard deviation } (\Xi_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{N - 1}} \\ &= \sqrt{\frac{0.1092}{4 - 1}} \\ &= 0.19 = 19\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of variation (CV)} &= \frac{\Xi_j}{\bar{R}_j} = \frac{0.19}{0.57} \\ &= 0.33 \end{aligned}$$

Table 4.2 shows the closing market price per share of Everest Bank which is maximum in the year 2006/07 and it has a least closing market price i.e. Rs. 445.00 in the year 2002/03. Everest bank has maximum return in year 2006/07. Average return of EBL is 57% and standard deviation and coefficient of variation is 19% and 0.33 respectively. The trend line of EBL over the study period has shown in fig. 4.2

Figure 4.4: Historical Return Movement of EBL



The trend of EBL is increasing upward. In the given study period EBL has maximum return in the year 2006/07 i.e. 0.77. EBL has minimum return in the year 2004/05 i.e 0.31. After 2004/05 historical return of EBL is increasing.

4.1.3 Analysis of Nepal Arab Bank Ltd. (NABIL)

Market price, dividend, Historical return of NABIL over the study period has been presented in table 4.3

Table 4.3 Historical return, average return and standard deviation of NABIL.

Yr	Closing Price (Rs)	Dividend Per share (Rs)	$R_j = \frac{(P_t - P_{t-1}) + Div_t}{P_{t-1}}$	$(R_j - \bar{R}_j)^2$
2002/03	735.00	50.00	-	-
2003/04	1000.00	65.00	0.45	0.0675
2004/05	1505.00	70.00	0.58	0.0169
2005/06	2240.00	85.00	0.55	0.0256
2006/07	5050.00	13.00	1.26	0.3025
			$\bar{R}_j = 2.84$	0.4125

Source: NEPSE and Annual Report of NABIL

$$\begin{aligned} \text{Average rate of return } (\bar{R}_j) &= \frac{\sum R_j}{N} = \frac{2.84}{4} \\ &= 0.71 = 71\% \end{aligned}$$

$$\begin{aligned} \text{Standard deviation } (\sigma_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{N - 1}} \\ &= \sqrt{\frac{0.4125}{4 - 1}} \\ &= 0.37 = 37\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of variation (CV)} &= \frac{\sigma_j}{\bar{R}_j} = \frac{0.37}{0.71} \\ &= 0.52 \end{aligned}$$

The closing price of NABIL is maximum over the study period of Rs. 5050.00 in the year 2006/07 and in this year NABIL has the maximum return of 1.26. Average rate of return of NABIL is 71%. Standard deviation and coefficient of variation is 37% and 0.52 respectively.

Figure 4.5 : Historical return movement of NABIL

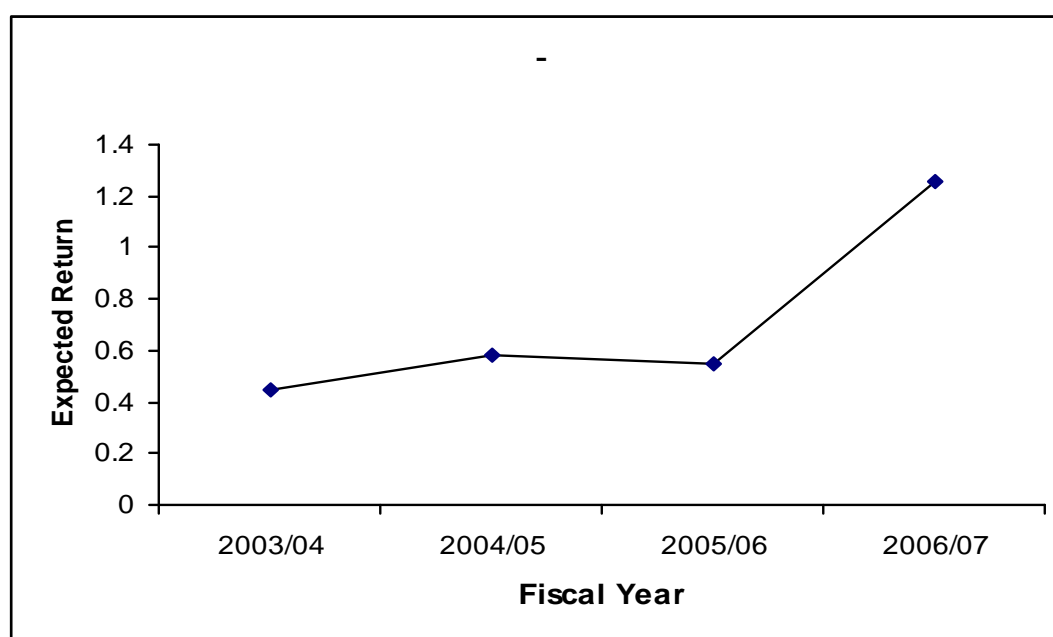


Figure 4.5 shows the trend of NABIL which is increasing upward. In the year 2003/04 NABIL has the minimum return of 0.45 and the maximum return of 1.26 in the year 2006/07

4.1.4 Analysis of Standard Chartered Bank Nepal Ltd. (SCBNL)

The Historical return of SCBNL over the study Period has been presented in Table 4.4

Table 4.4 Historical return, average return and standard deviation of SCBNL.

Yr	Closing Price (Rs)	Dividend Per share (Rs)	$R_j = \frac{(P_t - P_{t-1}) + Div_t}{P_{t-1}}$	$(R_j - \bar{R}_j)^2$
2003/03	1640.00	110.00	-	-
2003/04	1745.00	110.00	0.13	0.1024
2004/05	2345.00	110.00	0.41	0.0016
2005/06	3775.00	120.00	0.66	0.0441
2006/07	5900.00	80.00	0.58	0.0169
			$\bar{R}_j = 1.78$	0.165

Source: NEPSE and Annual Report of SCBNL

$$\begin{aligned} \text{Average rate of return } (\bar{R}_j) &= \frac{\sum R_j}{N} = \frac{1.78}{4} \\ &= 0.45 = 45\% \end{aligned}$$

$$\begin{aligned} \text{Standard deviation } (\Xi_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{N - 1}} \\ &= \sqrt{\frac{0.165}{4 - 1}} \\ &= 0.24 = 24\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of variation (CV)} &= \frac{\Xi_j}{\bar{R}_j} = \frac{0.24}{0.45} \\ &= 0.53 \end{aligned}$$

In above table 4.4 the closing market price per share of SCBNL is maximum in year 2006/07. In year 2005/06 the historical return is 0.66, which is maximum in the study period. Average rate of return of SCBNL is 45%. Standard deviation is 24% and coefficient of variation is 0.53. The trend line of historical return over the study period has been depicted in fig. 4.4.

Figure 4.6 : Historical Return Movement of SCBNL

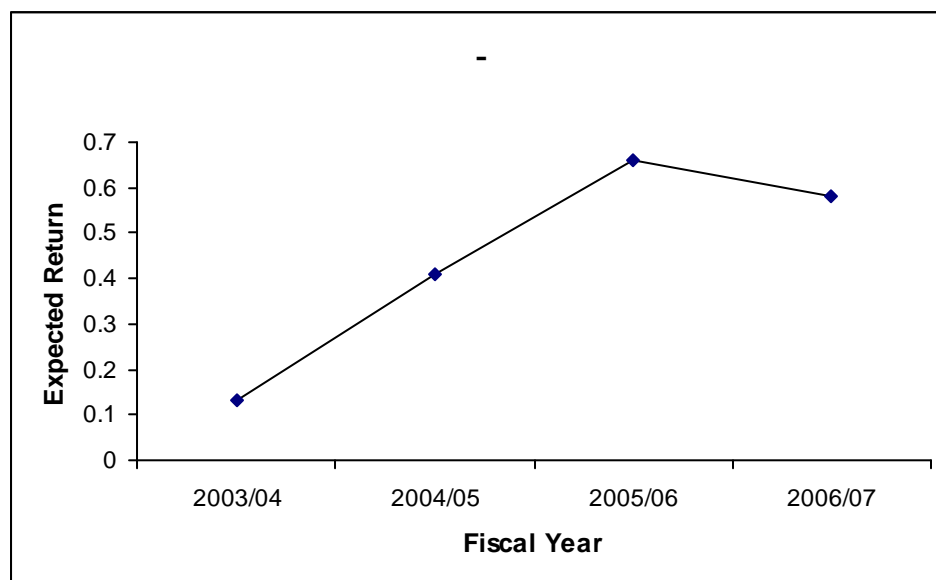


Figure 4.6 shows the trend of SCBNL which is decreasing downward. SCBNL has the maximum historical return in the year 2005/06. i.e.0.66. Average

rate of return of SCBNL is 45%. Standard deviation is 24% and coefficient of variation is 0.53.

4.1.5 Analysis of Himalayan Bank Ltd. (HBL)

The Historical return of HBL over the study period has been presented in table 4.5.

Table 4.5 Historical return, average return and standard deviation of HBL.

Yr	Closing Price (Rs)	Dividend Per share (Rs)	$R_j = \frac{(P_t - P_{t-1}) + \text{Div}_t}{P_{t-1}}$	$(R_j - \phi R_j)^2$
2002/03	836.00	25.00	-	-
2003/04	840.00	20.00	0.03	0.0484
2004/05	920.00	11.58	0.11	0.0196
2005/06	1100.00	30.00	0.23	0.0004
2006/07	1760.00	15.00	0.61	0.1296
			$\phi R_j = 0.98$	0.198

Source: NEPSE and Annual Report of HBL

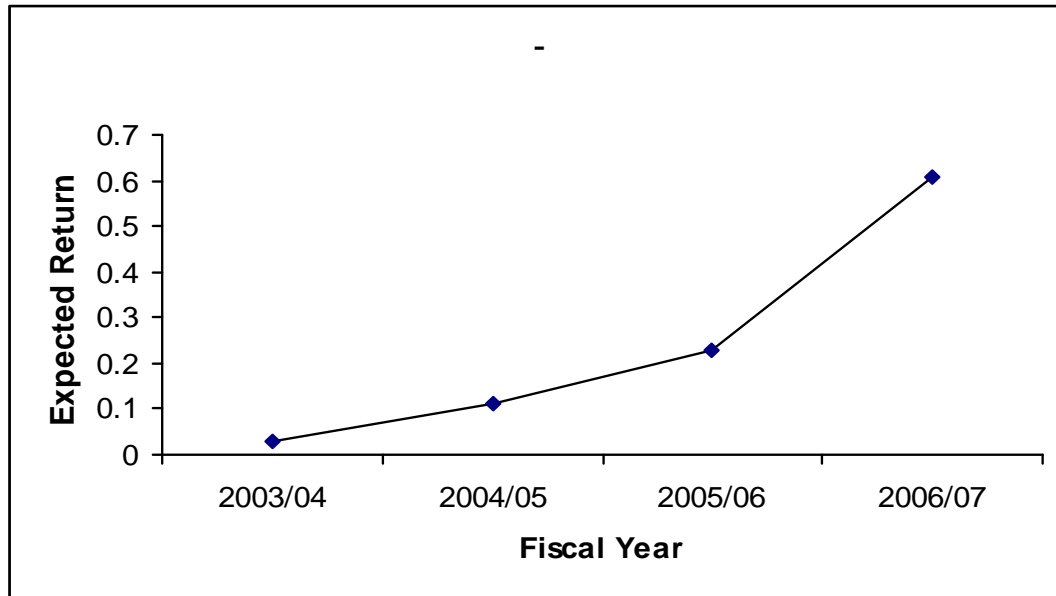
$$\begin{aligned} \text{Average rate of return } (\bar{R}_j) &= \frac{\phi R_j}{N} = \frac{0.98}{4} \\ &= 0.25 = 25\% \end{aligned}$$

$$\begin{aligned} \text{Standard deviation } (\Xi_j) &= \sqrt{\frac{(R_j - \bar{R}_j)^2}{N}} \\ &= \sqrt{\frac{0.198}{4}} \\ &= 0.26 = 26\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of variation (CV)} &= \frac{\Xi_j}{\bar{R}_j} = \frac{0.26}{0.25} \\ &= 1.04 \end{aligned}$$

From the given table 4.5, the closing market price per share of HBL is maximum in year 2006/07 i.e. Rs. 1760.00. In year 2006/07 the historical return is 0.61 which is maximum in the study period. Average rate of return of HBL is 0.25, standard deviation is 0.26 and coefficient of variation is 1.04. The trend line of historical return over the study period has been depicted in figure 4.5.

Figure 4.7 : Historical return movement of HBL



The trend of HBL is in an increasing pattern. The curve shows that the return of HBL is increasing. The maximum point of return is 0.61 which is in the year 2006/07 and the minimum point of return is 0.03 in the year 2002/03.

4.2 Analysis of Historical Return of Sampled Banks

According to the result obtained from the previous section 4.1, the comparative analysis of historical return of sampled banks over the study period has been presented in Table 4.6

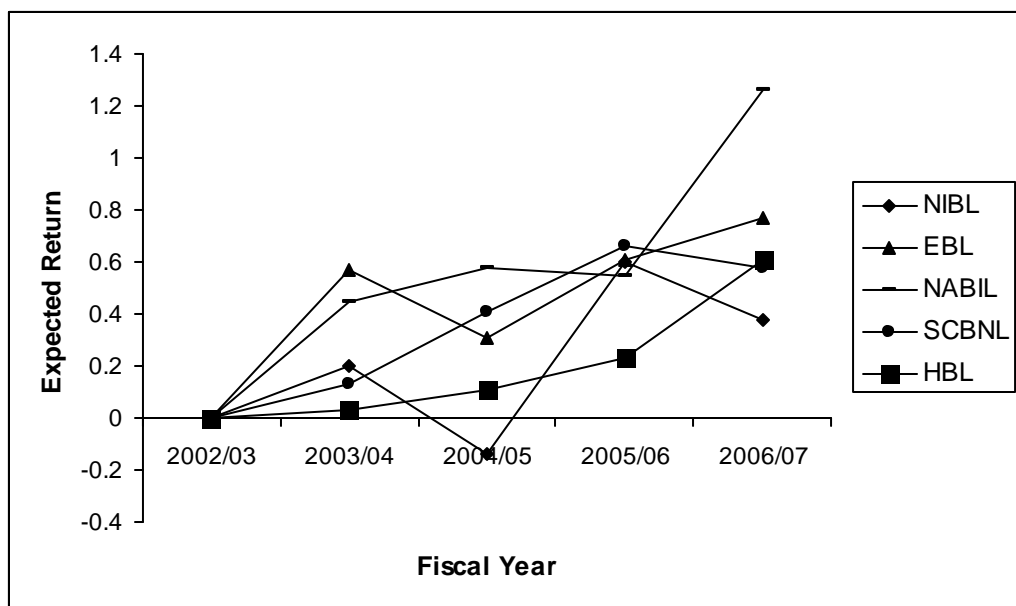
Table 4.6 Comparative Analysis of Historical Return of Sampled Banks

YEAR	NIBL	EBL	NABIL	SCBNL	HBL
2002/03	-	-	-	-	-
2003/04	0.20	0.57	0.45	0.13	0.03
2004/05	-0.14	0.31	0.58	0.41	0.11
2005/06	0.6	0.61	0.55	0.66	0.23
2006/07	0.38	0.77	1.26	0.58	0.61
Average	0.26	0.57	0.71	0.45	0.25

Source: Table 4.1 to 4.5

From the table 4.6, in the year 2006/07 EBL NABIL and HBL has the highest return but SCBNL and NIBL has the highest return in the year 2005/06. The average rate of return of HBL is the lowest than other sampled banks, i.e. 0.25 and NABIL has the highest return i.e. 0.71. Overall condition of NABIL is better among the sampled banks because it has positive return and the highest return in the year 2006/07 i.e. 1.26. EBL, NABIL and HBL returns are increasing in positive direction whereas NIBL and SCBNL returns are decreasing way. NIBL has the negative return in the year 2004/05.

Figure 4.8: Comparative Analysis of Historical Return of Sampled Banks



4.3 Analysis of Market Risk and Return

In the context of Nepal, there is only one stock market which is NEPSE. It represents the overall capital market movement. Capital market indicates overall share price of listed companies where twenty-one companies were listed till the study period. In this section, we have calculated the market return. The data has been taken from annual report of NEPSE. The market return, standard deviation and coefficient of variation over the study period have been presented in table 4.7.

Table 4.7 Calculation of Market Return, Standard Deviation and Coefficient of Variation

Year	NEPSE Index (NI) closing	$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$	$(R_m - \bar{R}_m)^2$
2002/03	204.9	-	-
2003/04	222	0.08	0.0841
2004/05	286.7	0.29	0.0064
2005/06	386.8	0.35	0.0004
2006/07	683.9	0.77	0.16
Average		$\bar{R}_m = 1.49$	0.2509

Source: NEPSE

$$\begin{aligned} \text{Average rate or return } (\bar{R}_m) &= \frac{R_m}{N} \\ &= \frac{1.49}{4} = 0.37 = 37\% \end{aligned}$$

$$\begin{aligned} \text{Standard deviation } (\Xi_m) &= \sqrt{\frac{\sum (R_m - \bar{R}_m)^2}{N - 1}} \\ &= \sqrt{\frac{0.2509}{4 - 1}} \\ &= 0.29 = 29\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of variation (CV)} &= \frac{\Xi_m}{\bar{R}_m} = \frac{0.29}{0.37} \\ &= 0.78 \end{aligned}$$

Figure 4.9 : Market Return Movement

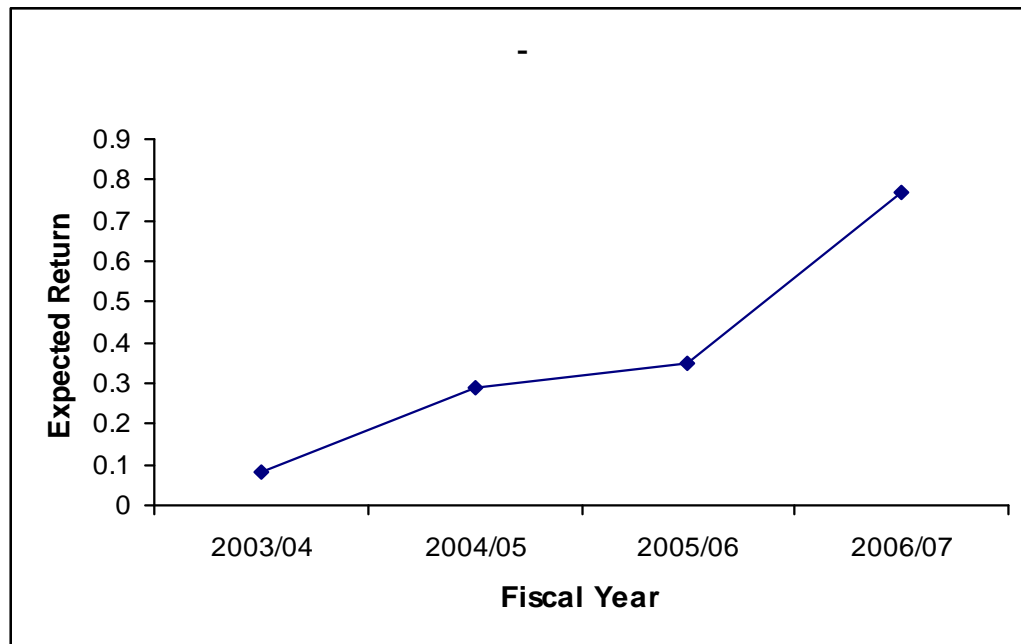


Figure 4.9 indicates the increasing trend of NEPSE from 2002/03 to 2006/07. In the year 2006/07 the expected rate of return on market is highest i.e. 0.77. Average rate of return on market is 37% and standard deviation on market is 29%.

4.4 Analysis of Risk of Individual Banks

Previous analysis is mainly focused on return position of sampled banks, market risk & Return. Now, this section analyzes the risk position of individual banks. This study has mainly focused on standard deviation, beta, systematic risk, unsystematic risk and covariance.

4.4.1 Risk Analysis of NIBL Bank

Risk analysis of NIBL Bank over the study period has been presented in table 4.8.

Table 4.8 Risk Analysis of NIBL Bank

NIBL Bank	
Standard deviation (Ξ)	= 0.31
Variance (Var)	= 0.0961
Coefficient of variation (CV)	= 1.19
Beta (β)	= 0.416
Covariance (COV)	= 0.035
Total risk	= 0.0961
Systematic risk	= 0.015
Unsystematic risk	= 0.082

Source : Appendix 1, Table 4.1

From above table 4.8, beta of the NIBL bank is 0.416, the beta coefficient is an index of systematic risk. It shows that the stock has positive correlation with market. Beta coefficient is less than 1 so it can be categorized as defensive stock, it's price fluctuation is less volatile than the market. The systematic risk of NIBL is 0.015 and unsystematic risk of NIBL is 0.082. Total risk of NIBL is 0.0961.

4.4.2 Risk Analysis of EBL Bank

Risk Analysis of EBL bank over' the study period has been presented in table 4.9.

Table 4.9 : Risk analysis of EBL bank

EBL Bank	
Standard deviation (Ξ)	= 0.19
Variance (Var)	= 0.0361
Coefficient of variation (CV)	= 0.33
Beta (β)	= 0.39
Covariance (COV)	= 0.033
Total risk	= 0.0361
Systematic risk	= 0.0128
Unsystematic risk	= 0.0233

Source : Appendix 2, table 4.2

Beta of EBL is 0.39 it shows that the stock has positive correlation with the market. Less than 1 beta indicates that the less volatility than the market. Therefore, this stock is categorized as defensive stock. It is less risky than the market. Standard deviation indicates the total risk of the bank which is 0.19 & variance is 0.0361. Systematic risk of EBL is 0.0128 which can not be diversified and unsystematic risk of EBL is 0.0233 which can be diversified.

4.4.3 Risk Analysis of NABIL Bank Ltd.

Risk Analysis of NABIL over the study period has been presented in table 4.10.

Table 4.10 Risk Analysis of NABIL

NABIL	
Standard deviation (σ)	= 0.37
Variance (Var)	= 0.1369
Coefficient of variation (CV)	= 0.52
Beta (β)	= 1.26
Covariance (COV)	= 0.1057
Total risk	= 0.1369
Systematic risk	= 0.1335
Unsystematic risk	= 0.0034

Source : Appendix 3, table 4.3

Beta of the NABIL is 1.26, it shows that the stock has positive correlation with the market. NABIL has a 1.26 beta coefficient that means the volatility is higher than market. Therefore, the stock can be categorized as aggressive stock. It is riskier than the market. Standard deviation indicates the total risk of bank which is 0.37 and variance is 0.1369. Systematic risk is 0.1335 which cannot be diversified and unsystematic risk is 0.0034 which can be diversified.

4.4.4 Risk Analysis of SCBNL Bank.

Risk analysis of SCBNL over the study period has been presented in table 4.11.

Table 4.11. Risk analysis of SCBNL

SCBL Bank	
Standard deviation (Ξ)	= 0.24
Variance (Var)	= 0.0576
Coefficient of variation (CV)	= 0.53
Beta (ρ)	= 0.5696
Covariance (COV)	= 0.0479
Total risk	= 0.0576
Systematic risk	= 0.0273
Unsystematic risk	= 0.0303

Source : Appendix 4, table 4.4

From the table 4.11, Beta of SCBNL bank is 0.5696 which indicates that the stock has positive correlation with market. The return of SCBNL Bank is less volatile than market. Beta of SCBNL is 0.5696, which indicates the stock is less volatile than market. Therefore stock categorized as defensive stock. It is less risky than market. The standard deviation of SCBNL is 0.24 and variance is 0.0576 which show the total risk. Systematic risk is 0.0273 which can not be diversified, and unsystematic risk is 0.0303 which can be diversified.

4.4.5 Risk Analysis of HBL Bank Ltd.

Risk analysis of HBL over the study period has been presented in table 4.12.

Table 4.12 Risk Analysis of HBL

HBL	
Standard deviation (σ)	= 0.26
Variance (Var)	= 0.0676
Coefficient of variation (CV)	= 1.04
Beta (β)	= 0.8692
Covariance (COV)	= 0.0731
Total risk	= 0.0676
Systematic risk	= 0.0635
Unsystematic risk	= 0.0041

Source : Appendix 5, table 4.5

From the above table, beta of HBL bank is 0.8692 which indicates that the stock has positive correlation with market. The return of HBL is less volatile than market. So the stock of HBL is categorized as defensive stock, it is less risky than market. The standard deviation is 0.26 and variance is 0.0676 which shows the total risk. Systematic risk is non-diversifiable risk which is 0.0635 and Unsystematic risk is diversifiable which is 0.0041.

4.5 Comparative Analysis of Risk of Sampled Banks

The section has mainly focused on comparative analysis of five commercial banks. For the analysis, the study has been done on data collected from table 4.8 to 4.12. Comparative analysis of five sampled banks over the study period has been presented in table 4.13.

Table 4.13 Comparative Analysis of Risk of Sampled Banks

	NIBL	EBL	NABIL	SCBNL	HBL
Standard deviation	0.31	0.19	0.37	0.24	0.26
Variance	0.0961	0.0361	0.1369	0.0576	0.0676
Coefficient of variation	1.19	0.33	0.52	0.53	1.04
Beta	0.416	0.39	1.26	0.5696	0.8692
Covariance	0.035	0.033	0.1057	0.0479	0.0731
Systematic Risk	0.015	0.0128	0.1335	0.0273	0.0635
Unsystematic Risk	0.082	0.0233	0.0034	0.0303	0.0041

Source : Table 4.8 - Table 4.12

The above table 4.13, has presented the overall risk indicators of sampled commercial banks ie. NIBL, EBL, NABIL, SCBNL and HBL. NABIL has the highest standard deviation of 0.37 with variance of 0.1369 it shows NABIL has a highest risk on stock than other sampled banks. Standard deviation measure of the total risk. NIBL has the highest coefficient of variation i.e. 1.19 then HBL has 1.04. Coefficient of variation measures risk per unit of return. EBL has minimum (lowest) coefficient of variation i.e. 0.33 and lowest variance i.e. 0.0361 so the bank has less risky. NABIL has a highest systematic risky than sampled bank i.e. 0.1335. Which can not be diversified and also NABIL has a lowest unsystematic risk i.e. 0.0034, which can be diversified.

4.6 Comparative Analysis of Required Rate of Return, Expected Rate of Return and Price Evaluation.

Capital assets pricing model (CAPM) is a model which has been used to calculate required rate of return of common stock. With the help of CAPM we can determine whether the stock price is under priced, over priced or equilibrium by comparison with expected rate of return. The risk free rate of return is needed which is taken from the interest rate of Treasury bill issued by Nepal Rastra Bank.

It is average of Treasury bill rate (364 days) of past 5 (five) years interest rate. Risk free rate of return over study period has been presented in table 4.14

Table 4.14 Calculation of Average Risk Free Rate of Return of Treasury Bills.

Year	Annual Interest Rate
2002/03	4.93
2003/04	3.81
2004/05	4.79
2005/06	4.04
2006/07	4.00
Total	21.57

Source : NRB

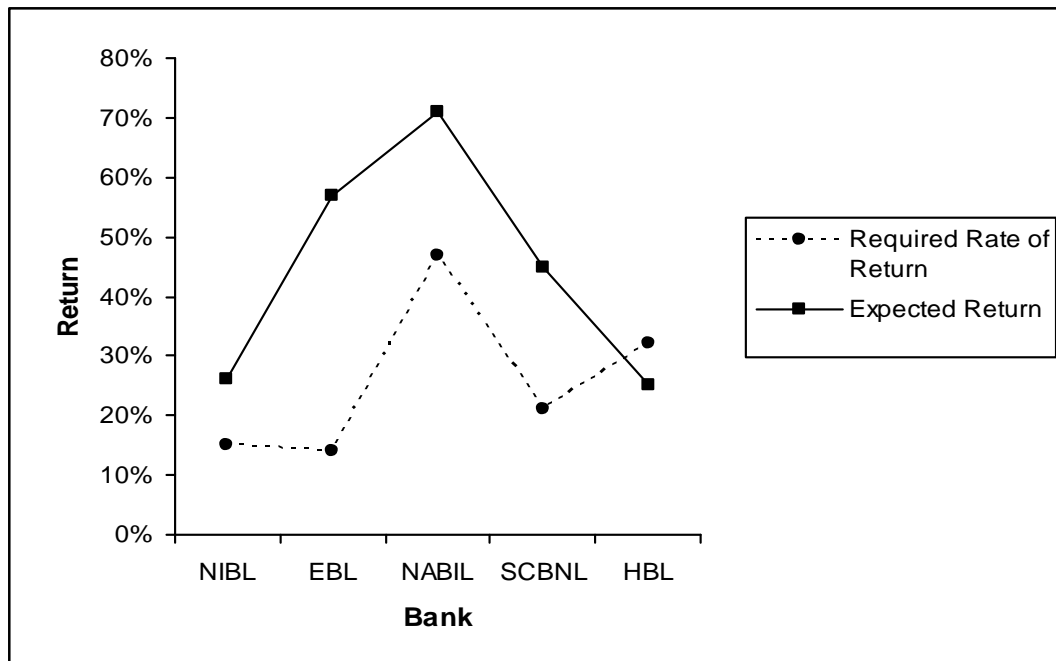
$$\begin{aligned}
 \text{Average risk free rate of return (R}_f\text{)} &= \frac{\phi R_f}{N} \\
 &= \frac{21.57}{5} = 0.043 \\
 &= 4.3\%
 \end{aligned}$$

Table 4.15 Required Rate of Return, Expected Rate of Return and Price Evaluation:

Bank	Beta (S_j)	$E(R_j) = R_f + (R_m - R_f) S_j$	Expected Return	Price
NIBL	0.416	15%	26%	Under Priced
EBL	0.39	14%	57%	Under Priced
NABIL	1.26	47%	71%	Under priced
SCBNL	0.5696	21%	45%	Under priced
HBL	0.8692	32%	25%	Over Priced

Table 4.15 presents the price situation of the sampled commercial banks. It also shows the required rate of return and expected rate of return of sampled banks. Expected rate of return of NIBL has 26% more than required rate of return (15%). So NIBL's security is under priced. It means that the bank has expected to earn a higher rate or return is necessary to compensate at investor for the level of systematic risk it bears. The sampled bank EBL, NABIL and SCBNL has expected returns are 57%, 71% and 45% respectively which are more than required rate of return i.e. 14%, 47% and 21% respectively. So all the banks securities are under priced. For under priced stocks, investor should purchase that bank's securities. HBL bank has expected rate of return is 25% which is less than the required rate of return i.e 32%. The negative return implies that the security is over priced. Required rate of return and expected rate of return of sampled banks have been shown in fig. 4.10.

Fig 4.10 : Required Rate of Return, Expected Rate of Return and Price Evaluation



The straight line shows the expected rate of return and dotted line shows the required rate of return. HBL has the least expected rate of return and NABIL has the highest expected rate of return. EBL has the least required rate of return and NABIL has the highest. Only HBL has the over priced stock. NIBL, EBL,

NABIL and SCBNL has the under priced stock. From the investors point of view, the under priced stock should be purchased and over priced stock should be sold.

4.7 Major Findings of the Study

Having completed the basic analysis required for the study, the final and most important task of the researcher is to enlist the findings of the study. The main findings of the study are derived on the basis of financial analysis of NIBL, EBL, NABIL, SCBNL and HBL, which are given below.

-) Expected rate of return is the income received on a stock investment which usually expressed in percentage. The average rate of return of NIBL, EBL, NABIL, SCBNL and HBL are 26%, 57%, 71%, 45% and 25% respectively. Among this sampled banks NABIL has the highest return and HBL has lowest return.
-) Risk is variability of returns which is measured in terms of standard deviation. The standard deviation of NIBL, EBL, NABIL, SCBNL and HBL are 31%, 19%, 37%, 24% and 26%. On the basis of standard deviation, the common stock of NABIL has the highest risk and the EBL has the lowest risk. It is generally not suitable for comparing investment with different expected returns. In this case coefficient of variation is more rational basis of investment decision because it provides a better measure of risk. Coefficient of variation of NIBL, EBL, NABIL, SCBNL and HBL are 1.19, 0.33, 0.52, 0.53 and 1.04 respectively. On the basis of coefficient of variation EBL is the best among all sampled banks because it has lowest risk i.e 0.33 per unit of return. But NIBL has the highest risk i.e.1.19 per unit return.
-) Beta coefficient is a measure of sensitivity of a stock's return to change in the average market return. Beta coefficient of all sampled banks are, 0.416, 0.39, 1.26, 0.5696 and 0.8692 of NIBL, EBL, NABIL, SCBNL and HBL respectively. This study shows that beside NABIL's stock, all banks' stock have a lowest beta than market beta. It means the return of these stocks is

less sensitive with market return. NABIL has a aggressive stock and other bank has a defensive stock. Therefore considering all this things the investment on EBL's stock in the best among all sampled bank's stock.

-) According to CAPM theory, NABIL has highest required rate of return i.e. 47% and EBL has the lowest required rate of return i.e. 14% and except HBL all other sampled banks are under priced. Only HBL are over price its required rate of return is 32% and expected rate of return is 25%.
-) Systematic risk in total risk of NIBL, EBL, NABIL, SCBNL and HBL is 0.015, 0.0128, 0.1335, 0.0273 and 0.0635 respectively. This study seems NABIL seems to more risky than other banks, and EBL seems less risky.
-) Unsystematic risk of NIBL, EBL, NABIL, SCBNL and HBL is 0.082, 0.0233, 0.0034, 0.0303 and 0.0041 respectively. It shows that EBL has least risky than other banks.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Common stock is a source of capital which is considered to be riskier and lifeblood of stock market. Therefore, investment in common stock is very sensitive on the ground of its uncertainty nature. Dividends to common stocks holders are only paid if the firm makes profit after tax and preference shareholder dividend. The company can return the principal in case of its liquidation only to the extent of the residual assets after satisfying to all its preference shareholders. Besides this, the investors have to sacrifice the return on their investment in common stock which would be earned investing elsewhere.

Risk and return is getting considerable attention in financial management. The central focus of finance is trade off between risk and return. Development in the field of finance has led to the application of many new concepts and models to deals with various related to financial management.

The relationship between risk and return is that if there is no risk, there is no return. Risk and return are the two parts of business world. It is a key factor of financial sectors. For any investment decision, investors should calculate the risk and return because it measures the performance of any organization. The relationship between risk and return is described by investor's attitude about risk and their demand for compensation. No investor will like to invest risky assets unless he/she is assured of adequate compensation for the acceptance of risk. Hence they invest in those opportunities which have certain degree or risk is associated with it. Therefore risk plays a vital role in the analysis of investment.

Capital market plays a vital role to develop the economic world. NEPSE is the heart of the capital market. It has a two parts one is primary and other is secondary market. In capital market different companies and investors exchange

the share transactions. In the context of Nepalese market least investors are familiar to risk and return. They take investment decision without knowing about risk and return.

The main objective of the study is to analyze the risk and return analysis on common stock of listed commercial banks. Only twenty-one Commercial banks are operating in Nepal. Among the listed commercial banks, only five banks, NIBL, EBL, NABIL, SCBNL and HBL have been selected as a sample for analyze the risk and return. While analyzing the risk and return brief reviews of related studies has been done. Review of literature described conceptual framework and research review. To find out the objectives of the study it included the research methodology which is the systematic way. To analysis the data historical return, average return, standard deviation, coefficient of variation, beta, and required rate of return has been calculated. This study fully depends upon secondary sources. For the study, secondary data were collected from NEPSE, NRB and related commercial banks' annual report and website.

5.2 Conclusion

-) In terms of average rate of return NABIL has the highest rate of return i.e. 71% and HBL has the lowest i.e. 25%. From the view point of average rate of return NABIL is the best among the sampled banks.
-) Standard deviation of NABIL is highest and EBL has lowest that means the common stock of NABIL is more risky while EBL is less risky. From the point of view of investor he/she can invest his/her investment on Share of EBL.
-) Coefficient of variation is considered as the best mechanism to measure the risk. On the basis of CV, NIBL'S stock seems to be more risky with 1.19 whereas the less risky stock is of EBL i.e. 0.33.

-) Beta of NABIL has highest and EBL has lowest. It shows that NABIL is more risky and EBL is less risky.
-) According to the CAPM theory, it is found that the required rate of return of all the sampled banks are lower than expected rate of return except HBL. HBL has the higher required rate of return, it means HBL's stocks are over priced. And all other bank's stocks are under priced.
-) This study made to analyze the systematic and unsystematic risk. NABIL has a high systematic risk which cannot be diversified or minimized. EBL has a lowest systematic risk. NIBL has a highest Unsystematic risk which can be diversified or minimized.
-) This study mainly focused on risk and return analysis on common stock of listed commercial bank. From the analysis if, investor is risk seeker he/she can invest in NABIL or if investor is risk averter then he/She can invest in EBL.

5.3 Recommendation

Recommendation is the final output or the whole study. It helps to convey positive information and proper way of improvement to concerned people and to other interested researcher in the upcoming days. Various analysis has been done till these steps. The followings are the recommendations based on the above findings, conclusions.

-) Investors must focus on the risk factors before making an investment if they want to get maximum benefit from the investment. The coefficient of variation is considered the best tool for relative measurement of risk. On the basis of CV, NIBL's stock is riskiest for investment. Whereas EBL's stock is lowest risky. Hence it is recommended that the stock of EBL is the best for investment.

-) Beta coefficient measures the sensitivity of the stock with market. Higher the beta, greater the volatility. The beta of market is always equal to 1 stock having beta coefficient more than 1 is more risky than the market,. It an investor is aggressive or risk taker he/she can invest the market on that stocks. Stocks having beta coefficient less than 1 is less risky than the market. Risk averter investor can invest in that type of common stock. So it is recommended that the investor should select EBL's stock. It is less risky or defensive stock.
-) The stocks having more systematic risk have high sensitivity as such types of risk cannot be minimized. So the investors have to consider the adequate compensation for the acceptance of risk. It is clear from the study that EBL's stock has lowest systematic risk. Therefore it is recommended that the investor had better investment in EBL's stock.
-) The investors have to buy those stocks during the time of under valuation and they have to sell the stocks at the time of overvaluation. It is found from the study that except HBL's stock is overvalued. So it is recommended to investors to buy all banks' share except HBL.
-) Investor should make the decision for investment after analyzing the financial indicators of the companies.
-) In realistic, Nepalese investor doesn't seem so professionalism in respect to trading of shares and are holding shares for dividend. The companies should increase dividend to increase investment as well as market price of the stock.

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Related Websites :

www.mof.org.com

www.nrb.org.np

www.nepal stock.com.np

www.sebon.com.np

www.blackwell-synergy.com

Appendix : 1

Calculation of Covariance, Beta, Total Risk, Systematic risk and Unsystematic Risk of NIBL Bank

Year	R_j	$R_j - \bar{R}_j$	R_m	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2002/03	-	-	-	-	-
2003/04	0.20	-0.06	0.08	-0.29	0.0174
2004/05	-0.14	-0.4	0.29	-0.08	0.032
2005/06	0.6	0.34	0.35	-0.02	0.0068
2006/07	0.38	0.12	0.77	0.4	0.048
Total	1.04				0.1042

$$\begin{aligned} \text{COV (j, m)} &= \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{N - 1} \\ &= \frac{0.1042}{4-1} = 0.035 \end{aligned}$$

$$\begin{aligned} \text{Beta } (\beta_{j,m}) &= \frac{\text{COV (j,m)}}{\sigma_m^2} \\ &= \frac{0.035}{(0.29)^2} = 0.416 \end{aligned}$$

$$\text{Total Risk} = \text{Variance} = (\sigma_j^2) = 0.0961$$

$$\begin{aligned} \text{Systematic Risk} &= \beta_{j,m}^2 \times \sigma_m^2 \\ &= (0.416)^2 \times (0.29)^2 \\ &= 0.015 \end{aligned}$$

$$\begin{aligned} \text{Unsystematic Risk} &= \text{Total Risk} - \text{Systematic Risk} \\ &= 0.0961 - 0.015 \\ &= 0.0811 \end{aligned}$$

Appendix : 2

Calculation of Covariance, Beta, Total Risk, Systematic Risk and Unsystematic Risk of EBL Bank

Year	R _j	R _j - qR _j	R _m	R _m - qR _m	(R _j - qR _j) (R _m - qR _m)
2002/03	-	-	-	-	-
2003/04	0.57	0	0.08	-0.29	0
2004/05	0.31	-0.26	0.29	-0.08	0.0208
2005/06	0.61	0.04	0.35	-0.02	-0.0008
2006/07	0.77	0.2	0.77	0.4	0.08
Total	2.26				0.1

$$\begin{aligned} \text{COV (j, m)} &= \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{N - 1} \\ &= \frac{0.1}{4 - 1} = 0.033 \end{aligned}$$

$$\begin{aligned} \text{Beta } (\beta_{j,m}) &= \frac{\text{COV (j,m)}}{\sigma_m^2} \\ &= \frac{0.033}{(0.29)^2} = 0.39 \end{aligned}$$

$$\text{Total Risk} = \text{Variance} = (\sigma_j^2) = 0.0361$$

$$\begin{aligned} \text{Systematic Risk} &= \beta^2 \times \sigma_m^2 \\ &= (0.39)^2 \times (0.29)^2 \\ &= 0.0128 \end{aligned}$$

$$\begin{aligned} \text{Unsystematic Risk} &= \text{Total Risk} - \text{Systematic Risk} \\ &= 0.0361 - 0.0128 \\ &= 0.0233 \end{aligned}$$

Appendix : 3

Calculation of Covariance, Beta, Total Risk, Systematic Risk and Unsystematic Risk of NABIL Bank

Year	R_j	$R_j - \bar{R}_j$	R_m	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2002/03	-	-	-	-	-
2003/04	0.45	-0.26	0.08	-0.29	0.0754
2004/05	0.58	-0.13	0.29	-0.08	0.0104
2005/06	0.55	-0.16	0.35	-0.02	0.0032
2006/07	1.28	0.57	0.77	0.4	0.228
Total					0.317

$$\begin{aligned} \text{COV (j, m)} &= \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{N - 1} \\ &= \frac{0.317}{4-1} = 0.1057 \end{aligned}$$

$$\begin{aligned} \text{Beta } (\beta_{j,m}) &= \frac{\text{COV (j,m)}}{\sigma_m^2} \\ &= \frac{0.1057}{(0.29)^2} = 1.26 \end{aligned}$$

$$\text{Total Risk} = \text{Variance} = (\sigma_j^2) = (0.37)^2 = 0.1369$$

$$\begin{aligned} \text{Systematic Risk} &= \beta^2 \times \sigma_m^2 \\ &= (1.26)^2 \times (0.29)^2 \\ &= 0.1335 \end{aligned}$$

$$\begin{aligned} \text{Unsystematic Risk} &= \text{Total Risk} - \text{Systematic Risk} \\ &= 0.1369 - 0.1335 \\ &= 0.0034 \end{aligned}$$

Appendix : 4

Calculation of Covariance, Beta, Total Risk, Systematic Risk and Unsystematic Risk of SCBNL Bank

Year	R _j	R _j - qR _j	R _m	R _m - qR _m	(R _j - qR _j) (R _m - qR _m)
2002/03	-	-	-	-	-
2003/04	0.13	-0.32	0.08	-0.29	0.0928
2004/05	0.41	-0.04	0.29	-0.08	0.0032
2005/06	0.66	0.21	0.35	-0.02	-0.0042
2006/07	0.58	0.13	0.77	0.4	0.052
Total					0.1438

$$\begin{aligned} \text{COV (j, m)} &= \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{N - 1} \\ &= \frac{0.1438}{4-1} = 0.0479 \end{aligned}$$

$$\begin{aligned} \text{Beta } (\beta_{j,m}) &= \frac{\text{COV (j,m)}}{\sigma_m^2} \\ &= \frac{0.0479}{(0.29)^2} = 0.5696 \end{aligned}$$

$$\text{Total Risk} = \text{Variance} = (\sigma_j^2) = (0.24)^2 = 0.0576$$

$$\begin{aligned} \text{Systematic Risk} &= \beta_{j,m}^2 \times \sigma_m^2 \\ &= (0.5696)^2 \times (0.29)^2 \\ &= 0.0273 \end{aligned}$$

$$\begin{aligned} \text{Unsystematic Risk} &= \text{Total Risk} - \text{Systematic Risk} \\ &= 0.0576 - 0.0273 \\ &= 0.0303 \end{aligned}$$

Appendix : 5

Calculation of Covariance, Beta, Total Risk, Systematic Risk and Unsystematic Risk of HBL Bank

Year	R _j	R _j - qR _j	R _m	R _m - qR _m	(R _j - qR _j) (R _m - qR _m)
2002/03	-	-	-	-	-
2003/04	0.03	-0.22	0.08	-0.29	0.0638
2004/05	0.11	-0.14	0.29	-0.08	0.0112
2005/06	0.23	-0.02	0.35	-0.02	0.0004
2006/07	0.61	0.36	0.77	0.4	0.144
Total					0.2194

$$\begin{aligned} \text{COV (j, m)} &= \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{N - 1} \\ &= \frac{0.2194}{4-1} = 0.0731 \end{aligned}$$

$$\begin{aligned} \text{Beta } (\beta_{j,m}) &= \frac{\text{COV (j,m)}}{\sigma_m^2} \\ &= \frac{0.0731}{(0.29)^2} = 0.8692 \end{aligned}$$

$$\text{Total Risk} = \text{Variance} = (\sigma_j^2) = (0.26)^2 = 0.0676$$

$$\begin{aligned} \text{Systematic Risk} &= \beta_{j,m}^2 \times \sigma_m^2 \\ &= (0.8692)^2 \times (0.29)^2 \\ &= 0.0635 \end{aligned}$$

$$\begin{aligned} \text{Unsystematic Risk} &= \text{Total Risk} - \text{Systematic Risk} \\ &= 0.0676 - 0.0635 \\ &= 0.0041 \end{aligned}$$

Appendix - 6

S.No.	Companies Name	Stock Symbol	Listed Shares	Paid up Value	Total Paid up Value
Listed Commercial Banks					
1	<u>Nabil Bank Ltd.</u>	NABIL	9,657,470	100	965,747,000
2	<u>Nepal Investment Bank Ltd.</u>	NIB	24,070,689	100	2,407,068,900
3	<u>Standard Chartered Bank Ltd.</u>	SCB	9,319,664	100	931,966,400
4	<u>Himalayan Bank Ltd.</u>	HBL	12,162,150	100	1,216,215,000
5	<u>Nepal SBI Bank Limited</u>	SBI	8,734,791	100	873,479,100
6	<u>Nepal Bangladesh Bank Ltd.</u>	NBB	18,228,509	100	1,822,850,900
7	<u>Everest Bank Ltd</u>	EBL	6,388,200	100	638,820,000
8	<u>Bank of Kathmandu</u>	BOK	8,443,979	100	844,397,900
9	<u>Nepal Industrial And Co.Bank</u>	NICB	11,404,800	100	1,140,480,000
10	<u>Machhachapuchhre Bank Ltd</u>	MBL	13,146,420	100	1,314,642,000
11	<u>Laxmi Bank Limited</u>	LBL	10,980,861	100	1,098,086,100
12	<u>Kumari Bank Ltd</u>	KBL	10,782,720	100	1,078,272,000
13	<u>Lumbini Bank Ltd.</u>	LUBL	9,995,000	100	999,500,000
14	<u>Nepal Credit And Com. Bank</u>	NCCB	13,908,900	100	1,390,890,000
15	<u>Siddhartha Bank Limited</u>	SBL	8,280,000	100	828,000,000
16	<u>NMB Bank Ltd.</u>	NMBF	11,000,000	100	1,100,000,000
17	<u>Bank of Asia Nepal Limited</u>	BOAN	10,000,000	100	1,000,000,000
18	<u>Citizens Bank International Limited</u>	CZBIL	10,000,000	100	1,000,000,000
19	<u>KIST Bank Limited</u>	KMBF	20,000,000	100	2,000,000,000
20	<u>DCBL Bank Ltd.</u>	DCBL	11,074,560	100	1,107,456,000
21	<u>Global Bank Limited</u>	GBL	10,000,000	100	1,000,000,000
Total			247,578,713	2,100	24,757,871,300

Source:www.nepal stock.com