RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS IN NEPAL

Submitted by:

Rita Sharma

Prithivi Narayan Campus

Roll No.: 308/064

Symbol No.: 480158

T.U. Reg. No.: 7-2-53-354-2003

Submitted to:

Office of the Dean

Faculty of Management

Tribhuvan University

In partial Fulfillment of the Requirements for the Degree of

Master of Business Studies (MBS)

Pokhara

February, 2012

RECOMMENDATION

This is to certify that the thesis

Submitted by:

Rita Sharma

Entitled:

RISK AND RETURN ANALYSIS

OF

COMMERCIAL BANKS IN NEPAL

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

<u>Supervisor</u>	<u>Head of Department</u>
Name: Janak Bdr. Basnet	**Signature:**
Signature:	<u>Campus Chief</u>
	Signature:

Date:

VIVA-VOCE SHEET

We have conducted the viva –voce examination of the thesis

Submitted by:

Rita Sharma

Entitled:

RISK AND RETURN ANALYSIS

OF

COMMERCIAL BANKS IN NEPAL

and found the thesis to be the original work of the student and written

according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for degree of

Master in Business Studies (M.B.S.)

<u>Viva-Voce Committee</u>

Chairperson, Research Committee: ………………………..……………

Member (Thesis Supervisor): …..……………………………………

Member (External Expert): …..……………………………………….

Member ……………………………………..……………………….

Date:

ACKNOWLEDGEMENT

This Thesis is for Master's Degree in Business studies (MBS) under taken at Tribhuvan University of Nepal. Firstly, I would like to express my gratitude and gratefulness to my supervisor as well as my teacher Janak Bahadur Basnet, Teaching Assistance, Prithivi Narayan Campus, Pokhara who provided me with all sorts of basic ideas, instructions and invaluable scholarly guidance for carrying out this research work from the very beginning to the end and enable me to present this dissertation in this form.

My sincere gratitude also goes to Dr. Puspa Raj sharma, PHD, Lecture, Faculty of management, Head of Research Department, Prithivi Narayan Campus Pokhara, who provided me an opportunity to write this thesis by approving my proposal.

I acknowledge staff of Nepal Rastra Bank, Nepal stock exchange and selected bank in this study, for their kind co-operation in the acquisition or achievement scores required for this study. Furthermore, I am very grateful to my spouse Mr. Govinda Raj Gautam and friend Umesh Paudel for the kind help and co-operation.

Finally, I am obligated to all the friends who assisted me directly or indirectly in completing this study and to Sugam Computer Service, Bagar, Pokhara for effective typing this thesis even in a small detail and difficult tables and figures relevant to the study.

Date: 2068/10/08 Rita Sharma

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS USED

A.D.	:	Anno Domini
B.S.	:	Bikram Sambat
CAPM	:	Capital Assets Pricing Model
CEO	:	Chief Executive Office
CS	:	Common Stock
Div	:	Dividend
DPS	:	Dividend Per Share
EBL	:	Everest Bank Limited
F.Y.	:	Fiscal Year
HBL	:	Himalayan Bank Limited
i.e.	:	That is
Ltd.	:	Limited
MPS	:	Market Price Per Share
NABIL	:	Nabil Bank
NBL	:	Nepal Bank Limited
NEPSE	:	Nepal Stock Exchange
NIB	:	Nepal Investment Bank
RBB	:	Rastriya Banijya Bank
RP	:	Risk Premium
RS	:	Nepalese Rupees
S.N.	:	Serial Number
SEBON	:	Security Board Nepal
SML	:	Security Market Line
WWW	:	World Wide Web

CHAPTER–I

INTRODUCTION

1.1 Background of the study

Banking starts from accepting deposits, Acceptance of various scattered funds in form of various accounts as per the customer need. Commercial Bank is a legally formed financial institution. Bank and financial institution Act of Nepal 2031"A commercial bank is a bank which deals in exchange currency accepting deposits giving loans and doing Commercial transaction."

Money changers and goldsmiths are considered the ancestors of modern banking. In the context of Nepal, the development of Banking sector is not so, long. Nepal Bank Ltd. is the first Modern Bank of Nepal it is taken as the millestone of Modern Banking of the country. This was established in 1937A.D. Nepal Rastra Bank Act 1955 was formulated, which was approved by H.M.G. according the Nepal Rastra Bank was established in 1956 A.D. as the central Bank of important for smooth Development of Banking system. It can play a key role in the economy. In 1957 A.D. Industrial Development Bank was established to promote the industrialization in Nepal which was later converted into Nepal Industrial Development Corporation (NIDC) in 1959 A.D. Rastriya Banijya Bank was established in 1965 A.D. as the second commercial Bank of Nepal. The financial shapes of these two commercial banks have a tremendous impact on the economy. That is the reason why these banks still exists in spite of their bad position. As the agriculture is the basic occupation of major Nepalese, the development of this sector plays the prime role in economy. So, separate Agriculture Development Bank was established in 1968 A.D. After declaring free economy and privatization policy, the government of Nepal encouraged the foreign banks for joint venture in Nepal. Then different commercial banks have been establishing very fast. There are 31commercial 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. For the study of the present purpose four Bank such as Nepal Arab Bank Ltd (NABIL), Everest Bank Ltd. (EBL), Himalayan Bank Ltd (HBL), and Nepal Investment Bank Ltd. (NIB)

1.2 Focus of the Study

The purpose of the investment must be made clear before the selection from among the available alternatives. Generally, most investments are undertaken to provide and increase in wealth. The higher level of the desired wealth, the higher return that must be received. An investor seeking higher returns must be will to face higher level of risk.

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 investors perception about risk and their demand for compensation. The nature of relationship is that as the level of excepted risk increase. The risk return relationship characterized as being a direct relationship or a positive relationship. No investors will like to invest in risky assets unless they are assured of adequate compensation for the assumption of risk.

The degree of risk may be lower for the conservative financial manager and it is higher for an aggressive financial managers. Risk needs to be measured in an objective way in order to known whether it is justifies a specific rate of return. An investor required a higher return from a risky project in order to compensate of the risk. The main aim is to maximize the returns with given level of risk or to minimize the risk with a given level of return. Therefore for this purpose that returns and risks need to measured.

There are different kinds of uncertainty about future return. The actual return may be less than excepted return. The main source of uncertainty is the price at which the stock will be sold. The stock price can be affected by economic factor such as interest rate, Economic growth, inflection and the strength of dollars. The risk of stock can be measured by price volatility.

This study has focused on the analysis of risk and return associated with the share price of the commercial banks. Risk and return of commercial banks are fully based on portfolio analysis. Therefore this study is also focus on the analysis of risk and return how an investor or should return, how an investor or should take investment decision in share of domestic private commercial banks in Nepal.

1.3 Statement of Problem

Investors purchase financial assets such as shares or bonds because they desire to increase their wealth i.e. earn a positive return on their investment. The future is uncertain, investors don't know about the rate of return their investment will realize. The commercial banks invest different kinds of their subject because they will be generating some benefits in future. The investors do not measure return and various risks involves in their investments. The investors are able to know the price situation of listed companies.

After the restoration of Democracy, Nepal government initiated open market policy in country. As a result numbers of public limited companies are increasing. Such institutions are providing banking services, participating in developing works, Manufacturing, Processing and other. Banks issue share, debenture and bond but their become huge demand rather than supply but if other sectors such as hotel insurance and manufacturing company issue their money. 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 different topography, lack of proper evaluation by the government or central banks. Controversy policy of government and so on. Commercial banks are facing different Problems and couldn't be exception as other economic institutions. The main problems is that the public companies can not perfectly analyzed the risk and return of market situation. Investors do not have any idea of risk and return. In ours country the commercial banks are playing vital role in the capital markets, risk and return and other different kinds of areas. In Nepalese context, most of people deposit their money in bank instead of investment in financial assets. Such as share, bond and debenture. A lot of investors do not know how to make investment and how to calculate risk and return on their investment.

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

a. What is the average rate of return of commercial banks?
b. What is the level of systematic and unsystematic risk of commercial banks?
c. What is the total risk and return position of the commercial banks?

1.4 Objectives of the Study

The main objective of this study is to find out risk and return of commercial banks. The specific objectives of the study are as follows:

a. To analyze the annual average rate of commercial banks
b. To analyze the systematic and unsystematic risk of commercial banks.
c. To analyze the risk and return in the frame work of CAPM model.
d. To analyze the risk premium of commercial bank in Nepal.

1.5 Significance of the Study

The study will be beneficial for the entire person who is interested to know about the capital market and commercial bank. The study will give information about Nepalese capital market by analyzing risk and return will definitely contribute to increase the analytical power of the investors in capital market. The study suggests for a careful judgment of risk and return relationship. The analysis of risk and return helps to develop the effective portfolio. The study also suggests that for a careful judgment of systematic and unsystematic risk of commercial banks.

1.6 Limitation of the Study

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

a. The study covers the relevant data information only for 10 years.
b. Analysis is based on the tools developed in the context of efficient market condition.
c. Time and finance constraints are also the major limitation of the study.
d. This study mainly focuses on risk and return of four listed commercial banks i.e. Nepal Arab Bank Ltd., Nepal investment Bank Ltd, Everest Bank Ltd, Himalayan Bank Ltd.

1.7 Organization of the study

This study has been classified into six chapters.

Chapter – I

This chapter is the introduction chapter. It includes of background of the study, focus of the study, statement of the problem, objectives of the study, significance of the study, limitation of the study and organization of the study.

Chapter – II

The second chapter consists of Review of literature includes conceptual frame work and relevant material.

Chapter – III

This chapter is concerned with the research methodology 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 analyze 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 – VI

This chapter includes of bibliography of the study.

CHAPTER–II
REVIEW OF LITERATURE

Research is careful investigation or inquiry especially through such for new facts in any branch of knowledge. The investigation has been guided by previously collected information and aims to add to the body of knowledge on the subject. Research is a continuous process and it never ends. The purpose of review of literature is to develop some expertise is ones area to see what new contribution be can made and to receive some ideas for developing a research design. Thus the previous studies can't be ignored because they provide the foundation to the present study with the past research study.

In this chapter the review of relevant theoretical literature and previous related studies. It is divided into two parts i.e. conceptual framework, theoretical review and research review. Conceptual review includes definitions and summary of different books and authors and research review includes the review of the article published different journal and past studies.

2.1 Conceptual Framework

This sub chapter presents the conceptual aspects of the study. It includes the concepts of investment on securities, risk and return.

2.1.1 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 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 as certain price called per value and are transferable form one person to another. In simple way, securities can be understood as the promissory paper that the company gives to the investor after receiving certain rupees as loan or share.

An investor can invest on any kinds of the securities for the long term return. He or she can make investment on shares, debenture 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.

There are many varieties of securities available in the market. A market where securities like stock bonds are traded is known as security market. Security, market facilities the process of transferring funds from savers to investors. People requiring money is bought together with those having surplus money in the securities market. Security markets are also known as mechanism created to facilitate the exchange financial assets. Therefore, the market exists in order to bring together the buyers and sellers of securities. There are many ways in which securities 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 and Secondary market.

❖ **Primary Market**

Financial securities which are offered for the first time in market is called primary market. The primary market securities are the new issue market, which bring together the "supply and Demand" or sources and issues for new capital fund. In this market the principal source of fund is the domestic saving of individuals and business, other supply includes foreign investors and Governments.

- ❖ **Secondary Market**

The market where the existing and pre- developed securities are bought and sold is called secondary market. 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. 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 import 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.

ii. On the basis of Maturity of the security

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

- ❖ 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 example 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 matures in more than one year 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.

2.1.2 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 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 form 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 unfavorable 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 Ehrnardt 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 on 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 chance of loss are viewed as more risky than those with lesser chance of loss.

Source of Risk

❖ **Interest Rate Risk**

It is the potential variability or return caused by changes in the market interest rates. If Market interest rate rise, 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.

❖ **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. The percentage change in the CPI is a widely followed measure of the rate of inflation.

❖ **Bull-Bear market Risk**

Bull-Bear market Risk arises from the variability of market returns resulting form alternating bull and bear market forces. When a security index rises fairly consistently form 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 through is called a bear market.

❖ **Default Risk**

Default risk is concerned with the security issuing firms 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.

- **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. Liquid 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 a liquid assets. The more liquid assets has the larger the price discounts/commissions which must be given up to the seller in order to affect a quick sale.

- **Industry Risk**

An industry is a group of companies that complete 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.

- **Call ability 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.

- **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 groups to improve their relative position 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)

❖ Systematic Risk

The systematic risk is market related. In other word, it arises form 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 can not 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 systematic 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 assets systematic risk. This is a key observation and it allows us to say great deal about the risk and returns on individual assets. In particular, it is the basis of 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 centerpiece of modern finance. Beta and SML are key concept of business it supplies us with at least part of the answer to the questions of how to go about determining the required return on an investment.

- **Unsystematic Risk**

The unsystematic risk is non-market factors related. In other word, it arises from the project specific factors for example inefficiency of management, failure in new production, employer 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).

2.1.3 Reasons to manage Risk

The term risk management can mean many things, but it 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 investor 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 the possibility that our future earning and free cash flows will be significant lower than we expected. There is no proof that risk management odds values, here is several goods reasons for companies to manage risk.

i) Debt Capacity

Risk management can reduce the volatility of cash flows and this decrease 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 warring stockholders to higher interest rates on debt to customer defection 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 Advantages in Hedging

Many investors can not implement a homemade hedging program as efficiently as can a company. Firms generally have lower transaction cost due to a large 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 specially 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, than tax loss carry-forwards are generally lost. Therefore our tax system encourages risk management to stabilize earnings.

2.1.4 Return

Return is the total gain or loss experienced an investment at a given period of time. The concept of return has different meaning to different investors. Some investors seek hear term cash inflows and give loss value of more distant return such as investors might purchase the other firm that pays large cash dividends. Other investors are concerned primarily with growth. They would seek project that offer the promise of long term, higher than average growth of sales, earning and capital and 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 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 on investment.

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 two types of mean return.

i) 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 observations or returns. The mean return in equation is as follows:

$$\overline{R}_{AM} = \frac{\sum_{t=1}^{n} R_t}{n}$$

Where, $\overline{R}_{AM}$ = Arithmetic Mean return

R_t = Annual Return at time t.

n = No. of observation or returns.

$\sum$ = Summation.

ii) Geometric Mean

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

$$R_{Gm} = \left[\sum_{t=1}^{n} (1+R_t)^{\frac{1}{n}} - 1 \right]$$

Where,

R_{Gm} = Geometric Mean Return

R_t = Annual return at time t

n = No. of observations or returns.

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 of rerun 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 (e.g. dividend or interest) over the holding period and the expected ending or selling price. The expected rate return is an ex-ante or unknown future return. Unless the real rate of return is guaranteed, most investor recognize the possible rate of return into a single number called the expected rate of return: (van Home, 1995).

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

$$E(r) = \sum_{t=1}^{n} P_t r_t$$

$$E(r) = p_I r_1 + p_2 r_2 + \ldots\ldots\ldots\ldots + p_n r_n$$

Where,

E(R) = Expected rate of return

p_t = Probability of the outcome

r_t = Possible outcomes

n = No. of possible outcome

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

Here, E (R_j) = $\frac{\sum_{t=1}^{n} R_t}{n}$ Where E(R_j) = Expected rate of return on stock on j.

R_j = Return on stock j.

n = Number of observations.

iii) Required Rate of Return

Required rare 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 world represent the pure time value of money (cheney and Mosses, 1995).

The required rate of return the fraction or 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.

2.1.5 Capital Assets pricing Model (CAPM)

Capital assets are the long term financial as well as real assets and CAPM is bases 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. But the CAPM, which was developed by William F-sharpe, John linther 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 (Bhattrai, 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 exits.
- ✓ No inflation and no change in the level of interest rate exits.
- ✓ The capital market 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 aggress about the future prospects from securities. This means that investors analyze and process information in the same way. There are prefect 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 places, 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 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 form the same efficient set because they have different preference 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 personality performed overall combination of risk and return. This feature of CAPM is often referred to as the separation theorem.

Separation Theorem

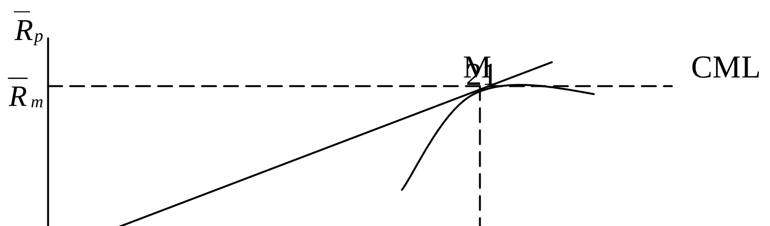
The optimal combination of risky assets for an investor can be determined without any knowledge of the investors preferences towards risk and return. In other words the optional combination of risky assets can be determined without any knowledge of shape of an investor indifference curves.

Market Portfolio

The Market 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 efficient portfolio. The figure clarifies more about it.



Risk premium

Risk free Return

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 interpret of R_f and a slope $\frac{[E(R_m) - R_f]}{\pm_m}$

Therefore the equation for the capital market line may be expressed as follows.

Symbolically,

$$E(R_p) = R_f + \left[\frac{R_m - R_f}{\pm_m}\right]\sigma_p$$

Where, R_f = Risk free return

R_m = Expected return on market

σ_m = standard deviation on market portfolio

σ_p = portfolio risk an efficient.

For portfolio on the CML, to 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 one the CML and is the Market Price of risk.

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

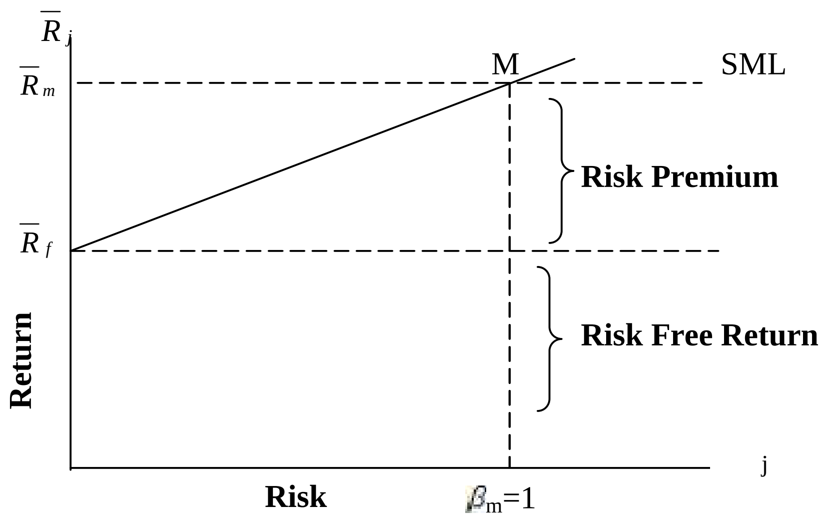
ii. Security Market Line (SML):

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 assists and the market portfolio. However, the total risks of an individual asset should not be used to measure its riskyness. 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 use 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 lead at a risk free rate, all individual's securities and portfolios are positioned on the security Market line. The relationship between on assets return and its systematic risk can be expressed by SML. The equation for SML is symbolically

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

Where (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 data. It's measure of sensitivity of a stock return to changes in the average markets returns



Here SML starts from risk free assets (R_f) and moved ahead linearly with beta ($_j$) 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 return 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.

2.1.6 Highlights about Selected Bank

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 has 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, international banking and tale banking. Shareholders are distributed as follows:

50% is owned by N.B. international Ltd.

20% - Local financial institution.

30% - Nepalese public

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 Indosuez, 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 2001A.D. The name of the bank has been charged to Nepal Investment Bank Ltd. Upon approval of Bank's Annual General Meeting, Nepal Rastra Bank and company Registrations 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 Sansthan holding 15% of the capital. The remaining 20% being held by the general public. NIBL was listed in NEPSE in 1987 A.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 employees' 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 been always 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 service 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 objective 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.

2.2 Research Review

Different research works are carried out by different book & article. The study has also used different database, which is available in western regional library of Prithivi Narayan Campus, Pokhara and other different kinds of Libraries. 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

Financial economics has defined as the application of economics theory to financial market (Smith 1996). It is the large body of theory including such well-known models as modern portfolio theory (Markowitz 1952), the capital asset pricing models (CAPM) (Shap 1964), the efficient market hypothesis (Samulson and Fama 1965) and option pricing model (Black and Schorwrs 1973). Although these models are all included in institute of faculty education Ltd. (1995) there are acceptance or use is controversial.

Akhibe and Whyte (2004), in their research paper "The gram-leach Billey Act" of 1999: Risk implication for the financial service industry have focused on risk implementation 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 effect of events that permitted only limited entry by banks into non banking activities. The study is conduct 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 area of financial modernization to adverse effects from the increase in risk.

Pagaho's (2001) has study on how theories of financial intermediation of cooperate risk management influence bank Risk. Taking behaviour from both cooperate finance and banking perspective. That data set cover period from (2004-2008). In this study the researcher has used mathematical tools that are model beta, standard deviation total risk (systematic and non-systematic risk) interest rate risk. The main objectives of the study is to examine the rationales for risk taking and risk management behaviour for both a cooperative financial and banking perspective. After combing the theoretical insights from the cooperate finance and banking literatures related to hedging and risk taking the paper reviewed empirical tests based on the theories are based support by the data.

2.2.2 Review of Thesis (Related Studies)

Bhatta (1996) has conducted a study on "Assessment of the performance of listed companies". The main objective of the study was to analyze the performance of listed companies in terms of risk and return for this, the researcher has used 5 years data from 1990 to 1995.

In this study, financial and statistical tools are used to analyzed 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.

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 absolute and relative risk respectively and beta coefficient has used to measure systematic risk. 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 maximum 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 portfolio risk.

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 Udhyog is over priced.

Karki (2006), has conducted a study on "Risk and Return Analysis of listed companies." The main objective of the study was to analyze the risk and return situation of the different listed commercial banks & to analyze 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 finding of this study is that considering the trend of the price movement of the shares of selected banks, it reveals 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.

Lamichhane (2006), has conducted a research on "Risk and Return of listed commercial Banks is Nepal." The main objective of the study was to analyze 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% ad 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 term 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.

Sapkota (2000) has conducted a research on "Risk and Return analysis in common stock investment". The main objective of the study was to analysis the risk and return of common stock in Nepalese stock market. For the study, the researcher has used 5 years data form 1994 to 1999.

In this study, financial and statistical tools are used to analyze the data. The major finding of the study are the expected return on the common stock of Nepal Bank Ltd; has maximum and SBI Bank Ltd. has minimum common stock. In the context of industries, expected return of finance and insurance industries has focused highest. So that common stock of Nepal Bank Ltd is the best for investment. From this study, it is concluded that commercial stock is most risky securities and life blood of stock market because of the higher expected return.

Satyal (2002) has conducted a research on "Risk and Return analysis of listed commercial banks". The main objective of the study was to analyze the risk, return and other variable that help in making decision about investment in securities of the listed companies. For the study, the researcher has used 5 years data form 1996 to 2001. He has used financial and statistical tools to calculate return, standard deviation, coefficient of variation and beta coefficient. The major finding of the study are that the expected return of NIB is 36%, coefficient of variation is 0.06 and risk is 38.3% respectively. Also the expected return of HBL is 52.66%, risk is 29.3% and coefficient of variation is 0.556 and beta coefficient is 1.567.

Takhachhe (2006), has conducted a research on "Risk Analysis on common stock of listed commercial Bank." 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 finding of the study was that the expected rate of return on common stock of NBL 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%.

Tamang (2003) has conducted a research on "Risk and Return analysis of commercial bank in Nepal". The main objectives of the study was to determine whether the shares of the commercial banks are correctly priced or not by analyzing the required rate of return using the capital assets pricing models. Also to measure the systematic and unsystematic risk of the commercial banks for the study, the researcher has used 5 years data 1996 to 2001.

In this study the researcher has used financial and statistical tools to calculate market model, single period return, expected rate of return standard deviation, coefficient of variation and beta coefficient. The major finding of the study are that the systematic risk of Nepal Arab Bank Ltd., is highest among the share that is 95.59% and Bank of Kathmandu has the lowest i.e. 35.81%. Also Nepal Arab Bank has highest unsystematic risk but Bank of Kathmandu has lowest unsystematic risk. From the study, it is concluded that the share of Nepalese Commercial Banks are heavily trade in NEPSE, non of the shares is correctly priced.

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. 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 stock 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.

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 share. The share 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 efficient of such types of share was seemed to be negative. The risk per unit of return as measured by CV is less than 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 over shares will fall in order to increase the expected return or the market price under priced shares will rise to decrease expected return, so the equilibrium condition would met.

CHAPTER- III
RESEARCH METHODOLOGY

Research methodology describes the Methods and Processes applied in the entire aspects of the study. Research Methodology 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.

This chapter has represents the highlight of research design, population and sample size, data collection, techniques, sources and data analysis tool.

3.1. Research Design

The present study is based on descriptive and analytical research design. Descriptive research is used to describe the relationship risk and return from tables, trend and figures with the help of present data. As the result analytical research design is used to analyze the standard deviation, coefficient of variation, Beta coefficient, Risk premium, expected return and average rate of return of sampled bank. Analytical research design evaluated the present data clearly. This study has been carried out the 10 years period from 15th July 2000 to 15th July 2010.

3.2. Population and Sample

The total population of the study used for listed commercial banks in Nepal. Total population of the study taken on the listed year of commercial banks, which are listed before 15th July 2000 A.D. in NEPSE. Currently there are 31 commercial banks in Nepal. According to SEBON only 14 are listed in NEPSE, till the study period. The sampled banks have been selected from random sampling technique. SPSS computer Aided random sampling technique is used to select the samples. This covers overall 33.5% of the population.

3.3. Source of Data

The data are used for the study only secondary sources. The main source of data is report of Nepal stock Exchange Ltd, report of security board Nepal, web side, annual report of commercial bank. The data has been taken from NEPSE closing and opening price and sectors closing and opening price. Similarly, SEBON has been visited to taken annual report of SEBON and annual report of sampled commercial bank. (www.Nepal stock.com 2009)

3.4. Data collection and Techniques

All the data for present study have been collected from secondary source. The annual report commercial banks have been taken from SEBON. Similarly, NEPSE price have been taken from NEPSE. NRB visited to collect the treasury -bill rate and banking and financial statistics then collected data where record in master sheet. Manually then data were entered to spread sheet to work out statistical financial analysis ratios. 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 (Microsoft Excel and word.)

3.5. Data Analysis Tools

All the data has been presented and analyzed to fulfill the objectives to illustrate the research work table and figures has been used for data presentation to evaluate risk and return, the present study has been used financial and statistical tools.

3.5.1. Financial Tools

3.5.1.1. CAPM Equation/security market line (SML) using CAPM model, the investor can estimate the required rate of return stock, the intrinsic value of the stock in inversely related to required rate of return of stock other thing remaining the same higher required rate of return will lower the intrinsic value of stock. CAPM models, helps for pricing implications of common stock.

The relationship between an assets returns and its systematic risk can be expected by CAPM which is also called the security market line (SML). SML is the line showing the relationship between systematic risk index (beta) and required rate of return. The equation of the CAPM or SML is :

CAPM = Capital Assets Pricing Model.

MPS = Market Price of stock

Required Rate of Return (R_j) = $RF + [E(R_m) - R_F] \times \beta_j$

where

R_F = Risk Free rate of return

$E(R_m)$ = Expected rate of return of Market

β = Beta of asset.

3.5.1.2. Risk Premium

Risk premium is record for bearing the risk. In other word risk premium as the different between the return on risky investment and that on a risk free investment. To calculate risk premium, we use treasury bills, (TBS). They are short term government securities. It can be bought and sold anytime, thus they have liquidity. Also they don't have the difficult. Treasury bills are also called risk free Securities, which can be replaced on risk free for the study treasury bills period has been taken 364 days.

Risk premium = $R_j - R_f$

3.5.2. Statistical Tools

3.5.2.1. Expected Rate of Return

The expected rate of return is the expected after tax increase in the value of initial investment over the holding period. The expected rate of return can be count under this formula.

Expected rate of return ($\overline{Ri}$) = $P_1R_1 + P_2R_2 + \ldots\ldots\ldots + P_nR_n$

$$= \sum_{i=1}^{n} P_iR_i$$

where, R_i = Possible i^{th} outcomes.

P_i = Probability of the i^{th} outcomes

n = number of possible outcomes

$\overline{Ri}$ = Weight average of the possible outcomes.

3.5.3.2. Average Rate of Return

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

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

$E(R_j)$ = Expected rate of return

$\sum R_j$ = Summation of the return

n = No. of observations.

3.5.2.3. Standard Deviation ($\pm_j$)

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. Also it is a measures the dispersion of return around the mean. The formula for calculating the standard deviation is:

$$\sigma_j = \sqrt{\sum_{t=1}^{n} \frac{\left(R_j - \overline{R_j}\right)^2}{n}}$$

Where,

σ_j = Standard deviation of return stock j during the time period.

R_j = The possible rate of return

$\overline{R}_j$ = The average Mean return.

n = Number of observation.

3.5.2.4. Coefficient of Variation

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.

$$CV = \frac{\sigma_j}{\overline{R}_j}$$

Where, σ_j = Standard deviation of stock j

$\overline{R}j$ = Average mean return of stock j

3.5.2.5. Beta coefficient ( )

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;

$$\beta_j = \frac{Cov(j.m)}{\sigma^2 m}$$

Where, β_j = Beta of security j

σ_m^2 = Variance of market

Cov (j_m) = Covariance between security and market.

$$\text{Cov}\ (R_j\ R_m) = \frac{\sum\left[(Rj - \overline{Rj}) \times (Rm - \overline{Rm})\right]}{n}$$

3.5.2.6. Systematic Risk

Systematic risk is the market related risk. It is also called the market risk or veritable risk. For e.g. institution, interest rate, inflation, political changes, technology etc.

Systematic Risk = $\beta_j^2 \times \sigma_m^2$

3.5.2.7. Unsystematic Risk

It is known as diversifiable risk. Also it is non-market related 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 = Var (σ) - Systematic risk

3.5.2.8. Correlation Coefficient

It is the relationship between two variable, dependent and independent variables. It is also measured the two assets relationship. It's value are limited between the rank of +1 and -1. Karl person's method is used to calculate correlation coefficient. A Positive Correlation Coefficient indicate that the return from two securities generally move in the same direction and vice - versa. Correlation coefficient is used to test the significant between and expected return. Microsoft excel has used to calculate between risk and return.

$$r = \frac{\text{Cov}\quad(x,\ \ y)}{\pm_x \times \pm_y}$$

Significance test is necessary Since sometime interpretation of the result of the correlation coefficient may be misleading. Significant test is done with the help of calculation of the problems error.

Problem Error (P.E.) = $0.6745\frac{1-r^2}{\sqrt{N}}$

Where, N = Number of pairs of observation

r = coefficient of correlation

3.6. Limitation of Methodology

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

1. The major portion of analysis and interpretation has been done on the basic of available secondary data and information so the consistency of finding and analysis are depend upon the reliability of the secondary data and information. The data analysis depends upon the models, which had used for data analysis.
2. The study had used average rate return as expected rate of return.
3. For the study, 15th July 2000 had been taken as based year.

CHAPTER-IV
DATA PRESENTATION AND ANALYSIS

This chapter focuses on the data analysis and data presentation of the sampled banks. The study covers ten years period from 15th July 2000 to 15th July 2010. This chapter considered of Annual return, average return, coefficient of variance, standard deviation, risk premium, correlation coefficient and Beta coefficient of sampled banks. Beta coefficient is used to measure market sensitivity. The standard deviation is used to measure total risk. Similarly, years end return and average return are used to evaluate the return position of sampled banks. It has also demonstrated the figures and tables to analyze the present data. The last of this chapter has deals with the major finding of the study.

4.1. Data Presentation and Analysis

4.1.1. Analysis of Annual Return of Sampled Bank

There are four commercial bank listed with NEPSE. They are NABIL, HBL, NIB and EBL. The study period covered the 15th July 2000 to 15th July 2010 to analysis risk and return of commercial bank are used figures and tables. Annual return of sampled bank is calculated by using dividend per share, closing and opening price of sampled bank. Trend line has been demonstrated to analyze Annual return of individual bank. This Chapter also shows the overall return of four commercial banks.

4.1.1.1. Analysis of Annual Return of NABIL Bank

The every year end return of NABIL over the study period has been presented in table 4.1.

Table 4.1 Annual Returns and Average Rate of Return of NABIL

Year	Closing Price (Rs)	Dividend (Rs)	$Rj = \frac{P_t - P_{t-1} + Div.t}{P_{t-1}}$
2000/01	430	30	Insufficient data
2001/02	700	50	0.74
2002/03	1400	405	1.58
2003/04	1500	40	0.10
2004/05	735	20	-0.49
2005/06	735	50	0.07
2006/07	1000	65	0.45
2007/08	1505	70	0.58
2008/09	1675	85	0.16
2009/10	1725	80	0.08

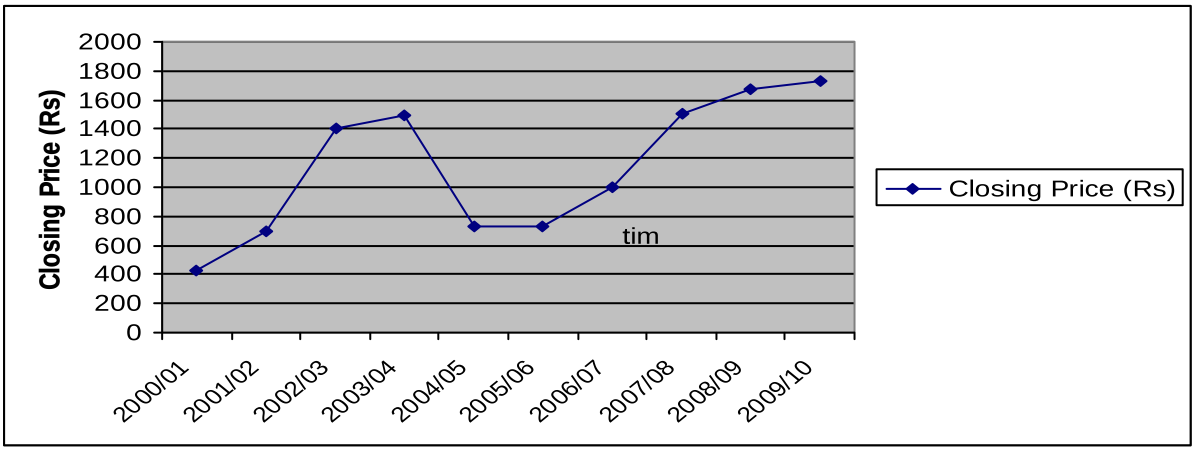
Sources: Annual Report of NABIL Bank.

Average rate of return $\overline{Rj} = \frac{\sum Rj}{n} = \frac{3.27}{9} = 36.33\%$

NABIL bank has maximum year end return in year 2002/03 i.e. 158%. Average return of NABIL is 36.33%. The figure 4.1 exhibits the trend line of Price movement of NABIL.

Figure 4.1

Trend Line of Price movement of NABIL Bank

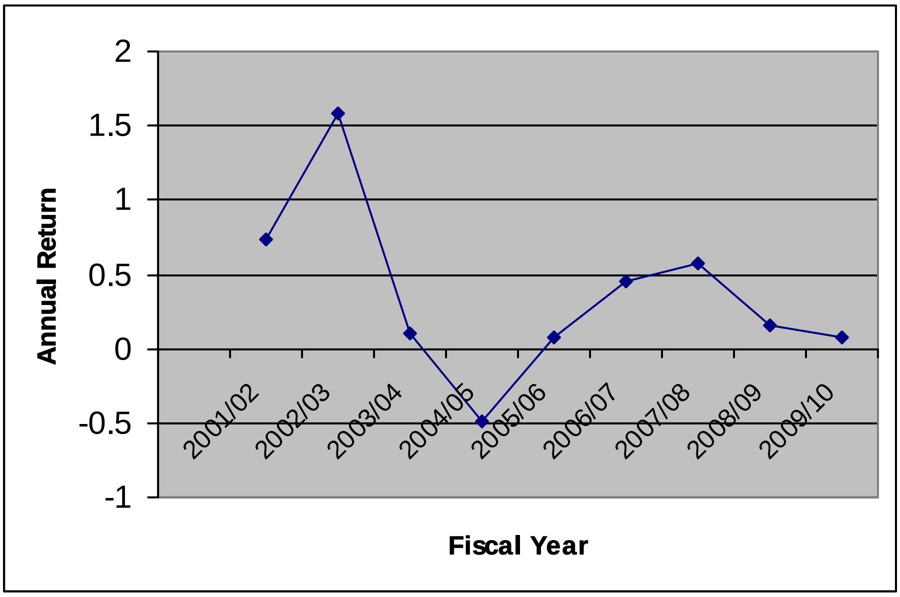


Fiscal Year

In above figure 4.1, the closing price of NABIL bank is maximum in the year 2009/10. Also the closing price of NABIL is minimum in the year 2004/05 and 2005/06. The line of closing price is upward and down ward because the closing price has been fluctuation every years. But the year 2004/05 and 2005/06 closing price is same.

Fig 4.2

Trend Line of Annual Return of NABIL Bank



The trend line of NABIL is shown in upward and downward slope. In the year 2005, NABIL year end return is negative that is 49%, which is minimum point over the study period.

4.1.2 Analysis of Annual Return of Himalayan Bank

The Annual return of HBL over the study period has been presented in table. 4.2.

Table 4.2

Annual Return and Average Rate of Return of HBL

Year	Closing Price (Rs)	Dividend (Rs)	$Rj = \frac{P_t - P_{t-1} + Div.t}{P_{t-1}}$
2000/01	1500	475	
2001/02	1000	125	-0.25
2002/03	1700	450	1.15
2003/04	1600	360	0.15
2004/05	920	199	-0.30
2005/06	965	187	0.25
2006/07	1010	235	0.29
2007/08	1100	503	0.58
2008/09	1700	300	0.82
2009/10	1850	250	0.23

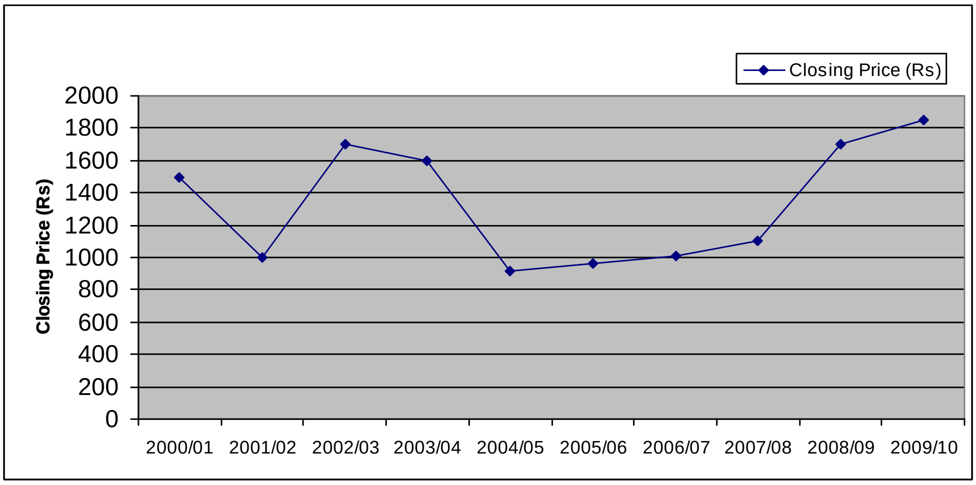
Sources: Annual Report of HBL Bank

Average rate of return $\overline{Rj} = \frac{\sum Rj}{n} = \frac{2.92}{9} = 32.44\%$

Annual return of HBL has Maximum in year 2003 i.e. 115 percent which is maximum than previous years return. In 2002 and 2005; Himalayan banks years return is negative. Also the average annual return of HBL is 32.44%.

Fig. 4.3

Trend line of Price movement of HBL

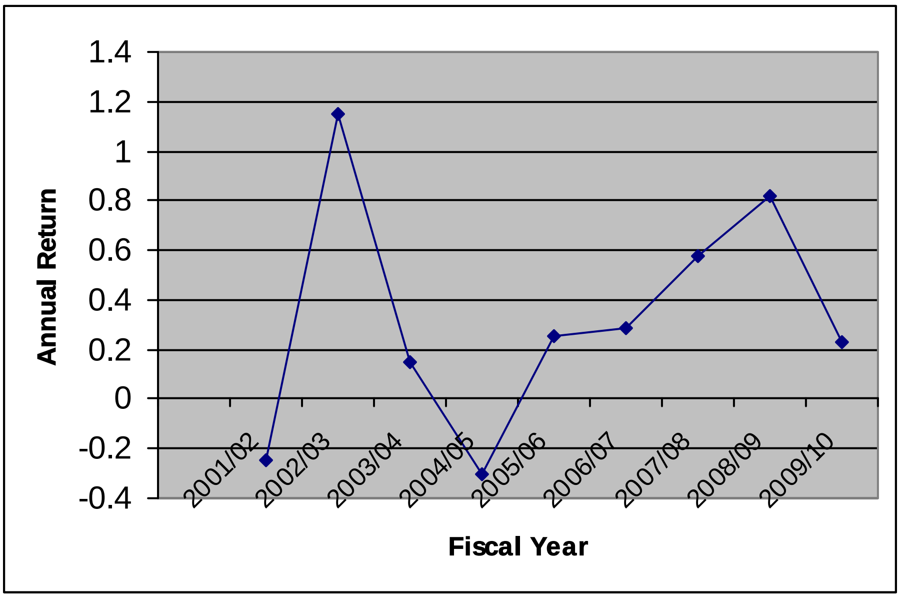


Fiscal Year

In above figure 4.3, the closing price of HBL is maximum in year 2009/10. Also the closing price of HBL is minimum in year 2004/05. The figure 4.3 has been show the closing price of HBL is not same every year so that the line of figure has been upward and downward.

Fig. 4.4

Trend Line of Annual Return of HBL



In above figure 4.4 Annual Return of HBL has maximum in 2003 i.e. 115% which is maximum than previous years return. In 2004 and 2005, Himalayan Banks years end return is negative or no return. Also the average annual return of HBL is 32.44%.

4.1.3 Analysis of Annual Return of Nepal Investment Bank

The Annual return of NIB over the study has been presented in table 4.3

Table 4.3

Annual Return and Average rate of Return of NIB

Year	**Closing Price (Rs.)**	**Dividend (Rs.)**	$Rj = \frac{P_t - P_{t-1} + Div.t}{P_{t-1}}$
2000/01	822	30	
2001/02	1401	377.75	1.16
2002/03	1150	0	-0.18
2003/04	760	228	-0.14
2004/05	795	20	0.07
2005/06	940	15	0.20
2006/07	800	12.5	- 0.14
2007/08	885	14.5	0.12
2008/09	935	17	0.08
2009/10	1050	19	0.14

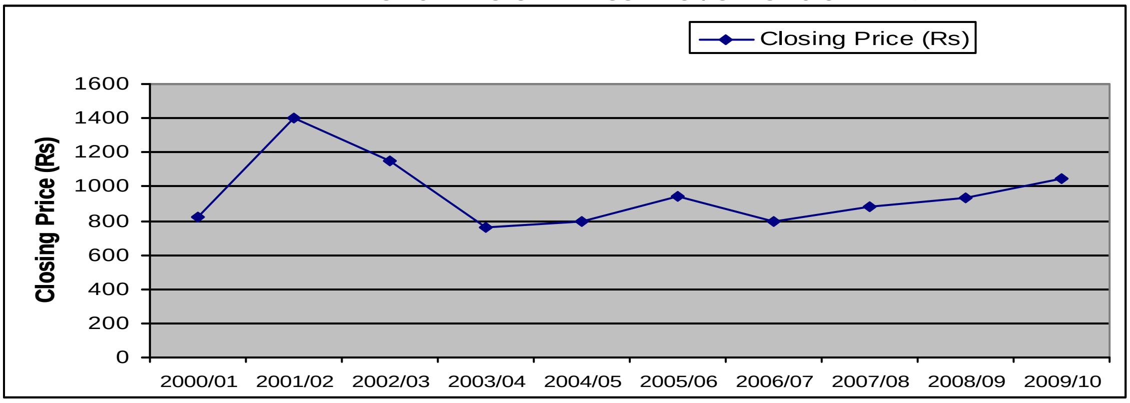
Sources: Annual Report of Investment Bank

Average rate of return $\overline{Rj} = \frac{\sum Rj}{n} = \frac{1.309}{9} = 14.54\%$

Closing Market Price per share of NIB has maximum in the year 2001/02. The trend line of Annual return over the study period has been depicted in fig 4.6. Average annual rate of return of NIB is 14.54% over the study period.

Fig. 4.5

Trend line of Price movement of NIB

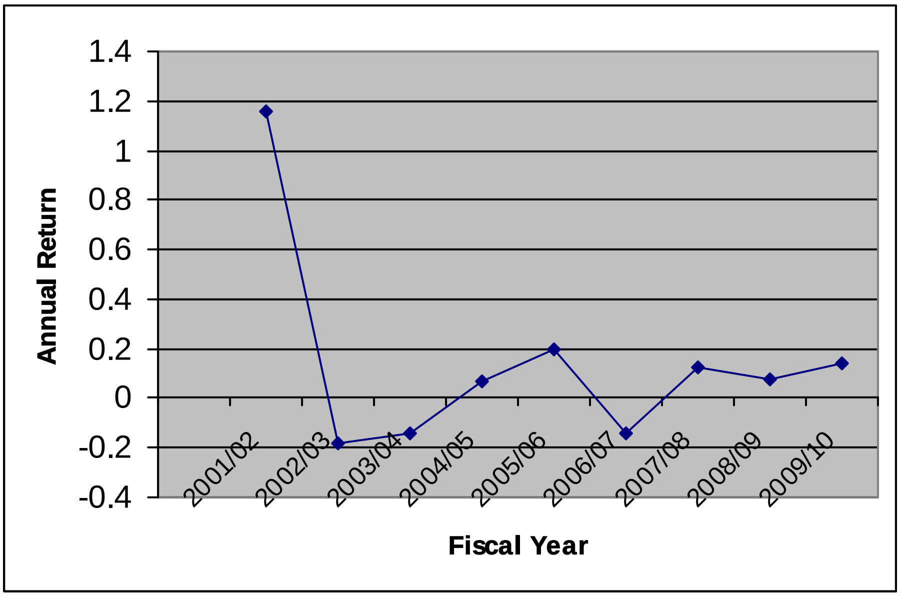


Fiscal Year

In above figure 4.5, the closing price of NIB is maximum in year 2001/02. Also the closing price of NIB is minimum in year 2003/04. The figure 4.5 has been show the closing price of NIB is not same every year. So that the line of figure has been upward and downward.

Fig. 4.6

Trend Line of Annul Return of NIB



Annual return of NIB has maximum in year 2001/02 i.e. 116 % which is maximum than previous year return. In 2002/03, 2003/04 and 2006/07 NIB years return is negative.

4.1.2 Analysis of Annual Return of Everest Bank

The Annual return of Everest Bank Limited has been presented in table 4.4.

Table 4.4

Annual Return and Average Rate of Return of EBL

Year	**Closing Price (Rs)**	**Dividend (Rs)**	$Rj = \frac{P_t - P_{t\text{-}1} + Div.t}{P_{t\text{-}1}}$
2000/01	184	15	
2001/02	407	195	2.27
2002/03	980	80	1.60
2003/04	750	86	-0.14
2004/05	430	20	-0.40
2005/06	445	20	0.08
2006/07	680	20	0.57
2007/08	870	20	0.31
2008/09	950	38	0.13
2009/10	1000	46	0.10

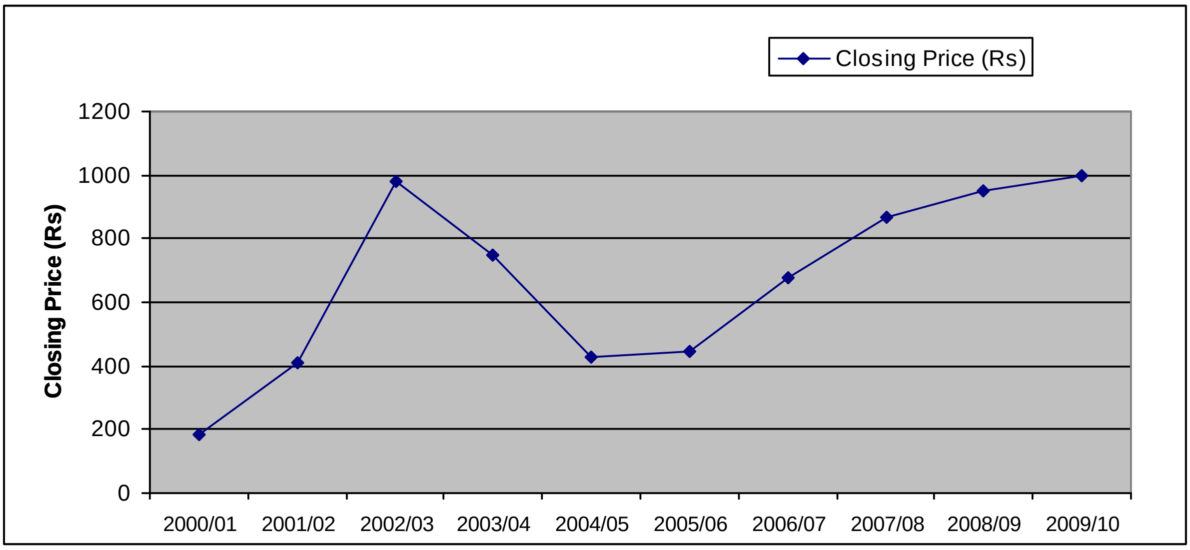
Sources: Annual Report of EBL Bank

Average rate of return $\overline{Rj} = \frac{\sum Rj}{n} = \frac{4.52}{9} = 50\%$

The closing market price per share of Everest bank is less than among four banks. In the year 2001/02 the Everest bank has also maximum return 227%. The trend line of Annual return of EBL over the study period has been depicted in figure 4.8.

Fig. 4.7

Trend line of Price Movement of EBL

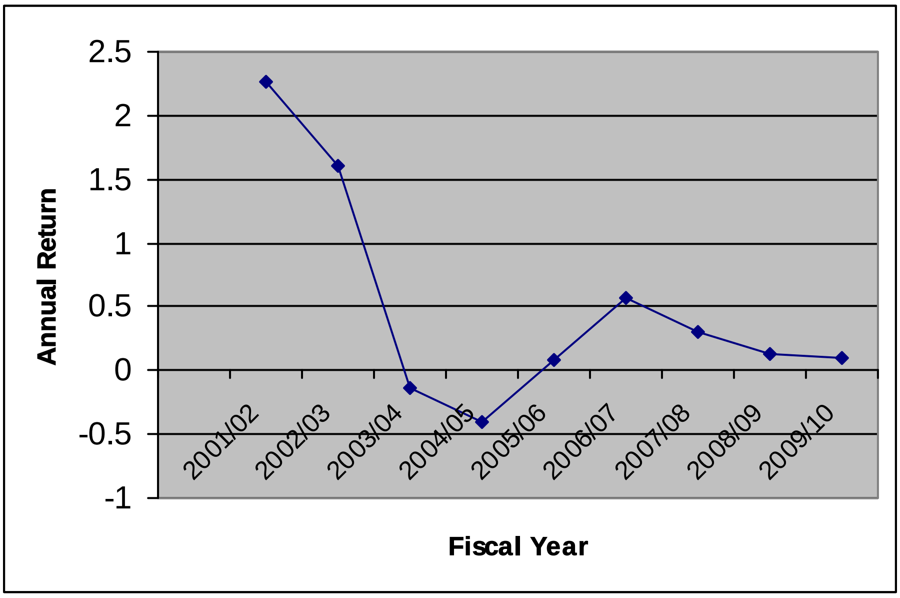


Fiscal Year

In above figure 4.7 the closing price of EBL is maximum in year 2009/10. Also the closing price of EBL is minimum in the year 2000/01. The figure 4.7 has been show the closing price of EBL is not same every year. So that the trend line of EBL is upward and downward.

Fig 4.8

Trend Line of Annual Return of EBL



In above figure annual return of EBL has maximum in year 2001/02. i.e. 227%. In the year 2003/04 and 2004/05, EBL has negative return. The figure 4.7 has been show the closing price of EBL is not same every year. So that, the line of figure is upward and downward.

4.1.3 Comparative Analysis of Annual Return of Sampled Banks

Table 4.5

Comparative Analysis of Annual Return of Sampled Banks

Year	NABIL	HBL	NIB	EBL
2000/01				
2001/02	0.74	-0.25	1.16	2.27
2002/03	1.58	1.15	-0.18	1.60
2003/04	0.10	0.15	-0.14	-0.14
2004/05	-0.49	-0.30	0.07	-0.40
2005/06	0.07	0.25	0.20	0.08
2006/07	0.45	0.29	-0.14	0.57
2007/08	0.58	0.58	0.12	0.30
2008/09	0.16	0.82	0.08	0.13
2009/10	0.08	0.23	0.14	0.10
Average	3.27	2.92	1.309	4.51

The annual return of NABIL in 2002/03 is highest. In 2004/05 NABIL Bank has negative annual return. In 2002/03 HBL has highest annual return and in 2002 and 2005 HBL has negative return. The annual return of NIB and EBL in 2001/02 is highest. Similarly NIB has negative return in 2002/03, 2003/04 and 2006/07. EBL has negative return in 2003/04 and 2004/05.

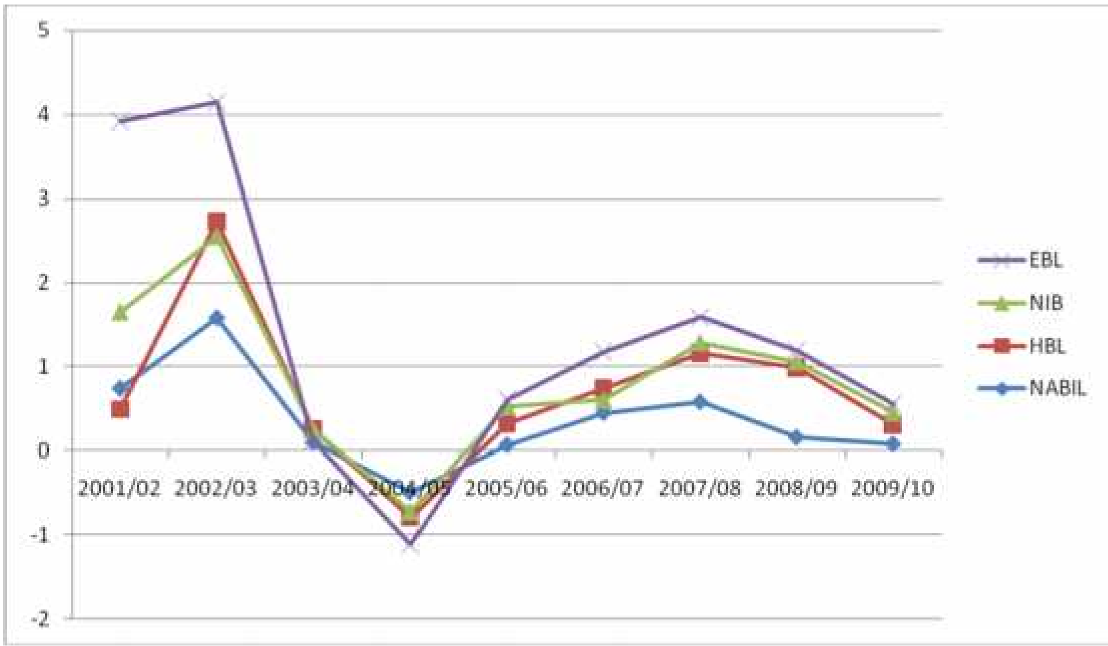
The average rate of return of NABIL, HBL, NIB and EBL are 36.33%, 32.44%, 14.54% and 50%. As a result, EBL has the highest Annual return and

NIB has the lowest annual return. As the Fluctuation of annual return the line has been upward and downward.

As a whole HBL, NABIL and EBL result are satisfactory but NIB is not satisfactory. The Annual return over the study period has been depicted in fig. 4.9.

Fig. 4.9

Comparative Analysis of Annual Return of Sampled Bank



Capital market indicates overall share price of listed companies. But commercial bank sector index indicates share price of listed commercial banks only. In this chapter the study has describe the relationship between market index and commercial banks sector index. The data for the study has been taken from NEPSE. Annual report and trading report. To calculate annual return, the study has been used opening and closing price of share of NEPSE and commercial banks sector index return over the study period has been presented in table 4.6.

Table 4.6

Expected Market Return and Commercial Banks Return

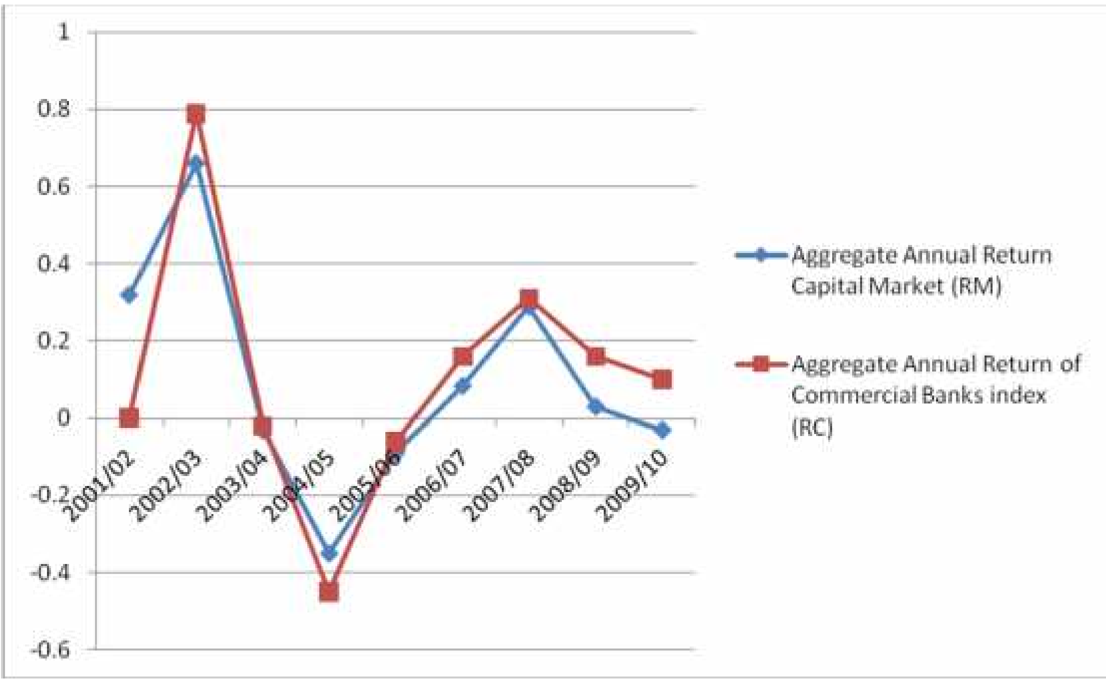
Year	**NEPSE**	**Aggregate Annual Return Capital Market (R_m)**	**Commercial Bank Index Closing**	**Aggregate Annual Return of Commercial Banks Index (R_C)**
2000/01	163.35		218.82	
2001/02	216.35	0.32	219.04	0.001
2002/03	360.7	0.66	392.71	0.79
2003/04	348.43	-0.03	384.04	-0.02
2004/05	227.54	-0.35	212.68	-0.45
2005/06	204.86	-0.09	200.67	-0.06
2006/07	222.04	0.084	231.97	0.16
2007/08	286.07	0.29	304.64	0.31
2008/09	297.04	0.03	354.84	0.16
2009/10	287.5	- 0.03	392.54	0.1
		$\sum R_M = 0.89$		$\sum R_C = 0.991$
		$\bar{R}_M = 9.88\%$		$\overline{R_C} = 11\%$

Source: Annual Report of commercial Bank and NEPSE.

Average return of commercial banks is 11% and Capital market return is 9.88%. As a result market return is more fluctuation than commercial banks sectors index. Aggregate Annual return lines have been upward and downward because the return is not same every year. The commercial banks sector index return and capital market return over the study period has been depicted in fig. 4.10.

Fig. 4.10

Expected Market Return and Commercial Banks Return



4.1.4 Analysis of Risk Premium of Commercial Banks

In the study has been described about the risk premium of sampled commercial banks and its sector. In this section has also described capital market risk premium. Risk free rate of return has been taken from NRB to calculate risk premium and individual annual return taken from table 4.1. to 4.4. Similarly, annual return of capital market and commercial bank sector has been taken from 4.6. Risk premium of above sector has been calculated by using formula, which is given on research methodology 3.5.1.2. Risk premium of individual banks, capital market and commercial bank sector over the study period has been presented in table 4.7.

Table 4.7

Calculation of Risk premium of individual Banks, Capital Market and Commercial Bank Sectors index

Year	NABIL (R_j- R_f)	HBL (R_j- R_f)	NIB (R_j- R_f)	EBL (R_j- R_f)	Aggregate of market (R_j- R_f)	Aggregate of Commercial Bank (R_j- R_f)
2000/01					+52	
2001/02	0.719	-0.271	1.139	2.249	0.299	-0.02
2002/03	1.534	1.104	-0.226	1.554	0.614	0.744
2003/04	0.05	0.104	-0.189	-0.189	-0.079	-0.069
2004/05	-0.537	-0.347	0.023	-0.447	-0.397	-0.497
2005/06	0.035	0.215	0.165	0.045	-0.125	-0.095
2006/07	0.377	0.253	-0. 177	0.533	0.043	0.123
2007/08	0.623	0.537	0.081	0.257	0.247	0.267
2008/09	0. 123	0.783	0.038	0.093	-0.003	0.123
2009/10	0.032	0.197	0.107	0.067	0.207	0.063
Total	2.956	2.575	0.961	4.162	0.806	0.639

From the above table the risk premium of NIB Bank has the lowest risk premium and EBL. has the highest risk premium. Among four- Banks, EBL has the highest reture and NIB has the lowest return. The Table 4.7 also represents risk premium of market index and sector index were market risk premium more than commercial banks risk premium, i.e, 0.806 and 0.639 respectively.

4.1.5 Comparison between Average Rate of Return and Required Rate of Return of Commercial Banks in Nepal

Capital assets pricing model has been used to calculated required rate of return of sampled banks, which is given in research methodology 3.5.1. To calculate required rate of return has been taken from Table (4.1 to 4.4) and excess return is calculated by using average and required rate of return. Risk free rate of return has taken from NRB. It is average of Treasury bill rate (364 days) of past 9 year's rate of treasury bills. Treasury bill are taken 364 days. Average risk free rate approximately 3.87. Average rate of return and required rate of return over the study period has been presented in Table 4.8.

Table 4.8

Average Rate of Return and Required Rate of Return and Price Evaluation

Banks	Average rate of return	Required rate of return	Price
NABIL	36.33%	15.71%	under priced
Himalayan	32.44%	12.22%	under priced
Investment	14.54%	4.83%	under priced
Everest	50%	18.17%	under priced

Source: Appendix VIII.

4.1.6 Risk Analysis

Previous analysis has only observe return position of individual banks, risk premium of capital market, risk premium of commercial banks sector index and individual sampled banks. In this section I have study the risk position of individual commercial banks. In this section the study has only focused on standard deviation, Beta, Risk indicator (Systematic and Unsystematic risk) and relative measurement of risk (variance) from the risk perspective, standard deviation and variance is calculated through Beta is taken as an indicator to measure the relative risk of the individual stock to the market. In terms of Beta coefficient, when beta is negative the movement of market (NEPSE) in negative.

4.1.6.1 Risk Analysis of NABIL Bank

Risk Analysis of NABIL Bank over the study period has been presented in Table 4.9

Table 4.9

Risk Analysis of NABIL Bank

Particulars	NABIL Bank
Variance	0.2979
Standard Deviation	0.5458
Beta Coefficient	1.97
Co-variance	0.1475
Total Risk	0.2979
Systematic Risk	0.290
Unsystematic Risk	0.0079
Coefficient of variation	1.50
Average rate of Return	36.33%

Source: Appendix II.

Beta of NABIL is 1.97 it reveals that the stock has positive relation with the market (NEPSE). As beta of this stock is measure. 1.97 the positive change in NEPSE. From this view point of volatility, the stock is more volatile than the market. Systematic risk and unsystematic risk of the bank are 0.290 and 0.0079 respectively. So the stock can be categorized as aggressive stock which is more risky than the market.

4.1.6.2 Risk Analysis of Himalayan Bank Limited

Risk analysis of HBL over the study period has been presented in Table 4.10.

Table 4.10

Risk Analysis of HBL

Particulars	HBL
Variance	0.1953
Standard Deviation	0.4419
Covariance	0.104
Beta Coefficient	1.388
Total Risk	0.1953
Systematic Risk	0.1443
Unsystematic Risk	0.051
Coefficient of variation	1.36
Average rate of Return	32.44%

Source : Appendix III.

The Beta of Himalayan Bank is 1.388. As the result reveals that the stock has positive correlation with the market (NEPSE). The return of Himalayan Bank is more volatile than the market. As Beta of this stock is measured 1.388, the positive change NEPSE, the stock will have positive response. From the view point of volatility, the stock is more volatility than the market. The variance has indicates the total risk of the bank is 0.1953. Systematic and unsystematic risk are 0.1443 and 0.051.

4.1.6.3 Risk Analysis of Nepal Investment Bank

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

Table 4.11

Risk Analysis of Investment Bank

Particulars	NIB
Variance	0.1458
Standard Deviation	0.3818
Covariance	0.012
Beta	0.16
Total Risk	0.1458
systematic	0.0019
Unsystematic Risk	0.1439
Coefficient of variation	2.626
Average rate of Return	14.54%

Source: Appendix IV.

From this table beta of Nepal Investment bank is 0.16. It reveals that the stock have positive correlation with the market (NEPSE). The return of Nepal Investment Bank is less volatile than the market. The Beta of this stock is measure 0.16 the positive change in NEPSE, the stock will have positive response. From the view point of volatility the stock less volatile than the market. The variance indicates the total risk of the bank which is 0.1458. Systematic risk and unsystematic risk of the banks are 0.0019 and 0.1439 respectively.

4.1.6.4 Risk Analysis of Everest Bank Limited

Risk analysis of EBL over the study period has been presented in Table 4.12

Table 4.12

Risk Analysis of Everest Bank

Particulars	EBL
Variance	0.6756
Standard Deviation	0.8219
Covariance	0.1787
Beta	2.38
Total Risk	0.6756
systematic Risk	0.4243
Unsystematic Risk	0.2513
Coefficient of variation	1.64
Average rate of Return	50%

Source: Appendix V.

Beta of Everest Bank is 2.38, the Beta reveals that the stock has positive correlation with the market (NEPSE), from the view point of volatility the stock is more volatility than the market. The total risk of the banks is 0.6756 and systematic risk is0.4243. The average rate of return of this bank is 50%.

4.1.6.5 Comparative Analysis and Compare the Unsystematic Risk for sampled banks.

This section only explain comparative analysis of four commercial banks. To analysis the study has been taken data from the table 4.9-4.12, comparative analysis has been presented in Table 4.13.

Table 4.13

Comparative Analysis of four Sampled Banks

Particulars	NABIL	HBL	NIB	EBL
Variance	0.29798	0.1953	0.1458	0.6756
Standard Deviation	0.5458	0.4419	0.3818	0.8219
Covariance	0.1475	0.104	0.012	0.1787
Beta	1.9680	1.388	0.16	2.38
Total Risk	0.2979	0.1953	0.1458	0.6756
systematic Risk	0.290	0.1443	0.0019	0.4243
Unsystematic Risk	0.0079	0.051	0.1439	0.2513
Coefficient of variation	1.50	1.36	2.63	1.64
Average rate of Return	36.33%	32.44%	14.54%	50%

Source: Appendix II-V

The table 4.13 has been presented overall risk indicates of NABIL, HBL, NIB and EBL. Everest bank limited has the highest Average rate of return of 50%. NIB has the lowest average rate of return of 14.54%. The average rate of NABIL, HBL has 36.33% and 32.44%. The total risk of EBL is highest it is 0.6756 and lowest total risk of NIB is 0.1458. The result shows that the EBL has the highest beta 2.38 than other sampled banks and NIB has the lowest Beta coefficient i.e. 0.16. The result shows that EBL has highest covariance i.e. 0.1787 and NIB has the lowest covariance i.e. 0.012. Unsystematic risks can diversity but systematic risk can't diversity. Among four banks NIB has minimum systematic risk and EBL has highest systematic risk.

Unsystematic risks in one that affects of single assets or a small group of Assets. Such risk is caused by factor specific to a particular firm. These factors are availability of raw material, efficiencies of management strikes by labor union, financial average. The unsystematic risk of NABIL, HBL, NIB and EBL is 0.0079, 0.051, 0.1439 and 0.2513. Compare the four banks EBL has the highest unsystematic risk and NABIL has lowest unsystematic risk.

4.1.6.6 Correlation between risk and expected return

Correlation coefficient indicates the relationship between two or more variable. It shows the significant and insignificant result between two or more variables. The correlation between risk and return has been analyzed table 4.14. Theoretically, when risk increases return also increase and vice-versa. For the analysis, standard deviation and expected rate of return has been taken from previous calculation and it has been calculated by using Microsoft Excel program. Correlation between risk and Expected return has been presented in table 4.14.

Table 4.14

Correlation between Risk and Expected Return

Risk standard deviation	Return Expected return	Correlation	PE	6 PE	Result	Remarks
		0.9095	0.0583	0.3498	r > 6PE	significant

Source: Appendix IX.

The tables results show that the correlation 0.9095 between risk and return probably error is 0.0583 and 6 PE is 0.3498. The correlation between risk and return is greater than PE and 6 PE. From the basis of following statement, positive correlation indicates that when risk increase return also increase.

4.2 Major findings of the study

4.2.1 The Average rate of return of NABIL, HBL, NIB and EBL are 36.33%, 32.44%, 14.54% and 50%. As the result the Everest Bank has the highest return and NIB has the lowest return.

4.2.2 In the year 2004/05 NABIL, HBL & EBL are negative annual return but NIB has positive return. Also in 2001/02 HBL, In 2002/03, 2003/04 and 2006/07 NIB has negative return.

4.2.3 Standard deviation of NABIL, HBL, NIB and EBL are 0.5458, 0.4419, 0.3818, 0.8219 and Beta Coefficient of NABIL, HBL, NIB and EBL are 1.9680, 1.388, 0.16 and 2.38 respectively.

4.2.4 The standard deviation of EBL is highest & standard deviation of NIB is lowest. Also the Beta coefficient of EBL is highest and Beta coefficient of NIB is Lowest.

4.2.5 Covariance of NABIL, HBL, NIB and EBL are 0.1475, 0.104, 0.012 and 0.1787 respectively. Also the covariance of EBL is highest and covariance of NIB is lowest.

4.2.6 Systematic Risk of NABIL, HBL, NIB and EBL are 0.290, 0.1443, 0.0019 and 0.4243 respectively. As a result unsystematic risk of NABIL, HBL, NIB and EBL are 0.0079, 0.051, 0.1439 and 0.2513 respectively.

4.2.7 Coefficient of variation of NABIL HBL, NIB and EBL is 1.50, 1.36, 2.63 & 1.64 respectively. The coefficient of variation NIB is highest and HBL is lowest.

4.2.8 According to CAPM theory, EBL has the highest required rate of return which is 18.17 percentages and NIB has the lowest required rate of return which is 4.83 % respectively.

4.2.9 Correlation coefficient between risk and return of sampled bank is 0.9095 which probable error (PE) and 6 (PE) are 0.0583 and 0.3498 respectively.

4.2.10 The closing price trend line of four sampled banks is fluctuated because the closing price of all bank has deviated over the study period.

CHAPTER V
SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Summary

Risk and return are the two parts. "If there is no risk there is no return." Risk and return measure the performance of any organization, it is a key factor of financial sectors. For any investment decision, investors should calculate rate of return and risk. The economic is growing rapidly, which force the life style change fast.

Banking sector is must dynamic part of economic which collects unused fund and mobilizes it in needed sectors. Bank is the heart of trade commerce and industry. In our country joint venture bank and private sectors bank has performed better than Nepalese government sectors banks because of trading and development, high skill management sectors, efficient and capacity of proper risk management. Capital market play vital role to develop the economic world. NEPSE is the heart of capital market. Capital market. In the primary and secondary different companies and investors exchanges the shares transaction. The present study has been analyzed risk and return of common stocks investment. Common stock is the most risky security and life blood of stock market. The main objective of the study is to analyze the risk and return of commercial bank and it also focused of common stock of listed commercial bank.

Four listed commercial bank like NABIL, HBL, NIB and EBL in NEPSE have been taken as sample and their individual risk and return were calculated and analyzed as a whole to find out the performance of each bank. While analyzing the risk and return reviews of related studies has been done. Review of Literature for the study have been described theoretical review has been presented definition of risk and return of different books and authors. Similarly, journal and thesis have reviewed from web side and master dissertation T.U. the study has also included research methodology to fulfill the objective of present study. To analyze the data standard deviation, beta, required rate of return, expected rate of return and coefficient of variation have been calculated. The study is fully dependent upon secondary sources. For, the study secondary data were collected from NEPSE, NRB and related commercial bank's annual report and web side. The study has mainly focused on risk and return of listed commercial banks. Presentation and analysis have been measured beta, CV, standard deviation, required rate of Return, expected return. On the basic of major following conclusion are drown.

5.2 Conclusion

5.2.1 The risk of common stock of EBL is most risky while NIB is lowest risky. If investors want to invest the share of banking sector they can purchase share of NIB.

5.2.2 Beta of EBL is highest and beta of Nepal Investment Bank is lowest. It shows that EBL has highest risk and NIB has lowest risk.

5.2.3 Average return of EBL has the highest (50%) and NIB has the lowest (14.54%). From the view point of average rate of return investor can invest the share of EBL.

5.2.4 The present study has mainly focused on risk and return analysis from this point. Investment bank has the lowest risk. If investor is risk averter he/she can invest in NIB securities but investor is risk seeker, he can invest in EBL.

5.2.5 According to CAPM theory EBL has the highest required rate of return which is 18.17% and NIB has the lowest required rate of return is 4.83% respectively. All four sampled banks are under priced so it is concluded that investor will purchase share of commercial bank.

5.2.6 From the study result, it is concluded that none of the share price are in equilibrium because all the sampled banks average rate of return is more then required rate of return.

5.3 Recommendation

Above conclusion have presented the following recommendation:

5.3.1 The beta of EBL is 2.38 which is the highest among sampled banks. The beta that it has the highest systematic risk so it is recommended that sampled bank should diversity their investment policy to reduce the risk.

5.3.2 The common stock returns of commercial bank are highly sensitive to market. They are highly positively correlated to the market. So, market should be analyzed.

5.3.3 It is believed that higher the return with higher the risk and lower the return with lower the risk. Investment risks are minimized through a large and diversified portfolio. Divesting the investment is a way of reducing the risk, so all the risky sampled banks are recommended to diversity their investment policy in less risky securities.

5.3.4 Most of the researchers have included only five years data but only five years data can't be sufficient to analyze risk and return of commercial banks. So it is suggested that future researcher should include at least 10 years data.

BIBLIOGRAPHY

Books and Reports

Alibe, Akigbe and Ann Marie Whytem Fall 2004. The Gramn-Leach Blley. Act of 1999: **Risk Implication for financial service Industry, Journal of Financial Research**, XXVII no. 3: 453- 466.

Balla, V.K. 1999. **Investment management: Security Analysis and**

Bhatta, Gopal Prasad, 1995. **Assessment of the Performance of listed**

Brealey, Richard A and Stewart (Myer), 1991. **Principle of Corporate**

Companies in Nepal. Master dis. Tribhuvan University.

Copper, Donal R and Pamela S. Schindler, 2003. **Business Research**

EBL, 15th July 1996-15th July 2005, **Annual Report**, Kathmandu: Everest Bank Limited.

Finance 4th ed. New Delhi: MC Garw Hill.

Francis, Jack Clark, 1995. **Investment of Managerial Finance** 5th ed. New Delhi Publishing Pvt. Ltd.

Gitaman, Lowrance J. 1998 **Principle of Managerial Finance** 5th ed **.** New York: Harper Collins Publication.

Hampton, John J. 1998. **Financial Decision Making (Concept, Problems and cases),** 4th ed. New Delhi: Prentice Hall of India Private Limited.

HBL, 15th July 1998-15th July 2007, **Annual Report**. Kathmandu: Himalayan Bank Limited.

Joshi, Deepak Raj, 2004. **Risk and Return Analysis of common stock of Five Lister Commercial Banks Listed in NEPSE**. Master diss., Tribhuvan University. Kathmandu: Educational Enterprises (P) Ltd.

Khadka, Ram Hari, 2004. **Analysis of Risk and Return on Selected Nepalese Commercial Banks Listed in NEPSE.** Master diss., Tribhuvan University.

Kothari, CR. 1989. **Research Methodology: Method and Techniques.** 2nd ed. New Delhi: Wishwa Prakashan.

Kothari, CR. 1991. Qualitative Techniques 2th ed. New Delhi: Vikash Publishing House Pvt. Ltd.

NABIL, 15th July 1996-15th July 2005. **Annul Report**. Kathmandu: NABIL Bank**.**

Nepal Rastra Bank Mid. July 2007. Banking and Financial Statistics no. 45. Bank and Financial Institutions Regulation Department Kathmandu: NRB.

Nepal Stock Exchange Ltd.2005. **Financial Statement of Listed Company,** Kathmandu: NEPSE**.**

Nepal Stork Exchange Ltd. 1998-2007. Trading Report vo.4-9. Kathmandu: NEPSE.

NIB 15th July 1996-15th July 2005. Annual Report, Kathmandu: Nepal

Pandey Sijapati, 2000. **Risk and Return Analysis of Common Stock**

Pandey, Primina, 2000. **Risk and Return Analysis of Common Stock**

Portfolio Management. 6th ed. New Delhi: S. Chand company Ltd. Ram Nagar.

Pradhan, surrender 1991. **Basic of Financial Management.** 1st ed.

Sharpe, William F. Gordon J. Alexander and Jeffery v, Baily 1998.

Shrestha, Amit 2003. **Risk and Return Analysis of common stock Investment of Banking Sector in Nepal.** Master diss., Tribhuvan University.

Tamang, Buddhi RAJ 2003. **Risk and Return Analysis of commercial Banks in Nepal.** Master diss., Tribhuvan University.

Upaddhaya, Sudeep 2000. **Risk and Return Analysis in Common Stock Investment.** Master diss., Tribhuvan University.

Van, Horn, James C. 1997. **Finanace Manangement and Police** 11th ed. New Delhi: Prentice Hall of India Pvt. Ltd.

Westerfield, Ross and Jordan. 1998. **Fundamentals of Corporate Finance**, 6hd ed. New Delhi: Tata MC Graw-Hill Publishing company, Ltd.

Western, m J Fred and Thomas, 9th ed. Orland of Lorda: The Dryden press.

Wolff Roward K and Prem R. Pant, 2003. **A Hand Book for Social Science Research and Thesis Writing**, 3rd ed. Kathmandu: Buddha Academy.

Journal:

Jeremy Berkowityz and James O' Brien's, 2002. How Accurate are value at - Risk Models at commercial Bank Z. **Journal of Finance and vol. 3:** 410-432, April 13, 2006 <http://www.backwell-synergy/.Comdoi/pdf 0.1046./j.1410.2002.00712>

Listed Company. January 2, 2006. Nepal Stork Exchange Ltd. <http://www.nepal Stock com/69/txt>.

Operational Data Nepal Rastra Bank <http:// www.nrb.org.np>.

Appendix I

Commercial Bank Operating in Nepal

S.N.	Name of Bank	Opening A.D
1	Nepal Bank Limited	11/15/1937
2	Rastiya Banijya Bank	1/23/1966
3	Nabil Bank Limited	7/16/1984
4	Nepal Bangladesh Bank	6/5/1993
5	Standard Chartered Bank Limited	1/30/1987
6	Himalayan Bank Limited	1/18/1993
7	Nepal SBI Bank Limited	7/7/1993
8	Nepal Investment Bank Limited	2/27/1986
9	Everest Bank Limited	10/18/1994
10	Bank of Kathmandu Limited	3/12/1995
11	Nepal Credit and Commercial Bank Limited	10/14/1996
12	Lumbini Bank Limited	7/17/1998
13	Machhapuchhre Bank Limited	10/3/2000
14	Nepal Industrial and Commercial Bank Limited	7/21/1998
15	Kumari bank Limited	3/4/2001
16	Laxmi bank Limited	3/4/2002
17	Siddartha Bank Limited	24/12/2002
18	Agricultural Development Bank	2/1/1968
19	Global Bank Limited	02/01/2007
20	Citizen Bank Limited	21/06/2007
21	Prime Commercial Bank Limited	24/09/2007
22	Sunrise Bank Limited	12/10/2007
23	Bank of Asia Nepal Limited	12/10/2007
24	Development Credit Bank Limited	23/01/2001
25	NMB Bank Limited	26/11/1996
26	Kist Bank Ltd	7/5/2009
27	Janata Bank Nepal Ltd	6/4/2010
28	Mega Bank Nepal Ltd	23/7/2010
29	Commerz & Trust Bank Nepal Ltd	20/9/2010
30	Civil Bank Ltd	26/11/201
31	Century Commercial Bank Ltd	10/3/2011

Source: NEPSE and NRB Bank

Appendix II

Calculation of Standard Deviation, Variance, Coefficient of Variation and Beta Coefficient of NABIL Bank

Year	R_j	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_j - \overline{R_j})(R_M - \overline{R_M})$	$(R_M - \overline{R_M})$	$(R_M - \overline{R_M})^2$
2000/01						
2001/02	0.74	0.3767	0.1419	0.0833	0.2212	0.0489
2002/03	1.58	1.2167	1.4803	0.6828	0.5612	0.3149
2003/04	0.1	-0.2633	0.0693	0.339	-0.1288	0.0166
2004/05	-0.49	-0.8533	0.7281	0.3830	-0.4488	0.2014
2005/06	0.07	-0.2933	0.0860	0.0554	0.1888	0.0356
2006/07	0.45	0.0867	0.0075	-0.0016	-0.0188	0.0003
2007/08	0.58	0.2167	0.0469	0.0414	0.1912	0.0365
2008/09	0.16	-0.2033	0.041	0.0129	0.0588	0.0034
2009/10	0.08	-0.2833	0.0802	0.0365	-0.1288	0.0166
	3.27	0.0003	2.6815	1.3266		0.6742

Source: Calculated on basic data extracted from NEPSE and annual report of Bank

a. **Average rate of return =** $\frac{\sum R_j}{\text{n}} = \frac{3.27}{9} = 36.33\%$

b. **Variance :** $\frac{\sum_{\text{j}=1}^{\text{n}} (\text{R}_\text{j} - \overline{\text{R}_j})^2}{\text{n}} = \frac{2.6815}{9} = 0.2979$

c. **Standard deviation (±)** $= \sqrt{Variance} = \sqrt{0.2979} = 0.5458$

d. **Total risk $\pm^2$ = 0.2979**

e. **Systematic risk = $B_j^2 \times \pm_m^2$ = $1.9680^2 \times 0.0749$ = 0.290**

f. **Unsystematic = Total risk – systematic risk**
= 0.2979 -0.290= 0.0079

g. **Covariance =** $\frac{\sum_{j=1}^{n} (\text{R}_j - \overline{\text{R}}j)(R_M - \overline{R_M})}{n} = \frac{1.3266}{9} = 0.1474$

h. **Beta Coefficient =** $\frac{Cov(R_j \times R_M)}{\pm_m^2} = \frac{0.1474}{0.0749} = 1.9680$

i. **Coefficient of variation =** $\frac{\pm_j}{\overline{\overline{R_j}}} = \frac{0.5458}{0.3633} = 1.50$

Appendix III

Calculation of Standard Deviation, CV, Variance and Beta Coefficient of Himalayan Bank

Year	R_j	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_j - \overline{R_j})(R_M - \overline{R_M})$	$(R_M - \overline{R_M})$
2000/01					
2001/02	-0.25	0.5744	0.3299	0.1270	0.2212
2002/03	1.15	0.8256	0.686	0.4633	0.5612
2003/04	0.15	-0.1744	0.0304	0.0225	-0.1288
2004/05	-0.3	-0.6244	0.3899	0.2802	-0.4488
2005/06	0.25	-0.0744	0.0055	0.0140	-0.1888
2006/07	0.29	-0.0344	0.0012	0.0006	-0.0188
2007/08	0.58	0.2556	0.0653	0.0489	0.1912
2008/09	0.82	0.4956	0.2456	-0.0291	-0.0588
2009/10	0.23	-0.0944	0.0089	0.0121	-0.1288
	2.92		1.758	0.9395	

a. Average rate of return = $\frac{\sum R_j}{n} = \frac{2.92}{9} = 32.44\%$

b. Variance: $\frac{\sum_{j=1}^{n}(R_j - \overline{R}_j)^2}{n} = \frac{1.758}{9} = 0.1953$

c. Standard deviation (±) $= \sqrt{Variance} = \sqrt{0.1953} = 0.4419$

d. Total risk $\pm^2$ = 0.1953

e. Systematic risk = $B_j^2 \pm_m^2$ = $1.388^2 \times 0.0749$ = 0.1443

f. Unsystematic = Total risk– systematic risk = 0.1953-0.1443=0.051

g. Covariance = $\frac{\sum_{j=1}^{n}(R_j - \overline{R}j)(R_M - \overline{R_M})}{n} = \frac{0.9395}{9} = 0.104$

h. Beta Coefficient = $\frac{Cov(R_j \times R_M)}{\pm_m^2} = \frac{0.104}{0.0749} = 1.388$

i. Coefficient of variation = $\frac{\pm_j}{\overline{R_j}} = \frac{0.4419}{0.3244} = 1.36$

Appendix IV

Calculation of Standard Deviation, Variance, Coefficient of Variation, Covariance and Beta Coefficient of Investment Bank Limited

Year	R_j	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_M - \overline{R_M})$	$(R_j - \overline{R_j})(R_M - \overline{R_M})$
2000/01					
2001/02	1.16	1.0146	1.0294	0.2212	0.2244
2002/03	-0.18	-0.3254	0.1059	0.5612	-0.1826
2003/04	-0.14	-0.2854	0.0814	-0.1288	0.0367
2004/05	0.07	-0.0754	0.0057	-0.4488	0.0338
2005/06	0.2	0.0546	0.0030	-0.1888	-0.0103
2006/07	-0.14	-0.2854	0.0814	-0.0188	0.0054
2007/08	0.124	-0.0214	0.0004	0.1912	-0.0040
2008/09	0.075	-0.0704	0.0050	-0.0588	0.0041
2009/10	0.14	-0.0054	0.00029	-0.1288	0.0007
	1.309		1.312		0.1082

a. Average rate of return = $\frac{\sum R_j}{n} = \frac{1.309}{9} = 14.54\%$

b. Variance: $\frac{\sum_{j=1}^{n}(R_j - \overline{R_j})^2}{n} = \frac{1.312}{9} = 0.1458$

c. Standard deviation (±) $= \sqrt{Variance} = \sqrt{0.1458} = 0.3818$

d. Total risk $\pm^2$ = 0.1458

e. Systematic risk = $B_j^2 \times \sigma_m^2 = 0.16^2 \times 0.0749 = 0.0019$

f. Unsystematic = Total risk – systematic risk = 0.1458-0.0019 = 0.1439

g. Covariance = $\frac{\sum_{j=1}^{n}(R_j - \overline{R}j)(R_M - \overline{R_M})}{n} = \frac{0.1082}{9} = 0.012$

h. Beta Coefficient = $\frac{Cov(R_j \times R_M)}{\pm_m^{\ 2}} = \frac{0.012}{0.0749} = 0.16$

i. Coefficient of Variation = $\frac{\pm_j}{\overline{R_j}} = \frac{0.3818}{0.1454} = 2.626$

Appendix V

Calculation Standard Deviation, Variance, Coefficient of Variation, Covariance and Beta Coefficient of Everest Bank Limited

Fiscal Year	R_j	$(R_j-\overline{R_j})$	$(R_j-\overline{R_j})^2$	$(R_M-\overline{R_M})$	$(R_j-\overline{R_j})(R_M-\overline{R_M})$
2000/01					
2001/02	2.27	1.7689	3.1290	0.2212	0.3913
2002/03	1.6	1.0989	1.2076	0.5612	0.6167
2003/04	-0.14	-0.6411	0.4110	-0.1288	0.0826
2004/05	-0.4	-0.9011	0.819	-0.4488	0.4044
2005/06	0.08	-0.4211	0.1773	-0.1888	0.0795
2006/07	0.57	0.0689	0.0047	-0.188	-0.0013
2007/08	0.3	-0.2011	0.0404	0.1912	-0.0384
2008/09	0.13	-0.3711	0.1377	-0.0588	0.0218
2009/10	0.1	-0.4011	0.1609	-0.1288	0.0517
Total	4.51		6.0805		1.6083

a. Average rate of return = $\frac{\sum R_j}{n} = \frac{4.51}{9} = 50\%$

b. Variance: $\frac{\sum_{j=1}^{n}(R_j - \overline{R_j})^2}{n} = \frac{6.0805}{9} = 0.6756$

c. Standard deviation ($\pm$**)** $= \sqrt{Variance} = \sqrt{0.6756} = 0.8219$

d. Total risk $\pm^2$ **=** 0.6756

e. Systematic risk = $B_j{}^2 \times \sigma_m{}^2 = 2.38^2 \times 0.0749 = 0.4243$

f. Unsystematic = Total risk – systematic risk = 0.6756-0.4243 = 0.2513

f. Covariance = $\frac{\sum_{j=1}^{n}(R_j - \overline{R}_j)(R_M - \overline{R_M})}{n} = \frac{1.6083}{9} = 0.1787$

g. Beta Coefficient = $\frac{Cov(R_j \times R_M)}{\pm_m{}^2} = \frac{0.1787}{0.0749} = 2.38$

i. Coefficient of Variation = $\frac{\pm_j}{\overline{R_j}} = \frac{0.8219}{0.5} = 1.64$

Appendix VI

Market and Commercial Bank Ltd.

Fiscal Year	NEPSE	Aggregate Annual Return of Capital Market (R_m)	Commercial Bank Index Closing	Aggregate Annual Return of Commercial Bank Index (R_c)	$(R_c - \overline{R_c})$	$(R_m - \overline{R_m})^2$	$(R_c - \overline{R_c})^2$
2000/01	163.35	-	218.82		-	-	-
2001/02	216.35	0.32	219.04	0.001	-0.109	0.0489	0.0119
2002/03	360.7	0.66	392.71	0.79	0.68	0.3149	0.4624
2003/04	348.43	-0.03	384.04	-0.02	-0.13	0.0166	0.0169
2004/05	227.54	-0.35	212.68	-0.45	-0.56	0.2014	0.3136
2005/06	204.86	-0.09	200.67	-0.06	-0.17	0.0356	0.0289
2006/07	222.04	0.08	231.97	0.16	0.05	0.0003	0.0025
2007/08	286.07	0.29	304.64	0.31	0.2	0.0365	0.04
2008/09	297.04	0.03	354.84	0.16	0.05	0.0034	0.0025
2009/10	287.5	-0.03	392.54	0.1	-0.01	0.0166	0.0001
				$\sum R_c = 0.991$		0.6742	0.8788

$$\overline{R_m} = \frac{\sum R_m}{n} = \frac{0.89}{9} = 0.0988 = 9.88\%$$

$$\overline{R_c} = \frac{\sum R_c}{n} = \frac{0.991}{9}\ 0.11 = 11\%$$

Variance of Capital Market: $$(\pm_m^2) = \frac{\sum_{t=1}^{n} (R_m - \overline{R_m})^2}{n}$$

$$= \frac{0.6742}{9} = 0.0749 = 7.49\%$$

Variance of Commercial Bank Index: $$\frac{\sum_{t=1}^{n} (R_c - \overline{R}_c)^2}{n} = \frac{0.8788}{9} = 0.0976 = 9.76\%$$

Standard Deviation of Capital Market

$$(\pm) = \sqrt{Variance} = \sqrt{0.0749} = 0.2737 = 27.37\%$$

Standard Deviation of Commercial Bank

$$(\pm) = \sqrt{Variance} = \sqrt{0.0976} = 0.3124 = 31.24\%)$$

Coefficient of Variance of Capital Market = $$\frac{\sigma_m}{\overline{R}_m} = \frac{27.37}{9.88} = 2.77$$

Coefficient of Variance of Capital Market = $$\frac{\sigma_c}{\overline{R}_c} = \frac{31.24}{11} = 2.84$$

Appendix- VII

Year	NEPSE	Commercial Bank Index	Treasury Bill Rate	Risk Free
2000/01	163.35	218.82	3.537	
2001/02	216.35	219.04	2.122	0.021
2002/03	360.7	392.71	4.5812	0.046
2003/04	348.43	384.04	4.9535	0.049
2004/05	227.54	212.68	4.717	0.047
2005/06	204.86	200.67	3.4975	0.035
2006/07	222.04	231.97	3.7273	.037
2007/08	286.07	304.64	4.2882	0.043
2008/09	297.04	354.84	3.7127	0.037
2009/10	287.5	392.54	3.2947	0.033

Source: Calculate on the Basis of Data Extracted from NEPSE & NRB.

Average Risk free rate of return ($\overline{R_F}$ **) =** $\frac{\sum R_F}{n}$ **=** $\frac{0.348}{9} = 0.0387$

= 3.87%

Appendix VIII

Calculation of Required rate of return

Banks	Beta (B_j)	Required rate of return= R_f + (ER_m-R_F) × $_j$
NABIL	1.97	3.87+ (9.88-3.87)×1.97 = 15.71 %
Himalayan	1.39	3.87+(9.88-3.87) × 1.39 = 12.22
Investment	0.16	3.87+(9.88-3.87) ×0.16 = 4.83
Everest	2.38	3.87+(9.88-3.87) × 2.38 = 18.17

Appendix IX

X_1	X_2	$d_1=X_1-A_1$ $X_1-0.4419$	$d_2 = X_2-A_2$ $X_2-0.3244$	d_1d_2	d_1^2	d_2^2
0.5458	0.3633	0.1039	0.0389	0.0040	0.0108	0.0015
0.4419	0.3244	0	0	0	0	0
0.3818	0.1454	-0.0601	-0.179	0.0107	0.0036	0.032
0.8219	0.50	0.38	0.1756	0.0667	0.1444	0.0308
		$\sum d_1$ = 0.4238	$\sum d_2$ =0.0355	$\sum d_1 d_2$ = 0.0814	$\sum d_1^2 =$ 0.1588	$\sum d_2^2 =$ 0.0643

$$r_{12} = \frac{N\sum d_1.d_2 - \sum d_1 \sum d_2}{\sqrt{N\sum d_1^2 - (\sum d_1)^2}\sqrt{N\sum d_2^2 - (\sum d_2)^2}}$$

$$= \frac{4\times 0.0814 - 0.4238\times 0.0355}{\sqrt{4\times 0.1588 - (0.4238)^2} - \sqrt{4\times 0.0643 - (0.03555)^2}}$$

$$= \frac{0.3256 - 0.0150}{\sqrt{0.6352 - 0.1796}\sqrt{0.2572 - 0.00126}}$$

$$= \frac{0.3106}{0.675\times 0.506} = 0.9095$$

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

$$= 0.6745\times\frac{1-0.9095^2}{\sqrt{4}}$$

$= 0.0583$

$6PE = 6\times0.0583 = 0.3498$