ANALYSIS OF RISK AND RETURN ON COMMON STOCK INVESTMENT OF LISTED COMMERCIAL BANKS IN NEPAL

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RECOMMENDATION

This is to certify that the thesis

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Entitled

Analysis of Risk and Return on Common Stock Investment of Listed 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.

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VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis of presented by

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And found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for

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DECLARATION

I hereby declare that the work reported in this thesis entitled "**Analysis of Risk and Return on Common Stock Investment of Listed Commercial Banks in Nepal"** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master's Degree in Business Study (M.B.S.) under the supervision of **Associate Professor Ajay Prasad Dhakal** of Central Department of Management.

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Madhusudan Kharel

July, 2011 **Researcher**

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ABBREVIATIONS

AGM	=	Annual General Meeting
CAPM	=	Capital Assets Pricing Model
C.S.	=	Common Stock
C.V.	=	Coefficient of Variation
DPS	=	Dividend per Share
EMH	=	Efficient Market Hypothesis
EPS	=	Earning per Share
FY	=	Fiscal Year
HPR	=	Holding Period Return
MPS	=	Market Price of Share
NEPSE	=	Nepal Stock Exchange
NRB	=	Nepal Rastra Bank
S.D.	=	Standard Deviation
SML	=	Security Market Line
SR	=	Systematic Risk
TU	=	Tribhuwan University
USR	=	Unsystematic Risk
CDM	=	Central Department of Management
i.e.	=	That is
Ltd.	=	Limited
A.D.	=	Anno Domini

CHAPTER - I

INTRODUCTION

1.1 General Background of the Study

Common stockholders are the equity holders and are the ultimate owners of the business. As they collectively own the, they share all the profits and bear all the losses of business. So the common stock is risky security. Investor invests in common stock for higher return. But their expected return may or may not change in realities. This uncertainty is major risk to investors in stock market investment.

The return is income received on an investment, which is expressed as dividend, plus any change in market price of and usually expressed in percent of the beginning market price of investment. Both market price of share and dividend are uncertain figures. So, the actual figure of return on investment in common stock may differ substantially from the expected return and, therefore it is said, return is reward for uncertainty. The greater variability, the riskier the security is said to be. The market price of share of a company is driven both by fundamental business values and stock market sentiment. For a given business, it is always worth attempting to identify which of those is driving its share price.

Generally, investors are risk averse. They always seek to minimize risk for same level of return and to maximize return at the same level of risk. And, they always seek higher return for more risk as risk premium. So the primary problem of investment is to identify the security, which has low risk and high return. Although, return cannot be increased substantially, risk can be reduced by diversification can eliminate the unsystematic risk, which is not explained by general market movement. Systematic risk, which is associated with change in return on the market as a whole, cannot be avoided by the diversification.

In Nepalese, the institutional set up of securities market began along with the securities exchange center (now Nepal Stock Exchange Ltd.) in 1976. In spite of

considerable development there are still more potentialities to be explored for the development of stock market in Nepal. Most of the potential investors and the shareholder public themselves are unknown or least understood about risk-return behavior of stock. Most of the Nepalese investors are finding to visit in single security due to lack of information and poor knowledge, market intermediates exploit investors. So, many investors are afraid to invest in stocks. People participation in securities investment and its dynamic trading plays a vital role in overall economic development. For this propose potential investors must be able to analyze risk and return of individual stock and portfolio as well. This will increase their confidence and ultimately increase stock investment and increase the degree of market efficiency, which is essential to spreading economic development of the nation.

Investment, in its simplest form, means employing money to generate more money in future. Investment takes place either two conditions of peoples: one, when current income exceeds current consumption desires, people tends to invest the surplus amount and, next, when they sacrifice current consumptions for future, expecting to get more than sacrificed before. The sacrifice takes place in the present and is certain. But the reward comes later and is an uncertain. Return is the primary motive of investment, but it always entails some degree of risk. Buying common stocks, bonds, deposited money into bank account, buying a piece of land, gold or silver are some example of investment. All these examples involve sacrifice of current rupees in expectation of future return. Hence, they are investment. The main objective of investment is to maximize the wealth of an investor.

Investment can be made on real assets or financial asset. Investment on real assets is known as real investment and investment on financial assets is known as financial investment. Real investment means investment on real assets like land buildings, factory etc. financial investment means on financial asset like share, debentures, warrants and convertibles etc.

The term risk and return is closely associated with investment. Investment simply means sacrificing current funds for future returns, bearing certain risk. The investment may be on fixed assets like land, building or precious metals and collectibles or

something else. But here as a student of finance, I have focused the term investment as sacrificing current fund on financial assets like shares, debenture, warrants, convertibles etc for the long term return.

Investors invest their fund on the securities of certain companies for the long run future returns. The return is defined as the reward for bearing the risk. Return is the most important outcome from an investment. It measures the investor's rate of wealth accumulation i.e. increase or decrease per period. Risk is defined as the occurrence of unfavorable outcomes, which is ever harmful for the business. Risk is inseparable from return. It ever creates uncertainty. Some of the factors that create investment uncertainty such as interest rate risk, purchasing power risk, bull-bear market risk, management risk and so on.

Thus, risk is virtually every decision. Assessing risk and incorporating the same in the final decision is an integral part of financial analysis. The objectives in decision making are not to eliminate or valid risk often it may be neither feasible nor necessary to do so but to properly assets it and determine whether it is worth bearing.

Investor generally does not invest their money in the only on risky asset. The investor should invest their money in portfolio of many assets. It will help to the investor to minimize the risk. Therefore, an investor is concerned with the portfolio risk, which is the sum of the relevant risk of individual assets included in portfolio. The relevant risk of an asset is defined as the portion of its total risk that changes proportionately with market risk. Some stocks are riskier than other and even in years when the overall money into one stock goes down. Therefore, putting all your money into one stock is extremely risky. The single best weapon against risk is diversification.

The concept of financial institution in Nepal was introduced when the first commercial bank, Nepal bank limited was established in 1973. It was established under special banking act 1936 having elementary function of commercial bank. Later in 1955 the central bank Nepal Rastra Bank was established with an objective of

supervising, protecting and directing the function of commercial banking activities. Another commercial bank fully owned by HMG/N, names as Rastriya Banijya Bank got established in 1966. The establishment of joint venture bank gave a new horizon to the financial sector of the country. Since 1984 JV banks were established under company act and their shares were listed in Nepal stock exchange limited (NEPSE).There are 24 commercial banks listed in NEPSE. The focus of the study is that commercial bank whose share listed in NEPSE.

Banking sector is the most critical & dynamic part of economy, which collects unused funds and mobilizes in needed areas. It is the heart of trade, commerce & industry. In Nepalese context, commercial banks have comparatively good performance among the public limited companies. There is majority of banks with in the top ten positions, among the listed companies on the basis of amount traded, number of transaction, market capitalization etc. Many of the banks are established with collaboration of foreign well-known banks. As a public limited company, there are fourteen banks, which are totally owned by Nepalese shardholders. Besides this oldest bank there are eight other joints venture banks, which are listed in NEPSE. Besides these, a government bank, Rastriya Banijya Bank and Nepal Bank Ltd. also plays a vital role in banking sector. In Nepal altogether there are 31 commercial banks.

The nature of bank's fund and its payment depends upon day to day operation. Therefore, its operation of fund rising and investment of funds are of short-term nature. As long-term investments are associated with higher risk, banks are confined to make short-term investment only. The significant of commercial banks is greater in those countries which are at comparatively lower level of economic development. Nepal foreign joint venture banks perform better than Nepalese ones do. Because they have higher management efficiency and they can manage risk properly. Specifically, Nepalese banks have a high degree of internal firm specific risk. At the same time they have to bear more social obligation and government intervention than foreign banks. However, Nepalese bank has high potentialities to increase their performance by changing their risk attitude and by improving their internal management.

Risk is related to future and future is uncertain. But risk is manageable rather than uncertain. Company – specific risk [earning variability] and companies ability to service its debt burden are intimately related to the particular characteristics of the business in which the company operators. Moreover, they are affected by economic condition-apart management's ability to generate satisfactory operating performance.

A systematic, investment process should be followed to win the stock market. Investment process describes how an investor should go about making decision with regard to what marketable to invest in, how extensive the investment should be, and when the investment should be made. A five step procedure for making decision forms the basis of investment process.

a. Set the investment policy
b. Perform security analysis
c. Construct a portfolio
d. Revise the portfolio
e. Evaluate the performance of the portfolio

a) Set the Investment Policy

The initial step in setting an investment policy involves determining the investment objectives and the amount of one's investable wealth. Investment is always related with risks and returns. Making money alone cannot be an appropriate objective. It is appropriate to state that the objective is to make a lot of money by recognizing the possible losses. Therefore, investment objectives should be stated in terms of both risks and returns.

Setting a clear investment policy also involves the identification of the potential categories of financial assets for consideration in the ultimate portfolio. The identification of assets depends upon many things, such as investment objectives, investable wealth, tax considerations etc.

b) Perform Security Analysis

The second stage of an investment process involves the analysis of securities, which are identified in the previous stage of the process. The main purpose of analyzing securities is to find out the miss-priced securities.

Many approaches can be used to analyze the securities. This approach in a broad sense can be classified into two types.

a. Technical analysis
b. Fundamental analysis.

c) Construct a Portfolio

Third step of investment process is construction of portfolio. At this stage we identify assets in which to invest and what proportion of the investor's wealth to put in each one. While constructing a portfolio, the selectivity, timing and diversification need to be addressed by investor.

d) Revise the Portfolio

Portfolio revision means repeating the previous three steps of the process. Over the period of time, the objectives of the investor may change and the current portfolio may no longer be optimal.

- The investor can sell some unattractive securities and introduce attractive ones to form a new optimal portfolio.
- Some securities that are initially unattractive may turn out to be attractive later and vice versa.

e) Evaluate the Performance of the Portfolio

The last step of the investment process is to evaluate the investment performance. The performance should be evaluated not only in terms of the returns but also the risks experienced. Evaluate the performance, appropriate measures and standard are needed.

1.2 Significance of the Study

This study will give information about Nepalese capital market by analyzing risk and return and will definitely contribute to increase the analytical power of the investors in capital market. The study will be beneficial for all the persons who are directly or indirectly related to the Nepalese capital market.

This research has attempted to analyze the market shares of sample companies with references to their financial indicators and risk in common stock investment, which may probably provide real pictures of samples companies, to both the outstanding and potential investors in order to take proper investment decision. Similarly, this piece of task may work as guide for future research and concerned persons.

Further this research will attempt to clarify concrete picture of different aspects of risk and return which will be beneficial to the investor for taking right investment decision. The study will be maximum significant for exploring and increasing stock investment. It will also provide little contribution to Nepalese stock market development.

This study is not only to fulfill MBS level courage of T.U., but also to provide some knowledge about the Nepalese stock market along with providing ideas to minimize the risk on stock investment.

From the viewpoint of investors, the analysis of risk and return is significant management decisions which influence the shareholder risk and return. Consequently, the risk and return analysis influences the market price of stock, by making it at an appropriate level. Apart from this study will be a matter of interest for academicians, students, researchers, teachers or persons, practicing in the field of finance.

1.3 Statement of the Problem

Investors should make rational investment decision. For this purpose, knowledge for analysis of common stock is essential. Investor's attitude and perceptions are also considerable for rational investment decision. Many investors are manipulated and

exploited by the financial institution and other market intermediaries since they are unknown about norms of security market. Not only general public but also the university graduates and post graduates cannot analyze risk and return while making stock investment decision.

In the context of Nepal, investors are also facing the problems of lack of the institutions to provide adequate information about the investment options.

After the emergence of NEPSE in 1993 AD, these type of problem some how has been solved, but another problem to the Nepalese people is they feel more risk in stock investment than as its real risk, it keeps them in dilemma, whether they should invest in stock or not and this all conditions makes them to not utilize their funds as a result investors are not benefited nor the national economy as well.

Further, theory says that the stock price in market is guided by the intrinsic value which is calculated by aid of company's result of financial performance such as dividend, required rate of return and growth. In the efficient market condition stock price is equal to the intrinsic value since the buyer and the seller are fully aware of the facts and figures of the company. Therefore one can say that market price and financial performance are correlated but condition here is totally different from that. Courage and faith are intermediate factor to invest in common stock because there are several questions, which may be arising tin the mind of the individual investors at the time of the investment.

More specifically the research problems are:

- How can one make higher return through lower risk?
- How do they know about the magnitude of risk?
- How can investor diversify the risk?
- What are the criteria for evaluation that the common stock they are holding will give them favorable return?

1.4 Objectives of the Study

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

- To analyze the common stock in terms of risk and return.
- To identify whether stock of selected commercial banks are overpriced, under priced and equilibrium price at the present economic dilemma.
- To identified optimum portfolio of the banks.
- To analyze the diversifiable and undiversifiable risk of the banks.

1.5 Limitation of the Study

As every research has its own limitation, the study is not free from it. Some limitations of this study are as follows:

- The respective banks published annual report data and data published in NEPSE web page are taken into accounts as the basis sources of data.
- The study only focus on the analysis of risk and return associated with common stock investment of selected commercial banks.
- The finding on the study is based on the performance of co listed banks for the period of five years starting from fiscal year 2005/06-2009/10.
- Only secondary data is used analysis.

1.6 Organization of the Study

This study is organized into five chapters:

Chapter - I: The first chapter is introduction chapter. It consists of general background, statement of problems, objective of the study, significance of the study, focus of study, limitation of the study and organization of the study.

Chapter - II: The second chapter deals with the received of literature, which consists of conceptual framework and review of relevant studies.

Chapter - III: This chapter is concerned with the research methodology used in this study. It consists of research design, sources of data, population and sample and method of analysis.

Chapter - IV: This chapter contains presentation and analysis of data.

Chapter - V: The fifth chapter is associated with the summary, conclusion and recommendations.

The bibliography and appendix have in corporate at the end of study.

CHAPTER – II

REVIEW OF LITERATURE

This part includes the Review of previous studies, articles and conceptual framework for the related studies. More analysis is not sufficient to present real framework of the study. So review of related materials should be deal with to give the research a clear vision, past study and knowledge provides foundation to the present day.

Review of literature includes the following topics:

2.1 Conceptual review

2.2 Review from Journals

2.3 Review of Other Independence Studies in Nepal

2.4 Review from thesis

2.1 Conceptual Review

Various books relating to theoretical aspect of risk and return are taken into consideration.

2.1.1 Investment

In general sense, investment means to pay out money to get more but in the broadest sense, investment a present commitment for the future benefits. While the commitment takes place with certainty, the future benefits are shrouded in uncertainty. The uncertainty creates risk to investors and they desire to minimize return by minimizing such risk.

Therefore, taking decision about proper investment is crucial to the investor and it requires a specific investment decision process, analysis of securities, identification of overpriced, under priced securities, making appropriate investment strategies as well as construction of efficient portfolio.

Investment is concerned with the management of an investor's wealth, which are the sum of current income and the present value of all future income. The term investment is conceptualized as income, saving or other collected fund. It covers wide range of activities. T is commonly known fact that an investment is possible only when there are adequate saving. Therefore both saving and investment are interrelated.

Investment is an exchange of financial claim stocks and bonds etc. investment if the employment of funds with the rim of achieving additional income or growth in value it involves the commitment of resources that have been saved or pot away from current consumption in the hope that some benefit will occur in future. Investment involves long term commitment and waiting for a reward.

"Investment is a commitment of funds made in the expectation of some positive rate or return. If the investment is property undertaken the return will be comminute with the risk the investor assumes". Return risk and time are the elements of investment (Fisher and Jordan, 1995:104).

2.1.2 Common Stock

"The study is focused on the common stock investment that's why light is thrown on it. It is sources of long term financing and an ownership security. Common stock certificates are legal documents that evidence ownership or equality in a company that is organized as a corporation, and they are also marketable financial instruments.

Common stock is recipient of the residual income of the corporation. Through the right to vote, holders of common stock have legal control of the corporation. An element of high risk is involved with common stock investment due to its low priority of claims at liquidation. When investors buy common stock they receive certificate of ownership as a proof to their being part of the company. The certificate states the number of shares purchased and their value per share" (Bhalla, 1997:196).

"Common stock holders of a corporation are its residual owners, their claim to income and asset comes after creditors and preference share holders have been paid in full. As a result, a stockholders return on investment is less certain than the return to lender or to preference stock holder. On the other hand, the share of the common stock can be authorized either with or without per value. The par value of the stock is merely a stated figure in the corporate character and is of little economic significance. A company should not issue stock at a price less than par value because stock holders who bought stock for less than par value would be liable to creditors for the difference between the below pre price they paid and the par value". (Van Horne, 1997:98).

But in Nepal, as per the provision of Nepal Company Act 2057, no common stocks are allowed to issue without par value. The par value must be either Rs. 10 or Rs. 100. Common stock has one important investment characteristics and is important speculative characteristics. Their investment value and average market price tend to increase regularly but persistently over the decreases as their net worth builds through the reinvestment of undistributed earning. However, most of the time common stocks are subject to irrational and excessive price fluctuation in both directions, as most people to speculate or gamble i.e. give way to hope fear and greed.

2.1.3 The Return of Common Stock

The concept of return has different meaning to different investors. Some investors seek near term cash flows and five less value to more distant return. Such an investor might purchase the stock of other from that pays a large cash dividend.

Return better known or reward from an investment includes both current income and capital gain or loss that arises by the increase or decrease of the security price. Return is the income received on an investment plus any change in market price. Usually expressed as a percent of beginning price of the investment, the overall rate of return can be decomposed into two parts as capital appreciation and dividend. Capital appreciation is the difference between ending value and beginning value of an investment. Return is defined as the dividend yield plus the gain or loss. The

relationship between different levels of return on their relative frequencies is called a probability distribution. We could formulate a probability return over the previous period but we know that history never repeats itself exactly. Hence after analyzing relative frequencies of historical data plus the analysis for the out look for the economy and the outlook for the industry, the outlook for the firm in its industry and other factors.

For investors, return is considered as the main attraction to invest in a risky security as a stock (equity) accepting a varying degree of risk tolerance. "The return from holding an investment over some period says a year is simply and cash payments received due to ownership plus the change in market price dividend by the beginning price. Thus the return comes from source, income and price appreciation.

For common stock, we can define, one period (single period) return as:

$$\text{HPR or Simple 'R'} = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$$

Where,

R = Annual rate of return

P_t = Price of a stock at time t

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

D_t = Cash dividend received at time

Above formula can be used to determine both actual one period return (when based on historical figure) as well as expected one period return (when based on expected dividends and prices). The return in the parenthesis is the number of the above equation represents the capital gain or loss during the period.

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

Annualized rate or return over several periods can be calculated in two ways. The first one is simply to take the arithmetic average of the annual holding period returns over a given period and the second one, which also takes account the compounding effects of cash receipts over different time intervals is the geometric mean rate or return.

The simple arithmetic means:

$$\overline{HPR} = \sum_{tX1}^{n} \frac{HPRt}{n}$$

The Geometric mean

$$\overline{HPR}\, g = \sum_{tX1}^{n} (1 \Gamma HPRt)^{1/2}\ Z1$$

Where HPR_t is the individual period return, is the number of period and $\sum$ represents the product (or the result of multiplication) (Cheney and Moses, 1996:93).

2.1.4 The Risk on Common Stock

2.1.4.1 Risk

In the basic sense, risk can be defined as the chance of loss. Assets having greater chances of loss are viewed as more risky than those with lesser chances of loss. More formally, the term risk is used interchangeably with uncertainty to refer to the variability of expected returns associated with a given asset.

Risk is a complicated subject and needs to be properly analyzed. The relationship between risk and return is described by investor perception about risk and their demand for compensation. Generally, Investors are mostly interested in the project yielding higher returns in less risk. Therefore, it is the investors required risk premium that establishes a link between risk and return. In a market dominated by rational investor higher risk will command by rational investor's higher risk will be commanded by rational premium and the trade-off between the two assumed linear relationships between risk and risk premium. "The observe difference in both the levels and variability of the rates of return across. Securities are indicative of the

underlying risk and return relation in the market" (Loric, Dodd and Kimpton, 1985:87).

Risk defines most generally is the probability of the occurrence of unfavorable outcomes. But risk had different meaning in the different context in our context; two measure developments from the probability distribution have been used as initial measure of return and risk. There are the mean and the standard deviation of the probability distribution (Weston and Brigham, 1982:557).

There are many ways to measure risk. The following three models are commonly used (Van Horne, 1998:205).

Beta Coefficient

This is mathematical value that measures the risk of one asset in terms of its effects on the risk of a group of assets, as would be the concern for an investor holding stocks and bonds. It is derived mathematically so that high beta indicates a high level of risk whereas a low beta represents a low level of risk. Mathematically, "β_j" denotes it.

Standard Deviation

This is a measurement of the dispersion of forecast returns when such returns approximate a normal probability distribution. It is a statistical concept and is widely used to measure risk from holding a single asset. The standard deviation is derives so that a high standard deviation represents a large dispersion of return and is a high risk and vice versa. Mathematically, it is denoted by σ_j

Subjected Estimates

A subjective risk measure occurs when qualitative rather than quantitative estimates are used to measure dispersion. As an example: an analyst may estimate that a proposal offers a "low" level of risk. This means that, in the analyst's view – the dispersion of return will not be very wide. Similarly, a "high" risk level will accompany a project whose forecast return may very a great deal.

With the overall definition of risk as dispersion of return, there are two components of risk may be identified.

1. Business Risk

Business risk may be defined as the chance that the firm will not have ability to complete successfully with the assets that it purchases. For an example: the firm may acquire a machine that may not operate properly, that may not produce stable products or that may face other operating or market difficulties that causes losses. Any operational problems are grouped as business risk.

2. Financial Risk

This is the chance that an investment will not generate sufficient cash flows either to cover interest payment on money borrowed to finance it or principal repayment on debt or to provide profits to the firm.

Sources of Risk

Every investment involves uncertainty that contribute to investment risk are as follows: (Clark, 1997:308).

Interest Rate Risk

Interest rate risk is defined as the potential variability of return caused by changes in the market interest rates. In more general terms, if market interest rate rise, then investment values and market prices will fall, and vice versa. This interest rate risk affects the prices of bonds, stocks, real estate gold, puts, calls, futures contracts and other investment a swell.

Purchasing Power Risk

Purchasing power risk is the variability of return and investor suffers because of inflation. Economists measure the rate of inflation by using a price index. The consumer price index (CPI) is a popular price index in the United States. The percentage change in the CPI is widely followed measure, of the rate of inflation.

Bull-Bear Market Risk

The various market forces make securities price upward and downward. The upward trend of market price (Bull Market) and downward trend of market price (Bear Market) create a long lasting source of investment at risk.

Management Risk

Management risk is defined as the variability of return caused by decision made by a firm's management and board of directors. Though many top executives earn princely salaries, occupy luxurious offices, and wield enormous power within their organizations, they are mortal and capable of making mistake or a poor decision. Furthermore, errors made by business managers can harm those who have invested in their firms. Forecasting management errors is difficult work that may not be worth the effort and, as a result, imparts needlessly skeptical outlook. Agency theory provides investors with an opportunity to replace skepticism with the informed insight as they endeavor to analyze subjective management risk.

Default Risk

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

Liquidity Risk

Liquidity risk is associated with uncertainty created by the inability to sell the investment quickly or cash. The return variability will increase if price discount and sales commission are to be given in order to liquidate assets in time. The less the liquidity, the greater will be the risk. So, two factors price and time are associated with liquidity.

Call – Ability Risk

Some securities are issued with a call provision i.e. a company may call back the securities issued before their maturity. The call ability risk is portion of a securities total variability of return that derives from the possibility that the issue may be called.

Convertibility Risk

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

Political Risk

Political risk is the portion of assets' total variability of return caused by changes in the political environment (domestic and international as well as internal changes of the company). The current Nepalese political environment has made a significant impact on the investment to increase losses.

Industry Risk

An industry may be viewed as a group of companies that complete with each other to market a homogeneous product. Industry risk is that portion of an investment total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and/or quotas on the products produced by an industry related taxes industry wide labour union problems environmental restriction, raw materials availability and similar factors interact and affect all the firm sin an industry simultaneously. As a result of these commonalties, the prices of the securities issued by competing firms tend to rise and fall together.

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

2.1.4.2 The Risk on Common Stock

Risk, in simple word, is an uncertainty. Risk and uncertainties are the facts of life so to the common stockholders. Technically, their meanings are different. Risk, simply in investment, means a chance of happening some unfavorable event or danger of losing some value. Risk suggests that a decision maker known the possible consequences of a decision and their relative livelihoods at the times he makes decision. In other, uncertainty is simple a lack of definite outcomes, its anything that could happen-any unknown event, which may be favorable, or unfavorable on the other hand. Uncertainty involves a situation about which the likelihood of the possible outcomes is not known. The trouble arises from the fact that despite different interpretation of uncertainty and risk, people often use them interchangeably. Although it is quit clear what precisely these two terms mean, authorities in the field of finance do agree that the risk is the product of uncertainty. If we interpret certainty as future outcomes, which is 100% sure to happen, uncertainty is then just the opposite of certainty that refers to all possible future outcomes none of which is know for sure to happen.

Risk, on the other hand, is the product of all potential outcomes expressed with probability associated with each of them and it is measure in terms of the degree of variability in the probability distribution of such outcomes.

"The practice is to translate the uncertainty into a mathematical value which represents the uncertainty into a mathematical value which represents the best estimate of all uncertain value. But risk is treated differently. Although risk arises from uncertainty, its magnitude depends upon the degree of variability in uncertainty cash flows, and it is measure in term of standard deviation. In project analysis, the project risk indicates the probability of return is being less than exceed value-higher the probability of such loss or less return, higher the project risk" (Pradhan, 1992:244).

Assets having greater chances of loss are viewed as move risky than those with lesser chances of loss. More systematically, the term risk is used interchangeably with certainty to refer to the variability of return associate with a given asset. For example,

a government bond that guarantees its holder $100 interest after 30 days has no risk, since there is no variability associated with return. In equivalent investment in a firm's common stock that may earn over the same period anywhere from $0 to $100 is very risky due to high variability of return. The more certain returns from an asset, the less variability and therefore the less risk.

2.1.5 Relationship between Risk and Return

The expected return from any investment proposal will be linked in fundamental relationship to the degree of risk in the proposal. In order to be acceptable a higher risk proposal must offer a higher forecast return than lower risk proposal (Hampton, 1996:341).

"The observe difference in both the levels and variability of the rate of return across securities are indicative of the underlying risk and relation in the market" (Loric, Dodd and Kempton, 1985:1029).

Generally, there is a positive relationship between rate or return and risk. It means an investor can usually attain more return by selecting dominant assets that involve more risk. While it is not always true that a riskier asset will pay a higher average rate of return, it is usually. The reason is that investors are risk averse. As a result, high-risk assets must offer investors' high return to induce them to make the riskier investment normally; investors are likely to prefer more return and less risk. It means investors will not choose an investment that guarantee less return when investments promising higher returns in the same level of risk class are readily available.

2.1.6 Portfolio

Investors rarely place their entire wealth into a single asset or investment rather they construct a portfolio or a group of investments. Therefore, it is needed to extend analysis of risk and return to include portfolio. A combination of two or more securities or assets is portfolio. Portfolio management is related to the efficient portfolio investments in financial assets. It has following two types of objective.

Primary Objective

- To minimize risk
- To maximize return.

Secondary objectives:

- Regular return
- Safety of investment
- Stable income
- Tax benefit
- Appreciation of capital

The expected return on the portfolio is simply a weighted average of the expected returns of the individual securities that they are included in the portfolio. The weighted are equal securities (the weight must sum to 100% or 1). The general formula for expected return of a portfolio (R_p) is as follows.

$$\overline{R_p} \; X \sum_{jXl}^{n} W_j \overline{R_j}$$

Where,

$\overline{R_p}$ = Expected return of a portfolio

$\overline{R_j}$ = Expected return for security j

W_j = Proportion of total funds invested in security j

n = Total no. of different securities in the portfolio

While the portfolio expected return is a straight forward weighted average of returns on the individual security where as portfolio standard deviations would be to ignore the relationship or correlation between the returns of two securities. "The Standard deviation of probability distribution of possible portfolio return $\pm_p$ is

$$\sigma_p \; X \sum_{jXl \; kXl}^{n \quad n} W_j . W_k . Cov_{j.k}$$

Where,

n = Total no. of different securities in the portfolio.

W_j = Proportion of total funds invested in security j.

W_k = Proportion of total funds invested in security k.

$Cov_{j.k}$ = Covariance between the possible return of securities j and k.

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

$$Cov_{jk} \; X \, r_{jk} \, \sigma_i \, \sigma_k$$

Where,

r_{jk} = Correlation coefficient between possible return for security j and k

σ_j = S.D. of the security j.

σ_k = S.D. of the security k.

When j = k, the correlation coefficient is 1 as variance movement correlated perfectly with itself.

"The correlation coefficient which is significant in portfolio construction is standardized statistical measured of the linear relationship between two variables. Its range from -1 (perfect negative correlation) to +1 (perfect positive correlation). Lesser the correlation, higher the reduction in portfolio risks" (Van Horne and Wachowicz, 1995: 97).

The positive correlation coefficient shows that the return from the securities generally moves in the some direction. While negative correlation coefficient shows that they move to opposite direction and zero correlation coefficient shows that the returns from two securities are uncorrelated. They show no tendency to vary together in either a positive or negative in linear function.

The Single Index Model

"The Markowitz Model was theoretically elegant and conceptually sound. However, its serious limitation was that it related each security to every other security in the portfolio, demanding the sophistication and volume of work well beyond the capacity of all but a few analysts. Consequently, its application remained severely limited until William F. Sharpe published a model simplifying the mathematical calculations required by the Markowitz Model.

Sharpe assumed that, for the sake of simplicity, the return on security could be regarded as being linearly related to a single index like the market index. Theoretically, the market index should consist of all the securities trading on the market. However, a popular average can be treated as a surrogate foe market index. Acceptance of the idea of a market index, Sharpe argued, would obviate the need for calculating thousands of covariances between individual securities, because any movements in securities could be attributed to movements in single underlying factor being measured by the market index. The simplification of the Markowitz Model has come to be known as the Market Model or Single- Index-Model (SIM).

Characteristic Lines

An old and rather quaint stock market aphorism asserts that *when they raid the brothel they take all girls*. The reference is to a so-called bear raid, in which bears (pessimists) raid the market, driving prices down. Completing the translation; the statement asserts that when the market falls dramatically, all stocks go down together

This sort of view is subject to criticism since market is rarely divided into bears (pessimists) and bulls (optimists). Nevertheless, there is an element of truth in the assertion. In major market moves, most securities move in the same direction, although at different rates. An analyst's view of the relationship between returns on individual securities and returns on the market portfolio can be expressed by using a *characteristic line*. Figure-1 shows an example. The vertical axis plots the excess

return on the security in question. This is the difference between the holding period-period return on the security and the riskless rate of interest for the period. In symbols:

Excess return on security i= $\tilde{R}_i$ -T

Where:

$\tilde{R}_i$ = period –holding return on security i.

T = risk less rate of interest

For clarity, variables whose actual value is uncertain before the fact(ex ante) are indicated by tilder (i.e. squiggly lines such as~).

The horizontal axis in Figure 1plots its excess return on the market portfolio; in symbol:

Excess return on market portfolio = $\tilde{R}_m$ -T

Where:

$\tilde{R}_m$ = period –holding return on security i.

T = risk less rate of interest

The market portfolio includes all securities, each in proportion to market value outstanding. The characteristic line, summarizing the relationship between the two excess returns, can be written as follows:

$\tilde{R}_m$ -T = $\alpha_i+\beta_{im}(\tilde{R}_m$ -T)+ $\tilde{r}_i$

The value of alpha(α_i) and beta (β_{im}) indicate the vertical intercept and slope, respectively, of the line, as shown in figure 1.The value of α_i can be thought of as an excess return on the security that goes with an excess return of zero of the market portfolio, where as β_{im} is the ratio of a change in the security's excess return is also likely to1% larger than expected.

Figure 2.1: A security Characteristic Line

A beta of 2.0 indicates that if the market portfolio's excess return is 1% larger than expected, the best guess is that the security's excess return is likely to be 2% larger than expected. A beta of 0.5 indicates that if the market portfolio's return is 1% larger than expected, the best guess is that the security's excess return is likely to be ½ of 1%larger than expected. And so on.

Securities with beta values greater than one are termed aggressive: in up markets their prices tend to rise at a faster rate than the average security. On the other hand, they tend to fall at a fast faster rate in down markets. Securities with beta values less than one are termed defensive: in up markets their prices tend to rise at a slower rate than the average security. On the other hand, they tend to fall at a slower rate in down markets

The nature of the residual component of the unsystematic return, known as the error term, $\tilde{r}_i$, represent the uncertain portion of the non-market of the excess return on security i. This can be demonstrated by referring the characteristic line into two parts, as follows:

$\tilde{R}_i$ -T	=	$[\beta_{im}(\tilde{R}_m$ -T)]	+	$[\alpha_i + \tilde{r}_i]$
		market (systematic) component of excess return		non-market (unsystematic) component of excess return

The term in the first set of brackets is the market related portion of excess return; the term in the second set is the non-market portion. By convention, α_i represents the expected non-market excess return, while $\tilde{r}_i$ represents the deviations from this expectation. Before the fact, the best guess is that $\tilde{r}_i$ will be zero.

Given these figures, the value of β_{im} for the security can be easily found. The formula is:

$$\beta_{im} = \frac{Cov(\tilde{R}_i\ ZT, \tilde{R}_m\ ZT)}{Var(\tilde{R}_m\ ZT)}$$

Where:

Cov($\tilde{R}_i$ -T, $\tilde{R}_m$ -T) = The covariance between the excess return on security I and the excess return on the market portfolio

Var($\tilde{R}_m$ -T) = the variance of the excess return on the market portfolio.

The value of α_i is the expected value of the non-market component of a security's excess return. The expected value of the market component will equal the security's beta times the expected return on the market portfolio. The value of alpha is thus the difference between the security's total expected excess return and this amount. In symbols:

α_i = Exp.($\tilde{R}_i$ -T) - β_{im}Exp.($\tilde{R}_m$ -T)

where,

Exp.($\tilde{R}_i$ -T) = the expected excess return on security i

Exp.($\tilde{R}_m$ -T)= the expected excess return on market portfolio." (V.K.Bhlla: Investment Management, S.Chanda& Company Ltd., 2001)

2.1.7 Systematic Risk and Unsystematic Risk

Systematic and unsystematic risks are the terms frequently used in the portfolio context. Combining securities that are not perfect positively correlated helps to reduce the risk of a portfolio to some extent.

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Systematic risk has its source factors the affect all the marketable assets and this cannot be diversified way. Systematic risk is due to the risk factor that affects the overall market such as changes in national economy, tax reform by the government or changes in the world energy situation.

Unsystematic risk is unique to a particular company or industry. It is independent of economic, political and other factor that affect all securities in systematic manner. A wild cat risk may affect only one company a new competitor may begin to produce essentially the same product or a technological break through can make an existing product absolute. "For most stocks, unsystematic risk accounts for between 60 to 70 percent of stocks total risk or standard deviation (Van Horne and Wachowicz, 1995:91).

The relationship among systematic, unsystematic and total risk are shown below.

Total risk (σ_j) = Systematic Risk + Unsystematic Risk

Systematic Risk and unsystematic Risk can be written as

Systematic Risk(SR)

$$SR = \frac{Cov_{j,m}}{\sigma_m}$$

Where,

SR = Systematic Risk

$Cov_{j,m}$ = Covariace of Stock j and Market Return

σ_m = Standard Deviation of Market

Unsystematic Risk (USR)

$$USR = \sigma_j - \frac{Cov_{j,m}}{\sigma_m}$$

σ_j = Standard Deviation of Stock j

$$\text{Proportion of SR} = \frac{SR}{TR}$$

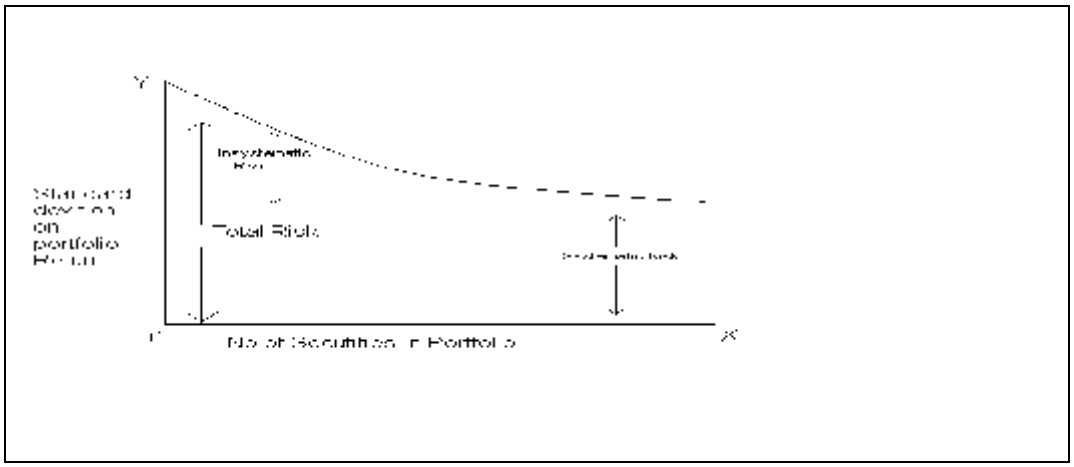
Where,

TR = Total Risk

Proportion of USR= 1 –Proportion of SR

Figure 2.2

Portion of Risk on a Portfolio



Where, systematic risk = σ_j Pjm and unsystematic risk = σ_j (1-Pjm). Here Pjm is the Correlation coefficient between the return of given stock (j)k and the return on market portfolio.

However by diversification, unsystematic risk can be reduced and ever eliminated if diversification is efficient. Therefore, not all the risk involved in holding a stock is relevant since part of their risk can be diversified away. The important risk of stocks is its unavoidable systematic risk. Investor will be compensated for bearing this systematic risk. They should not however expect the market to provide may extra compensation for bearing avoidable risk. It is the large that lies behind Capital Assets Pricing Model (CAPM).

2.1.8 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model provides us a means by which to estimate required rate of return on a security. This models was developed by William F. Sharpe and John Linter in the 1960's and it has had important implications for finance ever since. And on the basis of price and divided data, expected return can be calculated with comparison of these two returns investors can analyzed whether the stock is under priced or overpriced.

Based on the behavior of the risk adverse investors, there is implied on equilibrium relationship between risk and expected return to provide a return on common stock with its unavoidable risk. This is simply the risk that cannot be avoided by diversification. The great unavoidable risk of security, the greater the return that investor will expected from the security (Van Horne, 1997:64).

"CAPM is the model that describes the relationship between risk and expected return. In this model, a security's expected (required) return is the risk free rate plus a premium based on the systematic risk of the security. This model is expressed as:

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

Where,

$E(R_j)$ = Required rate of return for stocks j

R_f = Risk free rate

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

β_j = An index of systematic risk of stock j (beta coefficient)

"Beta measures the sensitivity of a stock's returns to change in the returns on the market portfolio. The beta of a portfolio is simply a weighted average of the individual stock betas in the portfolio" (Van Horne, 1997:100).

If beta is one (i.e. β=1) then the required return is simply the average return for all situation, that is the return on market portfolio, otherwise, the higher the beta, higher the risk premium and the total required return. However, a relatively high beta does not guarantee a relatively high return. The actual return depends partly on the behavior of the market, which acts as a prissy for general economic factor.

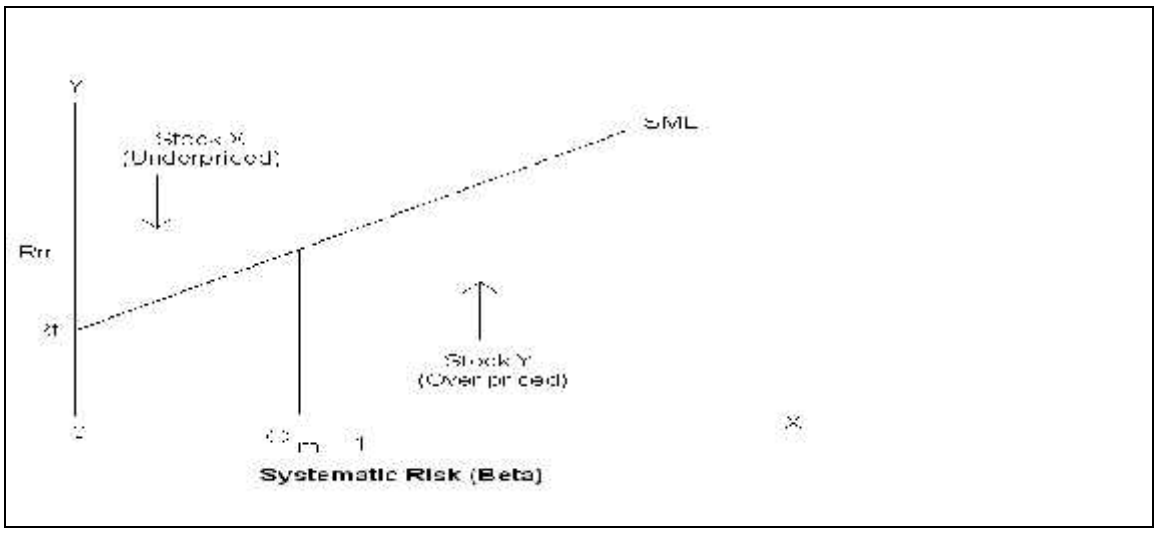
The CAPM states that the expected risk premium on each investment is proportion to its beta. This means that each investment should lie on the sloping security market line connecting treasury bills and market portfolio. CAPM is the predominant model used

for estimating equity risk and return. Comparison between the expected rate of return and required rate of return indicates whether the stock is under priced or overpriced. And when these two return are equal then it is said table market equilibrium i.e. all the stocks lie on the Security Market Line (SML).

SML is the graphical representation of the CAPM, which shows the relationship between risk and required rate of return. The SML clearly shows that returns are the increasing function, in fact at linearly increasing function of risk. Further, it is only market risk that affects return. The investor receives no added return for bearing the diversifiable risk. If stocks are under priced it lies above the SML and if they are overpriced then it lies below the SML. The following diagram shown the SML with over priced and the under priced stocks.

Figure 2.3

The Security Market Line (SML)



"Above figure clarifies that stock X is under priced relative to the security market price while stock Y is over priced. As a result tock X is expected to provide a rate of return greater than that required based on its systematic risk. In contact stock Y is expected to provide a lower return than that required to compensate for its systematic risk. Investors seeing the opportunity for the superior return by investing in stock X will rush.

This situation would drive the price up and expected return comes down. It would continue until the market price was seen that the expected return would row lies on the SML. In the case of stock Y, investors holding this stock will start to sell it, recognizing that they could obtain a higher return for some amount of systematic risk with other stocks. This selling pressure would drive market price down and its expected return goes up until the expected return matches on the SML. When the expected return for these two stocks returns to SML, market equilibrium will again prevail (Van Horne and Wachowicz, 1995: 107).

Under the CAPM, each investors hold the market portfolio and is concerned with its standard deviation because this will influence the slope of the SML and hence the magnitude of his/her investment in the market portfolio.

"The CAPM is sometimes used to estimate the required rate of return for my form with publicly traded stock. The CAPM is based on the promise that the only important risk of firms is systematic risk, or the risk that returns form expose to general stock market movements. The CAPM is not concerned with so-called unsystematic risk, which is specific to an individual firm, because investors can avoid that type of risk by holding diversify portfolio (Madura, 2001: 118).

Investor appears to be concerned principally with risk that they cannot eliminated by diversification. If this is not so, we find that stock price increases. Whenever two companies merge to spread their risk and we should find that investment companies which invest in the share of other firm are more highly valued that than the shares they hold. But we do not observe either phenomenon. Mergers under taken just to spread risk don't increase stock prices and investment companies are no more highly valued than the stocks held. The CAPM model captures these ideas in simply way. That's way many financial mangers find it is the most convenient for coming to decision with slippery motion of risk. And it is why economist often uses the CAPM to demonstrate important ideas in finance even when there are other ways to prove thee ideas.

2.2 Review from Journals

In the field of finance in Nepal it is very difficult to get advanced and research based journal. There are very limited numbers of journals available in the subject of management and it is also hard to find any article in the subject matter of finance. Almost no articles about the risk and return analysis on common stock investment are found. Hence some foreign well known recently published journals of finance has been reviewed here. However, it helps to build the conceptual framework on this topic.

An article entitled "*Expected Return, Realized Returns and Assets Pricing Tests*" by Edwin J. Elton as journal of finance in the year 1999 is relevant to this study. In this proper he points out the fundamental issues in finance like that what the factors are that affect expected return on assets, the sensitivity of expected return to those factors, and the reward for bearing this sensitivity. There is along history of testing in this area and it is clearly one of the most investigated assess in finance.

Almost all of the testing being aware of using realized returns as a process for expected returns. The sue of a average realized relies on a belief that information surprises tent to out over the period of a study and realized returns are therefore an unbiased estimate of expected returns. However, he believes that there is ample evidence that there is ample evidence that this belief is misplaced. There are period's longer than 10 years during which stock market realized returns are one average less than the risk free rate (1973 to 1984). There are periods longer than 50 years in which risk long term bonds on average under perform the risk free rate (1927 to 1981). Having a risky asset with expected return above the risk less rate is an extremely weak condition for realized returns to be and appropriate process for expected return, and 11 and 50 years is an awful longtime for such a weak condition not to be satisfied. In the recent past, the United States has had stock market returns of higher than 30% per year while Asian Markets have had negative returns (Elton, 1999:26).

The journal of finance, published by American Finance Association for many decades is taken into account. In its volume of August 1999, an article "*Local Return factors and Turnover in Emerging Stock Markets*" by K Greet Rouwenhast. This paper examines the sources of return variation in emerging stock markets. Compared to the developed markets the correlation between most emerging market and stock market has been historically low and until recently many emerging country restricted investment by foreign investor.

He attempts two set of question to answer. The first set of three questions concern the existence of expected return premiums. (i) Do the factors that explain expected return difference in developed equity markets also describe the cross section or expected

returns of emerging market firms?(ii) Are the returns factors in Emerging markets primarily local or they have global components as well? (iii) How does the emerging market evidence contribute to the international evidence form developed markets that similar return factors are present in markets around the world? The set of questions of the paper include, (iv) is there a cross sectional relation between liquidity and average, returns in emerging markets? Are the return factors in emerging markets cross sectional correlated with liquidity?

Total returns are calculated in the sum of the dividend return and price appreciation using prices scaled by a capital adjustment factor, which the IFC computers to correct for price effects associated with stock splits, stock dividends and rights issues. Many emerging market have firms with multiple share assess are treated as a single value weighted portfolio of the outstanding equity securities (Rouwenhorst, 1999:1442-1443).

In this proper Roowenhorst has been made detail analysis of the data and he interprets the result in each section. Lastly, he has concluded his findings as "The first conclusion is that the return factors in emerging markets are qualitatively similar to those in developed markets: Small stocks out perform growth stocks and emerging market stocks exhibit momentums. There is no evidence that local market betas are associated with average returns. The low correlation between the country return factors suggest that the premium have a strong local character. Furthermore, global exposure cannot explain the average factor returns of merging market. This is little evidence that the correlation between the local factor portfolios have increase, which suggests that the factors responsible for the increase of emerging market country correlation are separated from those drives the difference between expected return within these markets. A Bayesian analysis of Premiums in developed and emerging markets shows that unless one has strong prior belief to the contrary. The empirical evidence favors the hypotheses that size, momentum and values strategies are compensated for in expected returns around the world. Finally, the paper documents the relationship between expected returns and share turnover and examines the turnover characteristics of the local factors portfolios. There is no evidence of relation

between expected returns and turnover, in emerging markets. However, beta, size momentum and value are positively cross sectionally correlated with turnover in emerging markets. This suggests that return premium do not simply reflect a compensation for liquidity (Rouwenhorst, 1999:1462).

After reviewing, an article entitled American Association of Individual Investors, Investing basis reveals importance to understand how personal circumstance affect investment decision. (If these factors make no difference we could simply publish one suggested portfolio for everyone to follow). Investment profile is the beginning of the asset allocation process, which consists of dividing portfolio among the major asset categories of stocks, bonds and cash. The asset allocation decision will have a far more effect on portfolio return.

Make allocation decision with the major categories. For instance stock portfolio can be divided among large capitalization stock, small capitalization stocks and international stocks. Once these decisions are reached, you will be ready to make selection among the various investment options. Lastly, once you have set up your investment portfolio you must monitor it, making changes when appropriate.

Every investor wants the highest assured return possible. Both as we have seen, returns are not certain and different investors have varying degree of uncertainty that they are willing accept.

In order to reduce overall risk, it is the best to follow diversification of assets that are not related. "The technical term for this is not putting all your eggs in one basket". In that way if you trip, you wont break all the eggs. The creation of a portfolio by combining two assets that behave exactly the some way cannot reduce the portfolio's overall risk below the risk of the least risky asset.

Fluctuations expose you to wide uncertainty in your overall returns and even to the risk of permanent loss of principal. CAPM is an effective model in finance but it is not far off from argument. It has also got it good points as well as bad points.

It tells us where to invest, how to invest and what discount rate to use for project cash flows. Not only that, it is a disarmingly simple model. The expected return of a security depends upon a simple statistics. The relationship between risk and return is linear. Calculation of portfolio risk trivial at the sometime, the CAPM is revolutionary. It tells us that the variance of a project is not a factor in determining the appropriate risk adjusted rate. It turns financial research from roll-up-your sleeves fundamental analysis into a statistical problem. In short, the CAPM turned Wall Street on its head.

2.3 Review of Other Independence Studies in Nepal

Very few independent studies can be found in the topics of finance. Specifically, it is rare in the case of this research topic, risk and return analysis. However, the available independent studies which are related to the Nepalese stock market and about shareholders democracy are reviewed here.

The study carried out by professor Dr. Manohar Krishna Shrestha (1995) in the title of "*Shareholder's Democracy and Annual General meeting feedback*" is reviewed here Dr. Shrestha prefers to consider this book as assemblage of opinions which he had express in different occasions of various annual general meeting where he has critically analyzed the situation of common stock investors and the situations that is not improving till date.

The content of the book have been divided into two parts. The first part includes views on the rights of the shareholders regarding how they can exercise them in democratic perspective, where as the second part consists of feedback and the issues raised by shareholders at different annual general meeting of the public limited companies and financial institutions.

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

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

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

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

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

1) Amend the internal by laws
2) Authorized the sales of assets
3) Enter into merger
4) Change amount of authorized capital

As reviewed above, Nepalese stock being in emerging state; study conducted previously in Nepal in relation with the subject was no in specific issues but in broad manner.

An article published in business age by Nawaraj Pokharel (Oct.-Nov. 1999) “*Stock Market doing Pretty Well*” is reviewed here.

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

- Companies have rewarded shareholders.
- Reduction of interest rate of money market.
- Healthy speculation and loan has made the market interesting by providing loan to the stock investors their share as collateral.
- Investors are appearing more rational in their investment decision.

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

Next here is an article published in business age magazine by Atma Ram Ghimire (June 2001) "*Nepal share market and investors prospect*". In this study he has pointed out some important trends our capital market. He has concluded that the Nepalese share price is decreasing because of many unbalanced factors. The major reason behind the movement in the index is the domination of the banking sector script in the Nepalese stock market transactions. Mismanagement practices cannot help the growth of share market. The general public has invested recklessly. They just believe what one broker or the investor says about scrip. On of the prime motives for the investment is to earn return on it. Finally he concludes that the general investors should be alert and aware of the situation. They must receive the financial information before they make investment and act rationally.

Similarly, Narayan Prasad Poudel (2001) also carried out another study in a topic of "*Investing in shares of Return and Risk elements*". The study was based on the data collected for eight banks from mid July 2001. The main objectives of the study was to

determine whether the shares of commercial banks in Nepal are over or under priced by analyzing risk and return characteristics of the individual share.

Mr. Poudel summarized the following finding:

- Most of the individual share's appeared to be defensive as beta coefficients were les that on low data shares were less volatile than market as a whole. Only the return of share of Bank of Kathmandu had beta coefficient of greater than one, indicating that the share was more risky than the market.
- Nepal Arab Bank Ltd., Nepal Indosuez Bank Ltd., Himalayan Bank Ltd. Had higher expected equilibrium return than expected rate or return. And standard Chartered Bank Ltd., Nepal SBI Bank Ltd., Nepal Bangladesh Bank Ltd., Bank of Kathmandu Ltd. Had lower equilibrium return than expected rate or return.
- From this study we get Nepal Arab Bank Ltd., Nepal Indosuez Bank Ltd. and Himalayan Bank Ltd. was overpriced and other were under priced.

2.4 Reviews from Thesis

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

Shanker Kumar Mishra (2002) analyzed "*Risk and Return on common stock investment of commercial Banks in Nepal*" with special reference to five listed commercial banks. The major objective of this study was to promote and protect the interest of the investor by regulation the issuance sales and distribution of securities and purchases, sale or exchange of securities. He also intends to supervise and monitor the activities of the stock exchange and of other related firms carrying on securities business. In addition he tried to render contribution to the development of capital market by making securities transactions fair health, efficient and responsible.

Followings are the finding of the Study

It was noticed that there is a positive correlation between risk and return character of the company. Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing market. Situation and the company proper regulation should be introduced so that there is more transparency in issuance, sales and distribution of the securities. Investors do not have any idea about the procedures of the securities issuance. Neither company nor the stock brokers transmit any information to the investors about the current market situation and hence it becomes difficult for a common investors to invest in the securities. Both government authorities and the stock exchange regulator body should try to promote healthy practices so that the stock brokers do not give false information to the investors for their personal benefit which is a common practice in Nepal. Investors should get regular information about the systematic Risk (Beta), Return on Equity and P/E Ration of various listed companies in some way; it is given in economic times for the companies listed in Nepal Stock Exchange. Security exchange Board of Nepal should make this mandates that it is easier for the investors to calculate risk and return of portfolio and transparency is increased.

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

In her findings "Banking industry is the biggest one in F/Y 057/058 in terms of market capitalization and turnover expected return of the common stock of BOKL is maximum (i.e. 1.1267) due to effect of unrealistic annual return and Capital Structure of NIBL is found minimum. In the context of industries, expected return on banking sector (i.e. 67.39) is highest and other sector is the least (0.65%). Expect NIBL, other banks other banks common stocks are more volatile (aggressive with market stocks).

All banks in the study are said to be under priced. Capital Structure of BOKL is most risky and Capital Structure is least risky.

Followings are the findings of Mrs. Manandhar's Study

- Stocks have greater volatility risk than other investment, which take a random and unpredictable path. Stock market is risky in the short term and it is necessary to prepare the investors for it.
- One of the most important things to consider when choosing investment strength is the balance between risk and return that you are comfortable with
- Investors should diversify their fund to reduce risk with the help of optimal portfolio concept.
- It is better to say something that is going up and sell something that is going down.
- Investor's attitude, perception and risk handling capacity also play essential role is rational investment decision.

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

The share of Bangladesh Bank offered highest realized rate or return. Amongst them NABIL bank is the lowest having 5.23% which is less than required rate or return. NBL, which is hard hit by the events (Return = -0.8809), the ranking of the bank is placed as the highest return earner. The study showed that the realized rate or returns of the samples banks do not have the some features being with in the range of 5.23% to 16.12%. Return on the average tock is 5.51% over the period. All the shares under review generated higher rate of return than the market portfolio except NABIL Bank

Ltd. The price of shares of banks under review except NABIL Bank Ltd. are under priced. The unsystematic risk of NBL is the highest one amongst the shares under review which is 95.59% and SCB of Nepal has the lowest one being 45.14%. The negative correlation coefficient of NBL (-0.21) revealed that the return on the bank goes down if the market goes up. The rest of the shares moved in the direction the market moves. B y observing the individual shares beta coefficient, most of the shares appear to be defensive as beta coefficient are less than one. However, beta of the stocks NB bank SCB are greater than one indicating that the shares are more riskier than the market..

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

He outlined following Recommendations:

- Adoption of comprehensive and Advance Regulatory framework.
- Awareness campaign for the investor.
- Regular publication of financial information.
- Improvement in the infrastructure facilities.
- Effective use of banking system.
- Deregulation of foreign exchange.

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

Major findings of the study are as follows:

- The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on the common stock of EBL is maximum (44.44%) which is very high rate of return. in reality this rate exists only due to effect of unrealistic annual return because of the issues of banks share and increase in share price. Similarly expected return of the CS of NIB is found minimum (24.21%).
- Risk is the variability of return which is measured in terms of standard deviation on the basis of S.D. common stock of NSBI is most risky since it had high S.D. and C.S. of NIBL is least risky because of its lowest S.D. on the other hand, we know that coefficient of variation is more rational basis of investment decision. Which measures the risk per unit of return on the basis of CV; CS of NIBL is the best among all banks. NIBL has 1.4977 unit of risk per 1 unit of return. But CS of SBI has the highest risk per unit return i.e. 3.5495.
- Diversification of fund by making a portfolio can reduce unsystematic risk of individual security significantly. If investors select the securities for investment, which have highly negative correlation of returns, the risk can be returns of two stocks in highly positive, risk reduction is not so significant. So, portfolio between the C.S. of same industry cannot reduce risk properly. In this study, SBI and EBL have negative correlation between their returns, which is favorable with the viewpoint of the diversification. And all other banks have positive correlation among their returns. So, the portfolio construction among their returns. So, the portfolio construction of the common stock of these banks will not completely reduce any risk, which is not favorable as portfolio construction is concerned.

2.6 Research Gap

Although some previous MBS students have conducted their thesis in the similar topic the present researcher has selected, there is fundamental difference between those and this present one. The previous researcher focused only on the risk and return aspect of selected commercial banks from investors perspectives. This research has further tried to identify the correlation among returns of the commercial banks within portfolio, which plays a significant role in risk reduction by portfolio construction and systematic and unsystematic risk has been identified for each bank which is not done by previous researchers.

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

CHAPTER – III

RESEARCH METHODOLOGY

3.1 Introduction

The systematic way of solving research problems in Research methodology; which ultimately refers to overall research process. Research methodology includes all the procedures from theoretical framework to the collection and analysis of the data. As most of the data are quantitative the research is based on the specific models. It is composed of both parts of technical aspect and logical aspect, on the basis of historical data. Research is systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well though out activities of gathering recording, classifying, analyzing and interpreting the data with the purpose of finding answer to the problem. Thus the entire process by which we attempt to solve problems is called research.

3.2 Research Design

Research design is the plan, structure, and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The research is based on the recent historical data, so simply it is a historical research. It covers the data from 2005/06-2009/10. It deals with the common stock of commercial banks on the basis of available information. For the portfolio analysis, the common stocks of the selected commercial banks are taken into account. This study is more analytical and empirical and less descriptive. Financial analysis with various statistical and financial tools has also been used for analysis aspect.

3.3 Sources of Data

All the data necessary for the research will be collected from secondary sources. Data related to market prices of shares (MPS), market capitalization, movement of NEPSE index and etc will be taken from the trading report published by NEPSE, other relevant data will be collected from individual banks, Security Board of Nepal (Thapathali) and from their web sites.

The collection procedure is summarized below: -

- Financial document and summary sheets provided by banks.
- Trading manual published by Nepal Stock Exchange Limited.
- Related URL
- Materials published in Newspapers and Magazines.
- Other related journals, periodicals, books and booklets.
- Central library T.U.

3.4 Population and Sample

This study is based on the comparative study of risk and return on the basis of common stock investment of three commercial banks listed in NEPSE. Population is all the listed companies in NEPSE. ConcentRatio of this study is listed commercial banks only. There are a total of 31 commercial banks registered under Nepal Rastra Bank. The number of listed commercial banks in NEPSE is 24. For this, study ten commercial banks are taken as sample.

3.5 Factors and Methods of Analysis

The study employs various financial tools and statistical tools to analyze the data collected from various sources. Before, analysis, data will be presented in the tabular format, charts and graphs.

The collection data are analyzed by using various factors and financial as well as statistical tools which are given and defined below.

3.5.1 Factors of Data Analysis

The factors that are used for analysis of risk and return are as follows:

3.5.1.1 Market Price of Shares (MPS)

Here in this study, each year closing price is taken as the market price of stock which has specific time span of one year and the study has focused in annual basis. To get the real average, volume and price of each transaction in the stock and duRatio of time

of each transaction in the whole year are essential, which is tedious and impossible too, considering the data availability and maintenance.

Market value in the secondary market is determined by the supply and demand factors and reflects the opinion of investors and trader concerning the values of the stock closing price is used as market price of stock because it is very different to obtain and include these all information and average of high and low price may not be reliable and representative information.

3.5.1.2 Dividend per Share (DPS)

Dividend is the part of earning that is distributed to the share holders as a part of their investment. Dividend is return to equity capital that consist price of time and price of risk taking by the investors. The total amount of dividend out of earning available to the shareholder if distributed, the common stock's portion is said Dividend per share (DPS). Symbolically DPS can be expressed as follows:

$$DPS = \frac{\text{The Total Amount of Dividend Paid}}{\text{No. of Common Shares Outstaning}}$$

Dividend is relevant during computation of rate of return, which is reward to the shareholders for their investment, which can be given in different for, for investment, which can be given in different form. For instance cash dividend and stock dividend etc. if company declares only cash dividend. There is no problem while taking the exact amount of dividend that is relevant. But if the company declares stock dividend (Bonus share), it is difficult to obtain the amount that really shareholders has grained. In this case, they get extra numbers of shares as dividend and simultaneously price of the stock declines as a result of increased number of stocks. To get a real amount of dividend following model has been used through out.

Total Dividend in (Rs.)= Cash Dividend + % of Stock Dividend × MPS of ex-div. date

The various financial and statistical tools used are as follows:

3.5.2 Tools of Analysis

3.5.2.1 Financial Tools

1. Holding Period Return (HPR)

Holding period return indicates the summation of price appreciation and dividend gain. Here price appreciation means gain on capital investment.

$$\text{HPR or Simple 'R'} = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

Where,

R = Annual rate of return

P_t = Price of a stock at time t.

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

D_t = Cash dividend received at time t.

2. Return on Market (R_m)

It is the overall rate of return of the market, hence, of the NEPSE index. Market return is the average of individual return of the market.

$$R_m = \frac{\sum_{j=1}^{n} R_j}{n}$$

Where,

$\sum$ = sign of summation.

R_m =Market return

n = Number of samples period

3. Portfolio Risk and Return

Portfolio is combination of individual or a group of assets. Investors have different types of investment opportunity but they have limited resource for investment so that investors have to choose that investment opportunity which maximizes return for a

given level of risk or minimize risk for a given level of return. Thus the combination of these investments is called portfolio.

- **Portfolio Return**

The expected return on a portfolio is simply the weighted average of expected returns on the individual assets in the portfolio with weights being the fraction of the total portfolio invested in each asset.

$E(R_P) = W_i\ E(R_i) + W_j\ E(R_j)$

Where,

$E(R_P)$ = Expected return on portfolio.

W_i = Proportion of wealth invested in i assets.

W_j = Proportion of wealth invested in j assets.

$E(R_i)$ = Expected return on i assets.

$E(R_j)$ = Expected return on j assets.

- **Portfolio Risk**

It is the combined standard deviation of individual stock return. It is the risk of individual securities plus covariance between the securities. It can be written as:

$$\sigma_p = \sqrt{\sigma_i^2 w_i^2 + \sigma_j^2 w_j^2 + 2 w_i w_j \operatorname{cov}(R_i, R_j)}$$

Where,

σ_p = Standard deviation of stock i & J

W_i =Proportion of asset i

W_j =Proportion of assets j

σ_i^2 =Variance of assets i

σ_j^2 = Variance of assets j

$\operatorname{cov}(R_i, R_j)$ = Covariance between the return of assets i & j

4. Portfolio Beta

The beta of portfolio can be easily estimated by using beta of individual assets it includes. Symbolically, it is represented by:

Portfolio beta (b_p) = $\sum_{jX1}^{n}$ Wjbj

Where,

Wj = proportion of the portfolio

b_j = beta coefficient of asset j

b_p = portfolio beta coefficient

5. Required Rate of Return

Required rate of return is minimum expected rate of return needed to induce an investor to invest his/her fund. It is always more than risk less rate of return. Normally, when an individual investment is given higher return, i.e. realized rate of return then its required rate of return, this type of investment is known as under priced investment. Such under priced assets should be purchased. On the other hand, if realized rate or return is less than required rate of return of a particular asset, it is said

to be overpriced assets, such assets should be purchased, instead if one is holding such asset, if should be sold immediately. The required rate of return is calculated by using following formula.

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

Where,

$E(R_j)$ = Required rate of return for stocks j

R_f = Risk free rate

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

β_j = An index of systematic risk of stock j (beta coefficient)

3.5.2.2 Statistical Tools

1. Expected Rate of Return

One of the main aims of the study is to determine the expected return on the investment is CS. Expected rate or return is the arithmetic mean of the post years returns.

$$\overline{R_j} = \frac{R_j}{n}$$

Where,

$\overline{R_j}$ = Expected rate or return on stock j.

n = Number of years that the return is taken.

= sign of summation.

2. Standard Deviation

Standard deviation is a statistical measure and is widely used to measure risk from holding a single asset. It is also a statistical measure of the variability of a set of observations. The standard deviation represents a large dispersion of return and is a high risk and vice versa. The symbol is called (σ) sigma. It is the measure the total risk on stock investment.

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

If data is probability distribution

$$\text{or,} \quad \sigma_j = \sqrt{\sum_{t=1}^{n} (R_j - E(R_j))^2 P_j}$$

Where,

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

P_j = Probability distribution of the observation.

R_j = Probability distribution of the observation.

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

n = Number of years that the returns are taken.

3. Coefficient of Variation (C.V.)

Coefficient of variation is the relative measurement of risk and return. It measures the risk per unit of return. It provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same. The higher coefficient of variation, higher the risk.

$$\text{C.V.} = \frac{\sigma_j}{E(R_j)}$$

Where,

C.V. = Coefficient of variation of stock.

σ_j = Standard deviation of return on stock j.

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

4. Beta Coefficient (β)

Beta coefficient shows the market sensitivity of stock. Higher the beta, Higher the sensitivity and reaction to the market movement. Beta coefficient of a particular stock will be less than equal or more than 1, but the beta for market will be always 1.

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

$$COV(R_j, R_m) = \frac{\sum R_j \sum (R_j)(R_m) - \sum (R_m)}{n-1}$$

Where,

β_j = Beta coefficient of stock j.

$COV(R_j, R_m)$ = Covariance between return on stock j and return on market.

σ_m^2 = Variance of market return.

6. Correlation Coefficient

Two variables are correlated when they are related that the change in the value of one variable is accompanied by change in the value of other. Correlation may be positive or negative. If return on two securities is negatively correlated which combined in portfolio reduces the risk. If securities are positively correlated risk cannot be reduced. Correlation coefficient measures the relationship between two variables in quantitative terms. Correlation coefficient always lies in the range of +1 to -1. A positive correlation coefficient indicates that the returns from two securities generally move in the same direction and vice versa.

Correlation coefficient and covariance are related by the following equation.

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

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

Where,

$\pm_i$ and $\pm_j$ are the standard deviations of returns for assets i and j and $\circ_{ij}$ is correlation coefficient for asset i and j. there are various cases of correlation and risk condition which are presented below.

i) Perfectly Positive Correlation (ρ_{ij} = + 1)

Return on two perfectly positive correlated stocks would move up and down together and a portfolio of two such stocks would be exactly as risk if the portfolio consists of perfectly positive correlated stocks.

ii) Perfectly Negative Correlation (ρ_{ij} = -1)

Returns on two perfectly negative correlated stock would move perfectly together put in exactly opposite in directions. In this condition, risk can be completely eliminated perfect negative correlation almost never found in the real world.

iii) No Relation between Return (ρ_{ij} = 0)

When the correlation between two stocks is exactly zero, there is no relationship between the return they are independent of each other. In this condition some risk can be reduced.

iv) Intermediate Risk (ρ_{ij} = +0.5)

Must of the stocks are positively correlated but not perfectly. On average the returns on two stocks would lie on the range of +0.4 and +0.75 under this condition combining stock into portfolio reduced risk but not eliminate it completely.

3.6 Methods of Analysis and Presentation

All the methods of analysis and presentation are applied as simple as possible. Proper financial and statistical tools are used and results are presented in table and also shown in diagram. Interpretation is made in very simple way detail of calculation which cannot be shown in the main body part, are presented in appendices at the end, summary, conclusion and recommendation are presented finally.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

This chapter includes analysis of data collected and their presentation. In this chapter the effort has been made to analyze risk and return on common stock investment of commercial banks. Detail data of MPS, EPS, P/E Ratio and dividend of each bank and NEPSE index and their interpretation and analyses is done with reference to the various reading and literature review in the preceding chapter effort is made to analyze and diagnose the recent Nepalese stock market movement, with a special reference to the listed commercial banks. The analysis of data consists of organizing tabulating and assessing financial and statistical result from different tables and diagrams are drawn to make the result more simple and understandable.

4.1 Analysis of Individual Commercial Banks

The study is concentrated only on listed commercial banks of Nepal. There are currently 31 commercial banks in operation in Nepal and among them only 24 are listed in NEPSE. Among them 10 commercial banks are taken as a sample for the study. Common stock of each listed commercial banks, their risk and return are analyzes and included in this study.

4.1.1 Nepal Investment Bank Ltd. (NIBL)

4.1.1.1Introduction

NIBL, Previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50 % of the capital of NIBL) was credit Agricole Indosuez a subsidiary of one of the largest banking group in the world. With the decision of credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, has acquired on April 2002 the 50% shareholding of credit Agricloe Indosuez in Nepal Indosuez Bank Ltd.Now this bank is operating under the full ownership of Nepalese promoters and shareholders.

Authorized, Issued and Paid up capital of bank is Rs. 4,000millions, Rs.2409.10 millions, Rs. 2409.10 millions respectively. The bank was listed in the NEPSE at B.S. 2054/12/25. The central office of this organization is in Darbarmarg Kathmandu.

4.1.1.2 Analysis of Total Dividend

Table 4.1
MPS, Dividend, EPS and P/E Ratio of NIBL

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	1260	20	34.46	375.27	59.35	21.23
2006/07	1729	5	25	506.5	62.57	27.63
2007/08	2450	7.5	33.33	707.43	57.87	42.33
2008/09	1388	20	0	20	37.42	37.10
2009/10	705	25	0	25	52.55	13.42

Data Source: Annual Report of NIBL

According to table 4.1, NIBL is not paying stock dividend every year, i.e. for year 2008/09 and 2009/10. Highest total dividend is paid in the year 2007/08. P/E ratio of NIBL is maximum in the year 2007/08 i.e. 42.33 and minimum in the latest year 2009/10 i.e. 13.42. The closing MPS of NIBL is maximum of Rs. 2450 in the year 2007/08 and minimum of Rs. 705 in the year 2009/10.

Figure 4.1

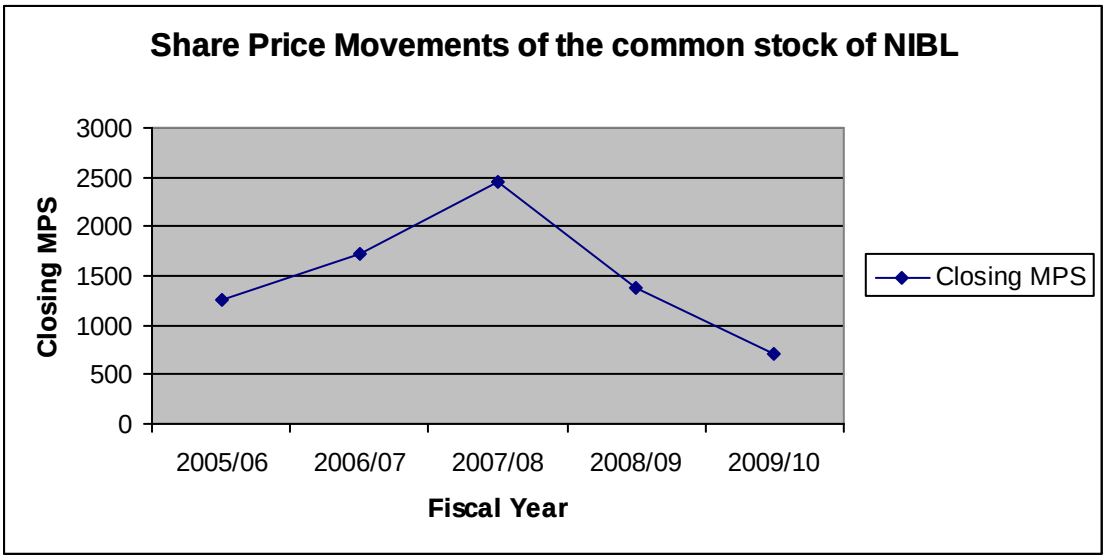


Figure 4.1 shows the trend line of market price in several year of NIBL. It can be seen that market price is soaring steadily from year 2005/06 to till 2007/08 and reached to peak of 2450. And then began to dropped rapidly after 2007/08 over the subsequent two years to 705 in the year 2009/10.

4.1.1.3Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of NIBL

Table 4.2

Expected Return, S.D., C.V., and ß of C.S. of NIBL

Fiscal Year	Closing MPS	Total Dividend	$R_j = \frac{D_t \Gamma P_t Z P_{tZ1}}{P_{tZ1}}$	$(R_j Z \overline{R}_j)$	$(R_j Z \overline{R}_j)^2$	$(Rm - \overline{Rm})$	$(R_j Z \overline{R}_j)(Rm - \overline{Rm})$
2005/06	1260	375.27	-	-	-	-	-
2006/07	1729	506.5	0.7740	0.5988	0.3586	0.6201	0.3713
2007/08	2450	707.43	0.8262	0.6510	0.4238	0.2605	0.1696
2008/09	1388	20	-0.4253	-0.6005	0.3606	-0.3704	0.2224
2009/10	705	25	-0.4741	-0.6493	0.4216	-0.5103	0.3313
			ΣR_j=0.7008		$\Sigma(Rj - \overline{R}j)^2$ =1.5646		$\Sigma(R_j Z \overline{R}_j)(R_m - \overline{Rm})$=1.0946

Where,

Expected Return ($\bar{R}_j$) $= \frac{R_j}{(n-1)} = \frac{0.7008}{4} = 0.1752$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \bar{R}_j)^2}{n-1}} = \sqrt{\frac{1.5646}{4}} = \sqrt{0.3912} = 0.6254$

Coefficient of Variation (C.V.) = $\frac{\sigma_j}{\bar{R}_j} = \frac{0.6254}{0.1752} = 3.5696$

Covariance (R_m,R_j) $= \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.0946}{4} = 0.2737$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\sigma_m^2} = \frac{0.2737}{0.2125} = 1.2880$

Unsystematic risk

Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= 0.3912- $1.2880^2 \times 0.2125$
= 0.0387

Standard deviation (σ_{ej}) = $\sqrt{0.0387}$ = 0.1966

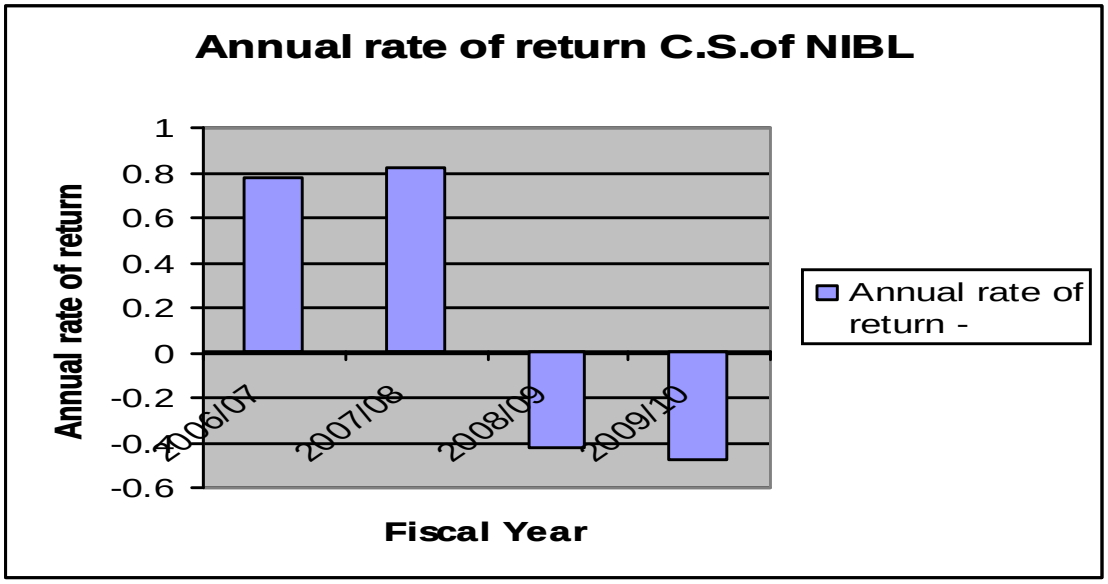
Where,

N = no. of observation
σ_m^2 = Variance of market
R_j = Returns of stock
R_m = Returns of market

Expected return of NIBL is 0.1752 with the total risk (measured by variance) of 0.3912. And unsystematic risk is 0.0387, and it is to much lower comparing with its total risk. The C.V. of NIBL is 3.5696 which denote that to get per unit return 3.5696 risk must be sacrifice. So, higher the C.V. higher will be the risk.

For sensitivity analysis of NIBL, the beta coefficient is 1.2880, which is more than 1, shows that NIBL is much volatile and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.2



The Figure 4.2 shows the annual rate of return of C.S of NIBL in several years. The rate of return is 0.7740 for the year 2006/07 than it is slightly increase next year to 0.8262. Subsequent year it plunged dramatically and reached to loss of 0.4253. Next year loss increased again and hit to 0.6493..

4.1.2 Himalayan Bank Ltd.(HBL)

4.1.2.1Introduction

HBL was established in 1993 in joint venture with Habib Bank Limited of Pakistan. The authorized and issued capital is Rs.3000 million and paid up capital is Rs.2000 million.

The bank was listed in NEPSE in 2050/03/21(1993 A.D.).

4.1.1.2 Analysis of Total Dividend

Table 4.3
MPS, Dividend, EPS and P/E Ratio of HBL

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	1100	30	5.00	95.15	59.24	18.57
2006/07	1740	15	25.00	715	60.66	28.69
2007/08	1980	25	20.00	329	62.74	31.56
2008/09	1760	12	31.56	318.45	61.90	28.43
2009/10	816	11.84	25.00	200.59	31.80	25.66

Data Source: Annual Report of HBL

According to table 4.3, HBL is paying cash and stock dividend every year. Highest total dividend is paid in the year 2006/07 i.e.715and lowest in the year 2005/06 i.e.Rs.95.15. P/E ratio of HBL is maximum in the year 2007/08 i.e. 31.56 and minimum in the year 2005/06 i.e. 18.57. The closing MPS of HBL is maximum of Rs. 1980 in the year 2007/08 and minimum of Rs. 816 in the year 2009/10.

Figure 4.3

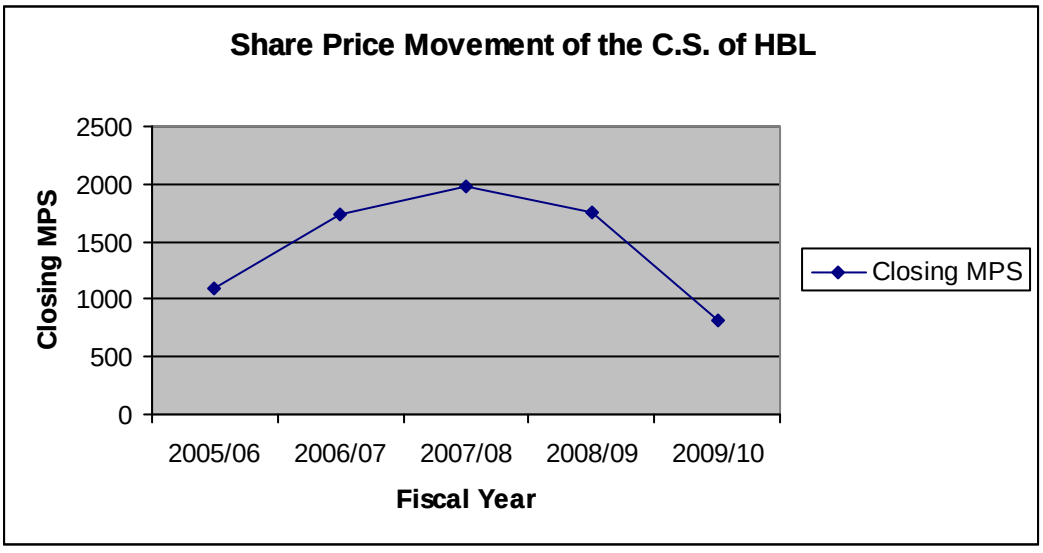


Figure 4.3 shows the trend line of market price in several year of HBL like a semi circle. It can be seen that price is increasing rapidly during the year 2006/07 and the

slope of increasing is dropped slightly and reached it peak to 1980. and it began to decrease slowly from the year 2007/08 and then sharply in subsequent year and reached 816.

4.1.2.3Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of HBL

Table 4.4

Expected Return, S.D., C.V., and ß of C.S. of HBL

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t + P_t - P_{t-1}}{P_{t-1}}$	$(R_j - \overline{R}_j)$	$(R_j - \overline{R}_j)^2$	(Rm- $\overline{R}m$)	$(R_j - \overline{R}_j)$ (Rm- $\overline{R}m$)
2005/06	1100	95.15	-	-	-	-	-
2006/07	1740	715	1.2318	0.9353	0.7848	0.6201	0.3473
2007/08	1980	329	0.3270	0.0305	0.0009	0.2605	0.0079
2008/09	1760	318.45	0.0497	-0.2468	0.0609	-0.3704	0.0914
2009/10	816	200.59	-0.4224	-0.7189	0.5168	-0.5103	0.3669
			ΣR_j=1.1861		Σ(Rj-.)^2 =1.4534		$\Sigma (R_j - \overline{R}_j)$ (R_m- $\overline{R}m$)=0.8135

Where,

Expected Return ($\overline{R}_j$) $= \frac{R_j}{(n-1)} = \frac{0.1861}{4} = 0.2965$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \overline{R}_j)^2}{n-1}} = \sqrt{\frac{1.4534}{4}} = \sqrt{0.3634} = 0.6028$

Coefficient of Variation (C.V.) = $\frac{\sigma_j}{\overline{R}_j} = \frac{0.6028}{0.2965} = 2.0392$

Covariance (R_m,R_j) $= \frac{\Sigma (R_j - \overline{R}_j)(R_m - \overline{R}_m)}{n-1} = \frac{0.8135}{4} = 0.2034$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\sigma_m^2} = \frac{0.2034}{0.2125} = 0.9572$

Unsystematic risk
Var(e_j) = Var of R_j - β_{im}^2Var of R_m

$= 0.3634 - 0.9572^2 \times 0.2125$
$= 0.1687$

Standard deviation (σ_{ej}) $= \sqrt{0.1687} = 0.4107$

Where,

N = no. of observation

σ_m^2 = Variance of market

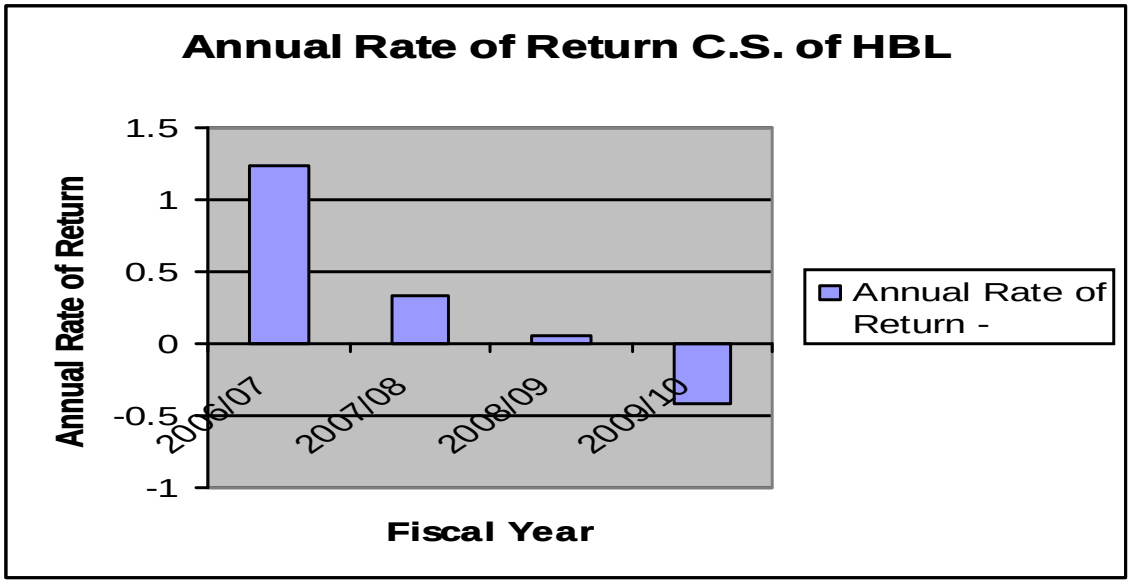
R_j = Returns of stock

R_m = Returns of market

Expected return of HBL is 0.2965 with the total risk (measured by S.D.) of 0.6028. And unsystematic risk is 0.4107, and it consists of higher portion of its total risk. The C.V. of HBL is 2.0392 which indicate that 2.0392 risks must be borne to get per unit return

For sensitivity analysis of HBL, the beta coefficient is 0.9572, which is less than 1, shows that HBL is less volatile and less aggressive investor can purchase this type of investment. Form the side of investment, it is less risky investment.

Figure 4.4



The Figure 4.4 shows the annual rate of return of C.S of HBL several years. The highest return is in the year 2006/07 i.e.1.2318 and then drop dramatically to 0.3270. Subsequent year 2008/09, it decreased again to 0.0497. And then it is dramatically suffered loss of 0.4224. The trend is going downward.

4.1.3 Everest Bank Ltd.(EBL)

4.1.3.1Introduction

EBL is joint venture partner with Punjab National Bank holding 20% of equity in the bank.The bank has been conferred with “Bank of the year 2006, Nepal” by ‘The Banker’ a publication of financial times, London.

Overall management of the bank is managed by foreign counterpart. Its authorized and issued capital is Rs. 2000 million and paid up capital is Rs.1279.61 millions.

4.1.3.2 Analysis of Total Dividend

Table 4.5
MPS, Dividend, EPS and P/E Ratio of EBL

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	1379	25	0	25	62.68	21.97
2006/07	2430	10	30	842.50	78.42	30.99
2007/08	3132	20	30	740	91.82	34.11
2008/09	2455	30	30	636.60	99.99	24.55
2009/10	1630	30	30	371.40	100.16	16.27

Data Source: Annual Report of EBL

According to table 4.5, there is no stock dividend in the year2005/06. Highest total dividend is paid in the year 2006/07i.e.949.60. P/E ratio of EBL is maximum in the year 2007/08 i.e. 34.11 and minimum in the latest year 2009/10 i.e. 16.27. P/E ratio and market prices are in increasing trend from starting year 2005/06 till 2007/08, then it is decreasing yet. The closing MPS of EBL is maximum of Rs. 3132 in the year 2007/08 and minimum of Rs. 1379 in the year 2005/06.

Figure 4.5

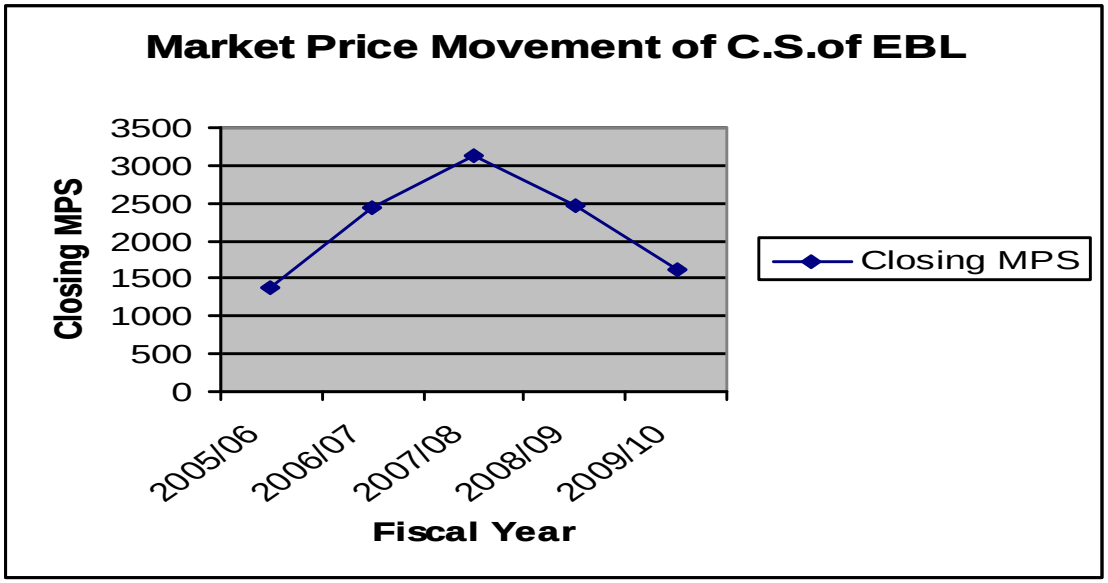


Figure 4.5 shows the trend line of market price of EBL which is in increasing from 2005/06. It can be seen that there is rapid growth from year 2005/06 to till 2007/08

reaching its peak of 3132. And then dropped sharply over the two subsequent year and reached to 1630.

4.1.3.3Expected Return ($\bar{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of EBL

Table 4.6

Expected Return, S.D., C.V., and ß of C.S. of EBL

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t + P_t - P_{t-1}}{P_{t-1}}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$	(Rm- $\bar{R}m$)	$(R_j - \bar{R}_j)$ (Rm- $\bar{R}m$)
2005/06	1379	25	-	-	-	-	-
2006/07	2430	842.50	1.3731	0.9309	0.8666	0.6201	0.5769
2007/08	3132	740	0.5934	0.1512	0.0229	0.2605	0.0394
2008/09	2455	636.60	-0.0129	-0.4551	0.2071	-0.3704	0.`1686
2009/10	1630	371.40	-0.1848	-0.6270	0.3931	-0.5103	0.3200
			ΣR_j=1.7688		$\Sigma(R_j)^2$ =1.4897		$\Sigma (R_j - \bar{R}_j)$ (Rm- $\bar{R}m$)=1.1049

Where,

Expected Return ($\bar{R}_j$) $= \frac{R_j}{(n-1)} = \frac{1.7688}{4} = 0.4422$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \bar{R}_j)^2}{n-1}} = \sqrt{\frac{1.4897}{4}} = \sqrt{0.3724} = 0.6102$

Coefficient of Variation (C.V.) = $\frac{\sigma_j}{\bar{R}_j} = \frac{0.6102}{0.4422} = 1.3799$

Covariance (R_m,R_j) $= \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.1049}{4} = 0.2762$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\sigma_m^2} = \frac{0.2762}{0.2125} = 1.2998$

Unsystematic risk
Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= 0.3724- $1.2998^2 \times 0.2125$

$= 0.0134$

Standard deviation (σ_{ej}) $= \sqrt{0.0134} = 0.1157$

Where,

N = no. of observation

σ_m^2 = Variance of market

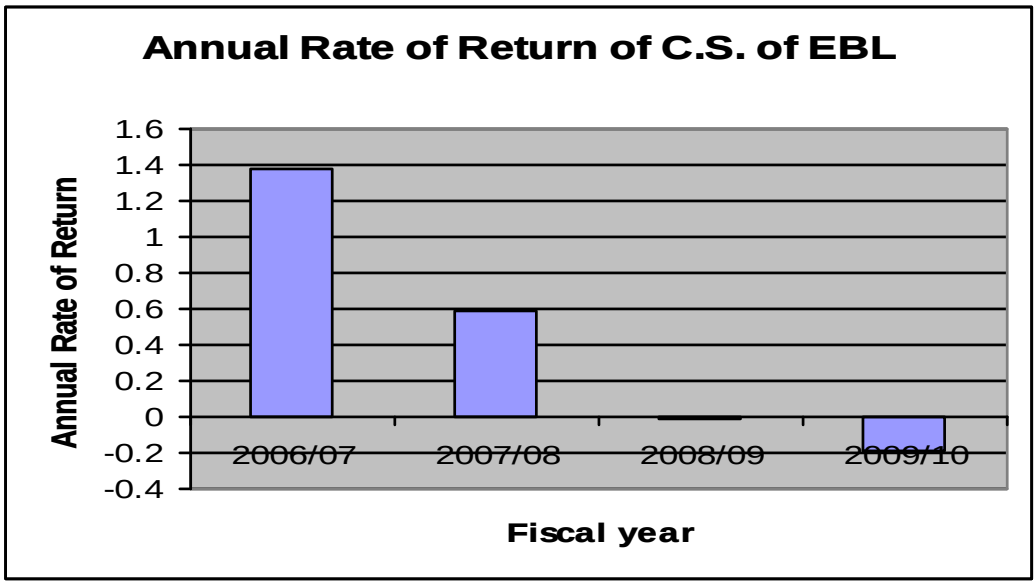
R_j = Returns of stock

R_m = Returns of market

Expected return of EBL is 0.4422 with the total risk (measured by S.D.) of 0.6102. And unsystematic risk is 0.1157. The C.V. of EBL is 1.3799 which indicates that the investor needs to sacrifice 1.3799 unit get per unit of risk for per unit return.

For sensitivity analysis of EBL, the beta coefficient is 1.2998, which is more than 1, shows that EBL is much volatile and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.6



The Figure 4.6 shows the annual rate of return of C.S of EBL. The rate of return is highest in the year 2006/07 i.e.1.3731 and it decreased dramatically to 0.5934 during the subsequent year 2007/08.Then it plunged in loss of 0.0129 for the year 2008/09 and again increase loss to 0.1848 in year2009/10. There is decline trend of returns.

4.1.4 NABIL Bank Ltd.(NABIL)

4.1.4.1Introduction

Fifty percent ownership of NABIL Bank Ltd. is holding by a foreign company NB International. Its authorized and issued capital is 2100 million and paid up capital is 2029.77 millions.

4.1.4.2 Analysis of Total Dividend

Table 4.7

MPS, Dividend, EPS and P/E Ratio of NABIL

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	2240	85	0	85	129.21	17.34
2006/07	5050	100	40	2100	137.08	36.84
2007/08	5275	60	40	1660	108.31	48.70
2008/09	4899	35	50	1375	106.76	45.89
2009/10	2384	30	40	570	78.61	30.33

Data Source: Annual Report of NABIL

According to table 4.7, there is no stock dividend in the year 2005/06. Highest total dividend is paid in the year 2006/07 i.e.Rs.2100. P/E ratio of NABIL is maximum in the year 2007/08 i.e. 48.70 and minimum in the year 2005/06 i.e. 17.34. P/E ratio and market price are in increasing trend from starting year2005/2006 to till 2007/08 then it is decreasing. The closing MPS of NABIL is maximum of Rs. 5275 in the year 2007/08 and minimum of Rs. 2240 in the year 2005/06.

Figure 4.7

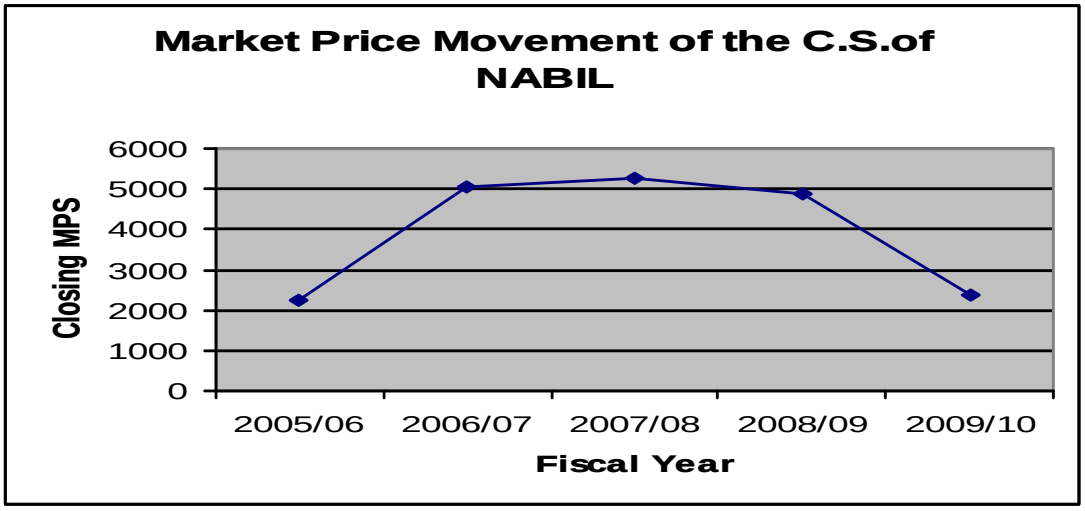


Figure 4.7 shows the trend line of market price of NABIL. During the year 2006/07 the price is soared rapidly to 5050 and again increased slightly to reach the peak at 5275.And then decrease slightly during the next year to 4899 and the subsequent year 2009/10 it dropped sharply to 2384.

4.1.1.3Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of NABIL

Table 4.8

Expected Return, S.D., C.V., and ß of C.S. of NABIL

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t \Gamma P_t Z P_{tZ1}}{P_{tZ1}}$	$(R_j Z \overline{R}_j)$	$(R_j Z \overline{R}_j)^2$	(Rm- $\overline{Rm}$)	$(R_j Z \overline{R}_j)$ (Rm- $\overline{Rm}$)
2005/06	2240	85	-	-	-	-	-
2006/07	5050	2100	2.1920	1.6026	2.5683	0.6201	0.9938
2007/08	5275	1660	0.3733	-0.2161	0.0467	0.2605	-0.0563
2008/09	4899	1375	0.1894	-0.4000	0.1600	-0.3704	0.1482
2009/10	2384	570	-0.3970	-0.9864	0.9730	-0.5103	0.5030
			ΣR_j=2.3577		Σ(Rj- $\overline{R}j$)^2 =3.7480		$\Sigma (R_j Z \overline{R}_j)$ (R_m - $\overline{Rm}$)=1.5891

Where,

Expected Return ($\bar{R}_j$) $= \frac{R_j}{(n \text{ Z} 1)} = \frac{2.3577}{4} = 0.5894$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j \text{ Z} \bar{R}_j)^2}{n \text{ Z} 1}} = \sqrt{\frac{3.7480}{4}} = \sqrt{0.9370} = 0.9680$

Coefficient of Variation (C.V.) = $\frac{\pm_j}{\bar{R}_j} = \frac{0.9680}{0.5894} = 1.6423$

Covariance (R_m,R_j) $= \frac{\text{¶}\int R_j \text{ Z} \bar{R}_j \text{Å}\int R_m \text{ Z} \bar{R}_m \text{Å}}{n \text{ Z} 1} = \frac{1.5891}{4} = 0.3973$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\pm_m^2} = \frac{0.3973}{0.2125} = 1.8696$

Unsystematic risk

Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= 0.9370- $1.8696^2 \times 0.2125$
= 0.1942

Standard deviation (σ_{ej}) $= \sqrt{0.1942} = 0.4407$

Where,

n = no. of observation

σ_m^2 = Variance of market

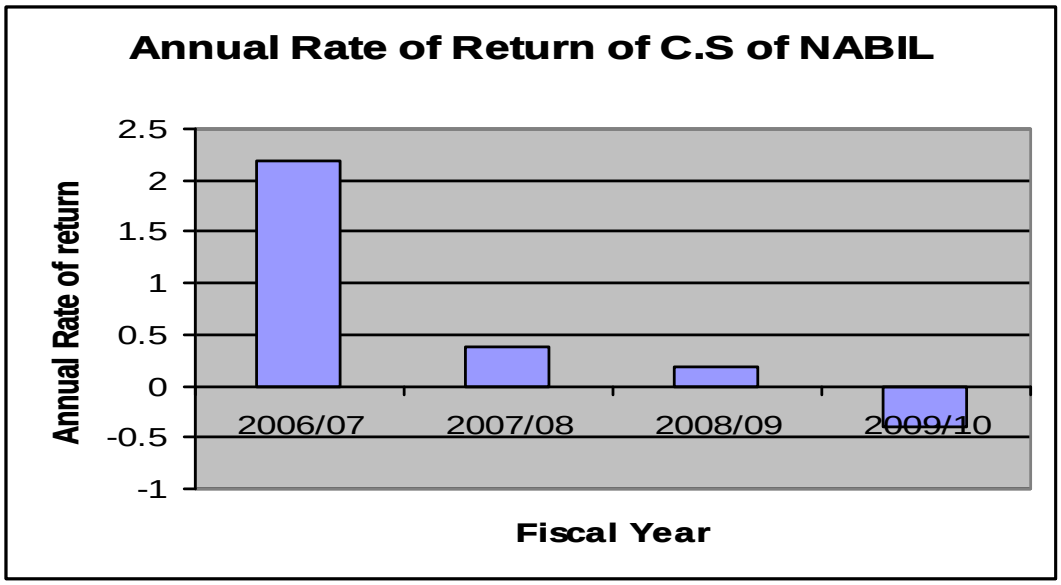
R_j = Returns of stock

R_m = Returns of market

Expected return of NABIL is 0.5894 with the total risk (measured by S.D.) of 0.9680. And unsystematic risk is 0.1942. The C.V. of NABIL is 1.6423 which denote that to get per unit return 1.6423 risk must be sacrifice.

For sensitivity analysis of NABIL, the beta coefficient is 1.8696, which is more than 1, shows that NABIL is much volatile; an aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.8



The Figure 4.8 shows the annual rate of return on C.S of NABIL in several years. The rate of return is highest in year 2006/07 i.e.2.1920 and dropped dramatically in following year 2007/08 to 0.3733. The subsequent year it is slightly decreased. And in the year 2009/10 it suffered loss of 0.3970.

4.1.5 Nepal SBI Bank Ltd.(SBI)

4.1.5.1 Introduction

Nepal SBI bank is joint venture partner with State Bank of India. And 50%of the equity is holding by State Bank of India. Overall management of the bank is managed by foreign counterpart. The authorized and issued capital of the bank is Rs.2000 million and paid up capital is Rs.1859.83 million.

4.1.5.2 Analysis of Total Dividend

Table 4.9
MPS, Dividend, EPS and P/E Ratio of SBI

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	612	5	0	5	18.27	33.49
2006/07	1176	12.59	35	362.59	39.35	29.89
2007/08	1511	0	0	0	28.33	53.34
2008/09	1900	2.11	40.30	351.11	36.18	52.52
2009/10	741	5	12.50	80.75	23.69	31.28

Data Source: Annual Report of SBI

According to table 4.9, SBI is not paying stock dividend every year i.e. in the year 2005/06 and 2007/08. Highest total dividend is paid in the year 2007/08 i.e. 362.59. P/E ratio of SBI is maximum in the year 2006/07 i.e. 53.34 and minimum in the latest year 2009/10 i.e. 31.28. P/E ratio and market price are in increasing trend from starting year 2005/06 till 2007/08, then it is decreasing continuously. The closing MPS of SBI is maximum of Rs. 1900 in the year 2008/09 and minimum of Rs. 612 in the year 2005/06.

Figure 4.9

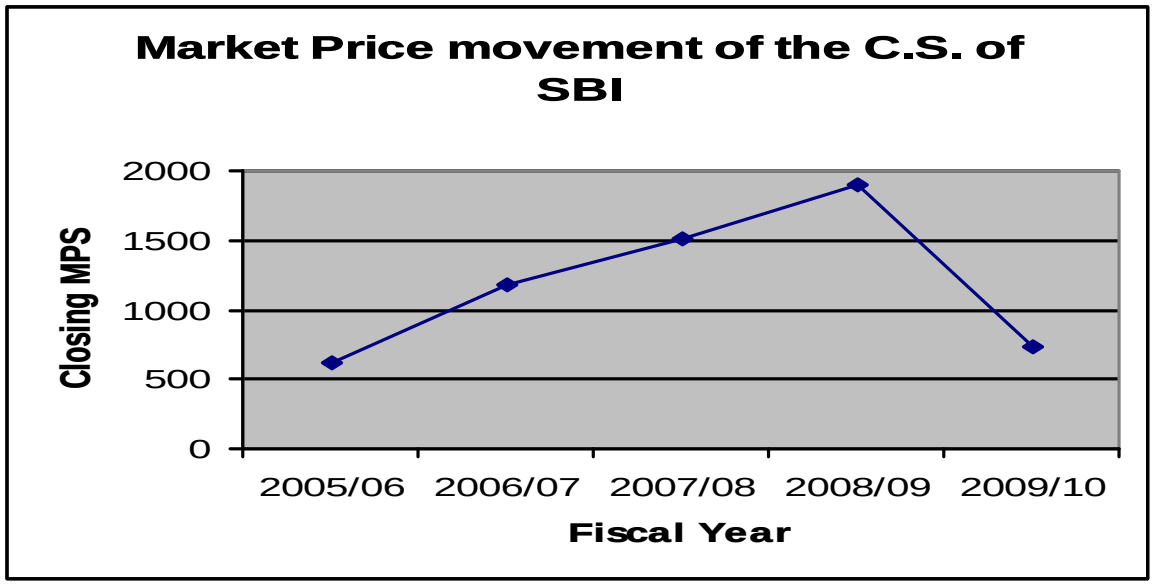


Figure 4.9 shows the trend line of market price in several year of SBI. It is begin to increase rapidly from the beginning of the year 2005/06. Subsequent 2 years, there is

steady increase and reached to its peak 1900 in year 2008/09. And then it is declining steeply to 741in the subsequent year 2009/10.

4.1.5.3Expected Return ($\bar{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of SBI

Table 4.10

Expected Return, S.D., C.V., and ß of C.S. of SBI

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t + P_t - P_{t-1}}{P_{t-1}}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$	(Rm- $\bar{R}m$)	$(R_j - \bar{R}_j)$ (Rm- $\bar{R}m$)
2005/06	612	5	-	-	-	-	-
2006/07	1176	362.59	1.5140	1.0837	1.1744	0.6201	0.6720
2007/08	1511	0	0.2849	-0.1454	0.0211	0.2605	-0.0379
2008/09	1900	351.11	0.4898	0.0595	0.0035	-0.3704	-0.0220
2009/10	741	80.70	-0.5675	-0.9978	0.9956	-0.5103	0.5092
			ΣR_j=1.7212		$\Sigma(Rj - \bar{R}j)^2$ =2.1946		$\Sigma (R_j - \bar{R}_j)$ (R_m- $\bar{R}m$)=1.1213

Where,

Expected Return ($\bar{R}_j$) $= \frac{R_j}{(n-1)} = \frac{1.7212}{4} = 0.4303$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \bar{R}_j)^2}{n-1}} = \sqrt{\frac{2.1946}{4}} = \sqrt{0.5487} = 0.7407$

Coefficient of Variation (C.V.) = $\frac{\pm_j}{\bar{R}_j} = \frac{0.7407}{0.4303} = 1.7214$

Covariance (R_m,R_j) $= \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.1213}{4} = 0.2803$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\pm_m^2} = \frac{0.2803}{0.2125} = 1.3191$

Unsystematic risk

Var(e_j) $=$ Var of R_j - β_{im}^2Var of R_m

$= 0.5487 - 1.3191^2 \times 0.2125$

$= 0.1789$

Standard deviation (σ_{ej}) $= \sqrt{0.1789} = 0.4230$

Where,

N = no. of observation

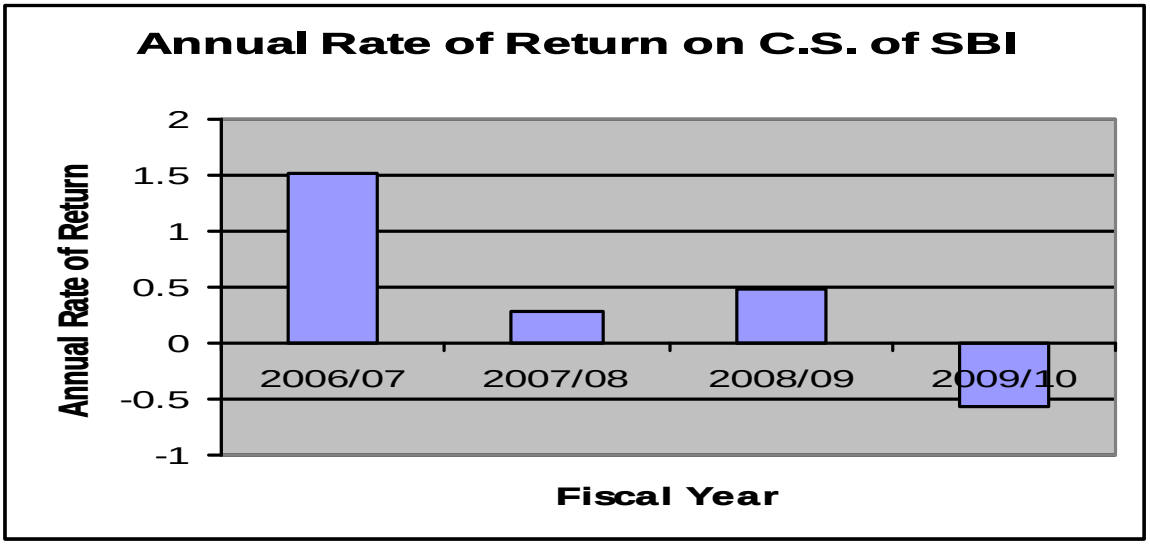
σ_m^2 = Variance of market

R_j = Returns of stock

R_m = Returns of market

Expected return of SBI is 0.4303 with the total risk (measured by S.D.) of 0.7407. And unsystematic risk is 0.4230, and it is more than half to its total risk. The C.V. of SBI is 1.7214 which denotes that to get per unit return 1.7214 risk must be sacrifice. For sensitivity analysis of SBI, the beta coefficient is 1.3191, which is more than 1, shows that SBI is much volatile and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.10



The Figure 4.10 shows the annual rate of return on C.S of SBI in several years. The rate of return is maximum on 2006/07 i.e. 1.5140 which shows the peak period. It

declines steeply to 0.2849 during the subsequent year 2007/08 and increase rapidly for the next year 2008/09. Then during the year 2009/10 it plunged dramatically. There is obviously downward trend of returns.

4.1.6 Bank of Kathmandu Ltd.(BOK)

4.1.6.1Introduction

Bank of Kathmandu is a bank of 100 percent domestic capital. The authorized and issued capital of the bank is Rs.2000 million and paid up capital is Rs.1359.48 million.

4.1.5.2 Analysis of Total Dividend

Table 4.11

MPS, Dividend, EPS and P/E Ratio of BOK

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	850	18	30	324.30	43.67	19.46
2006/07	1375	20	0	20	43.50	31.61
2007/08	2350	2.11	40	602.11	59.94	39.21
2008/09	1825	7.37	40	423.37	54.68	33.37
2009/10	840	15	15	100.50	43.08	19.50

Data Source: Annual Report of BOK

According to table 4.11, there is no stock dividend in the year 2006/07. Highest total dividend is paid in the year 2007/08 i.e. 602.11. P/E ratio of BOK is maximum in the year 2007/08 i.e. 39.21 and minimum in the latest year 2005/06 i.e. 19.46. P/E ratio and market price are in increasing from starting year 2005/06 till 2007/08, then it is decreasing continuously. The closing MPS of BOK is maximum of Rs. 2350 in the year 2007/08 and minimum of Rs. 840 in the year 2009/10.

Figure 4.11

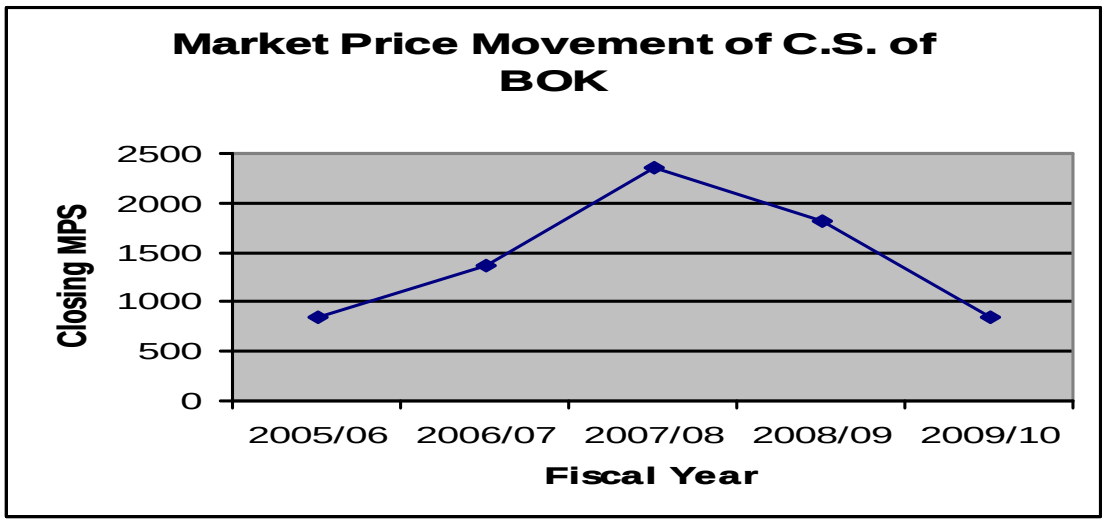


Figure 4.9 shows the trend line of market price in several year of BOK. It is begin to increase from the beginning of the year 2005/06. Next year, there is rapid increase and reached to its peak 2350. And subsequent first year it beginning to decline then the yearend of 2009/10, it is steeply declined to 840.

4.1.5.3 Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of SBI

Table 4.10

Expected Return, S.D., C.V., and ß of C.S. of SBI

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t \Gamma P_t Z P_{tZ1}}{P_{tZ1}}$	$(R_j Z \overline{R}_j)$	$(R_j Z \overline{R}_j)^2$	(Rm- $\overline{Rm}$)	$(R_j Z \overline{R}_j)$ (Rm- $\overline{Rm}$)
2005/06	850	324.30	-	-	-	-	-
2006/07	1375	20	0.6412	0.3261	0.1063	0.6201	0.2022
2007/08	2350	602.11	1.1470	0.8319	0.6921	0.2605	0.2167
2008/09	1825	423.37	-0.0432	-0.3583	0.1284	-0.3704	0.1327
2009/10	840	100.50	-0.4847	-0.7998	0.6397	-0.5103	0.4081
			ΣR_j=1.2603		Σ(Rj- $\overline{R}j$)^2 =1.5665		$\Sigma (R_j Z \overline{R}_j)$ (Rm- $\overline{Rm}$)=0.9597

Where,

Expected Return ($\bar{R}_j$) $= \frac{R_j}{(n \text{ Z} 1)} = \frac{1.2603}{4} = 0.3151$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j \text{ Z} \bar{R}_j)^2}{n \text{ Z} 1}} = \sqrt{\frac{1.5665}{4}} = \sqrt{0.3916} = 0.6258$

Coefficient of Variation (C.V.) $= \frac{\pm_j}{\bar{R}_j} = \frac{0.6258}{0.3151} = 1.9860$

Covariance (R_m,R_j) $= \frac{\text{¶}\int R_j \text{ Z} \bar{R}_j \text{Å}\int R_m \text{ Z} \bar{R}_m \text{Å}}{n \text{ Z} 1} = \frac{0.9597}{4} = 0.2399$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\pm_m^2} = \frac{0.2399}{0.2125} = 1.1289$

Unsystematic risk

Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= 0.3916- $1.1289^2 \times 0.2125$
= 0.1208

Standard deviation (σ_{ej}) $= \sqrt{0.1208} = 0.3475$

Where,

N = no. of observation

σ_m^2 = Variance of market

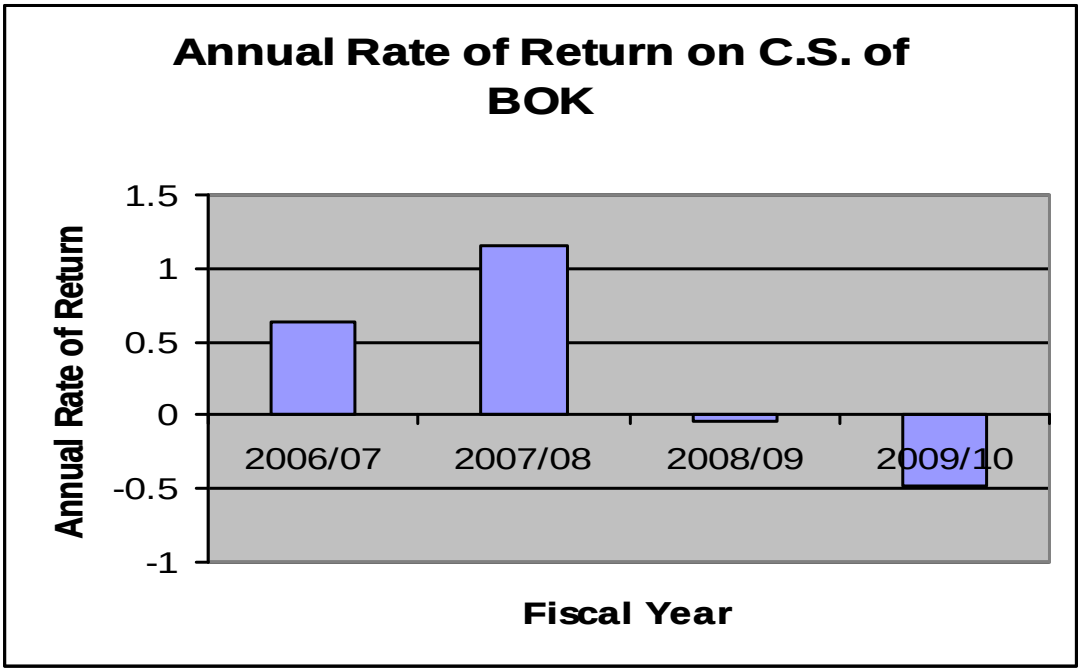
R_j = Returns of stock

R_m = Returns of market

Expected return of BOK is 0.3151 with the total risk (measured by S.D.) of 0.6258. And unsystematic risk is 0.3475, and it is more than half to its total risk. The C.V. of BOK is 1.9860 which denotes that to get per unit return 1.9860 risk must be sacrifice.

For sensitivity analysis of BOK, the beta coefficient is 1.1289, which is more than 1, shows that BOK is slightly more volatile and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.12



The Figure 4.12 shows the annual rate of return on C.S of BOK in several years. The rate of return is 0.6412 on 2006/07.It soared rapidly during the year 2007/08 and reached peak.i.e.1.1470. It declines steeply to negative rate of -0.0432 during the subsequent year 2008/09 and decrease continuously during the year 2009/10 and reached to -0.4847. There is obviously downward trend of returns.

4.1.7 Kumari Bank Ltd.(KBL)

4.1.7.1Introduction

The authorized and issued capital of the bank is Rs.1600 millions and paid up capital is Rs.1485.55 millions.

4.1.5.2 Analysis of Total Dividend

Table 4.13

MPS, Dividend, EPS and P/E Ratio of KBL

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	443	1.05	20	136.05	16.59	26.71
2006/07	830	1.05	20	261.05	22.70	36.56
2007/08	1005	0.53	10	65.53	16.35	61.47
2008/09	700	0.55	10.03	58.72	22.04	31.76
2009/10	468	12	0	12	24.24	19.31

Data Source: Annual Report of KBL

According to table 4.13, KBL is not paying stock dividend for the year 2009/10. Highest total dividend is paid in the year 2006/07 i.e. 261.05. P/E ratio of KBL is maximum in the year 2007/08 i.e. 61.47 and minimum in the latest year 2009/10 i.e. 19.31. P/E ratio and market price are in increasing trend from starting year 2005/06 till 2007/08, and then it is decreasing continuously. The closing MPS of KBL is maximum of Rs. 1005 in the year 2007/08 and minimum of Rs. 443 in the year 2005/06.

Figure 4.13

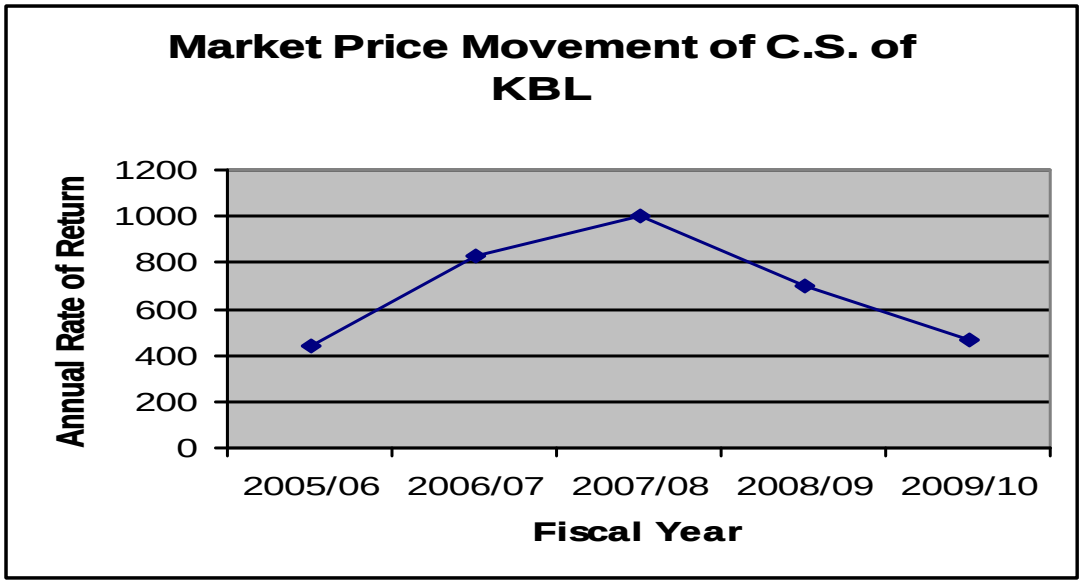


Figure 4.13 shows the trend line of market price in several year of KBL. It is begin to increase rapidly from the beginning of the year till 2006/07 and a modest increase

during the subsequent year 2007/08. Subsequent 2 years, there is steady declining and reached near to its five year previous price 468.

4.1.5.3Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of KBL

Table 4.14

Expected Return, S.D., C.V., and ß of C.S. of KBL

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t \Gamma P_t Z P_{tZ1}}{P_{tZ1}}$	$(R_j Z \overline{R}_j)$	$(R_j Z \overline{R}_j)^2$	(Rm- $\overline{R}m$)	$(R_j Z \overline{R}_j)$ (Rm- $\overline{R}m$)
2005/06	443	136.05	-	-	-	-	-
2006/07	830	261.05	1.4629	1.1646	1.3563	0.6201	0.7222
2007/08	1005	65.53	0.2898	-0.0085	0.0001	0.2605	-0.0022
2008/09	700	58.72	-0.2451	-0.5434	0.2953	-0.3704	0.2013
2009/10	468	12	-0.3143	-0.6126	0.3753	-0.5103	0.3126
			ΣR_j=1.193		Σ(Rj- $\overline{R}j$)^2 =2.0270		$\Sigma (R_j Z \overline{R}_j)$ (R_m- $\overline{R}m$)=1.2339

Where,

Expected Return ($\overline{R}_j$) $= \frac{R_j}{(n Z1)} = \frac{1.1933}{4} = 0.2983$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j Z \overline{R}_j)^2}{n Z1}} = \sqrt{\frac{2.0270}{4}} = \sqrt{0.5067} = 0.7118$

Coefficient of Variation (C.V.) = $\frac{\pm_j}{\overline{R}_j} = \frac{0.7118}{0.2983} = 2.3862$

Covariance (R_m,R_j) $= \frac{\bullet \int R_j Z \overline{R}_j A \int R_m Z \overline{R}_m A}{n Z1} = \frac{1.2339}{4} = 0.3085$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\pm_m^2} = \frac{0.3085}{0.2125} = 1.4518$

Unsystematic risk

Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= $0.5067 - 1.4518^2 \times 0.2125$
= 0.0588

Standard deviation (σ_{ej}) = $\sqrt{0.0588}$ = 0.2425

Where,

N = no. of observation

σ_m^2 = Variance of market

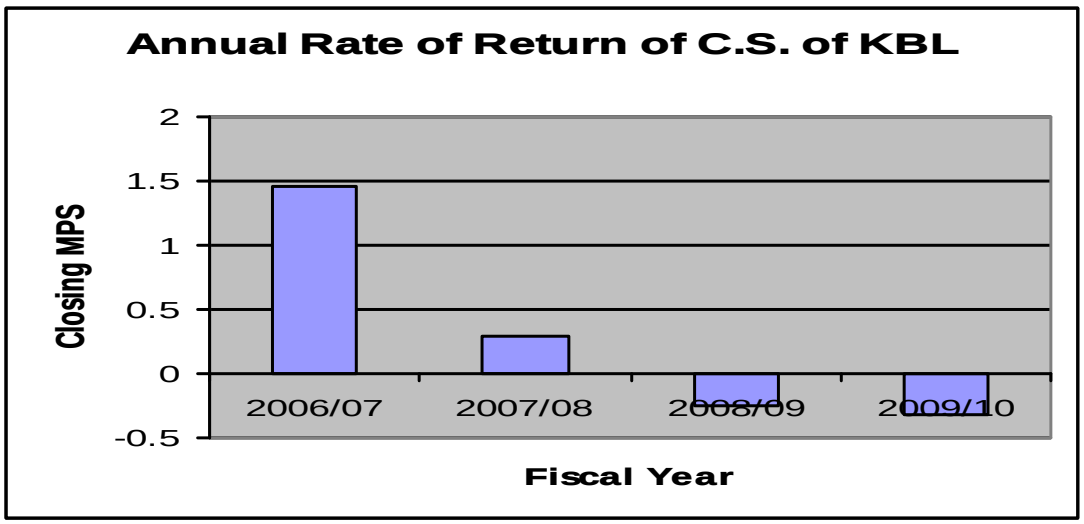
R_j = Returns of stock

R_m = Returns of market

Expected return of KBL is 0.2983 with the total risk (measured by S.D.) of 0.7118. And unsystematic risk is 0.2425, and it is less than half to its total risk. The C.V. of KBL is 2.3862 which denote that to get per unit return 2.3862 risk must be sacrifice.

For sensitivity analysis of KBL, the beta coefficient is 1.4518, which is more than 1, shows that KBL is much volatile than market and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.14



The Figure 4.14 shows that the annual rate of return on C.S of KBL in several years. The rate of return is maximum on 2006/07 i.e. 1.4629 which shows the peak period. It declines steeply to 0.2898 during the subsequent year 2007/08 and decrease dramatically for the next year 2008/09 and reach negative rate to -0.2451. Then

during the year 2009/10, again it decline steadily to -0.3143. There is obviously downward trend of returns.

4.1.8 Siddhartha Bank Ltd.(SBI)

4.1.8.1Introduction

The authorized and issued capital of the bank is Rs.3000 millions and paid up capital is Rs.1651.72 millions.

4.1.5.2 Analysis of Total Dividend

Table 4.15
MPS, Dividend, EPS and P/E Ratio of SBL

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	360	0	0	0	13.05	27.59
2006/07	778	0.79	15	147.79	15.88	48.98
2007/08	1090	0.79	15	123.79	17.29	63.04
2008/09	1000	0.79	15	67.54	22.89	43.70
2009/10	444	8.42	0	8.42	21.99	20.21

Data Source: Annual Report of SBL

According to table 4.15, SBL is not paying stock dividend every year i.e. in the year 2005/06 and 2009/10. Highest total dividend is paid in the year 2006/07 i.e. 147.79. P/E ratio of SBL is maximum in the year 2007/08 i.e. 63.04 and minimum in the latest year 2009/10 i.e. 20.21. P/E ratio and market price are in increasing trend from starting year 2005/06 till 2007/08, and then it is decreasing continuously. The closing MPS of SBL is maximum of Rs. 1090 in the year 2007/08 and minimum of Rs. 360 in the year 2005/06.

Figure 4.15

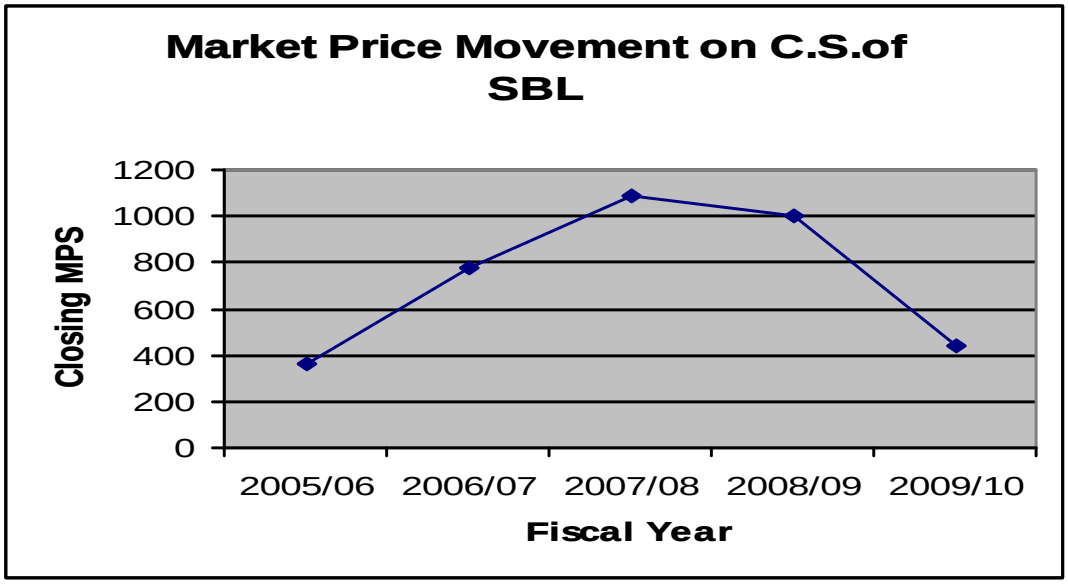


Figure 4.15 shows the trend line of market price in several year of SBL. It is begin to increase rapidly from the beginning of the year 2005/06. Subsequent 2 years, there is steady increase and reached to its peak 1090. And then it begins to decline. During the year of 2008/09 it decline slightly and than decline sharply to 444 during the last year.

4.1.8.3Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of SBL

Table 4.16

Expected Return, S.D., C.V., and ß of C.S. of SBL

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t \Gamma P_t Z P_{tZ1}}{P_{tZ1}}$	$(R_j Z \overline{R}_j)$	$(R_j Z \overline{R}_j)^2$	(Rm- $\overline{Rm}$)	$(R_j Z \overline{R}_j)$ (Rm- $\overline{Rm}$)
2005/06	360	0	-	-	-	-	-
2006/07	778	147.79	1.5716	1.1807	1.3941	0.6201	0.7322
2007/08	1090	123.79	0.5601	0.1692	0.0286	0.2605	0.0441
2008/09	1000	67.54	-0.0206	-0.4115	0.1693	-0.3704	0.1524
2009/10	444	8.42	-0.5476	-0.9385	0.8808	-0.5103	0.4789
			ΣR_j=1.5635		Σ(Rj- $\overline{R}j$)^2 =2.4728		$\Sigma (R_j Z \overline{R}_j)$ (Rm- $\overline{Rm}$)=1.4076

Where,

Expected Return ($\overline{R}_j$) $= \frac{R_j}{(n Z 1)} = \frac{1.5635}{4} = 0.3909$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \bar{R}_j)^2}{n-1}} = \sqrt{\frac{2.4728}{4}} = \sqrt{0.6182} = 0.7863$

Coefficient of Variation (C.V.) $= \frac{\sigma_j}{\bar{R}_j} = \frac{0.7863}{0.3909} = 2.0115$

Covariance (R_m,R_j) $= \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.4076}{4} = 0.3519$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\sigma_m^2} = \frac{0.3519}{0.2125} = 1.6560$

Unsystematic risk

Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= $0.6182 - 1.6560^2 \times 0.2125$
= 0.0397

Standard deviation (σ_{ej}) $= \sqrt{0.0397} = 0.1992$

Where,

N = no. of observation

σ_m^2 = Variance of market

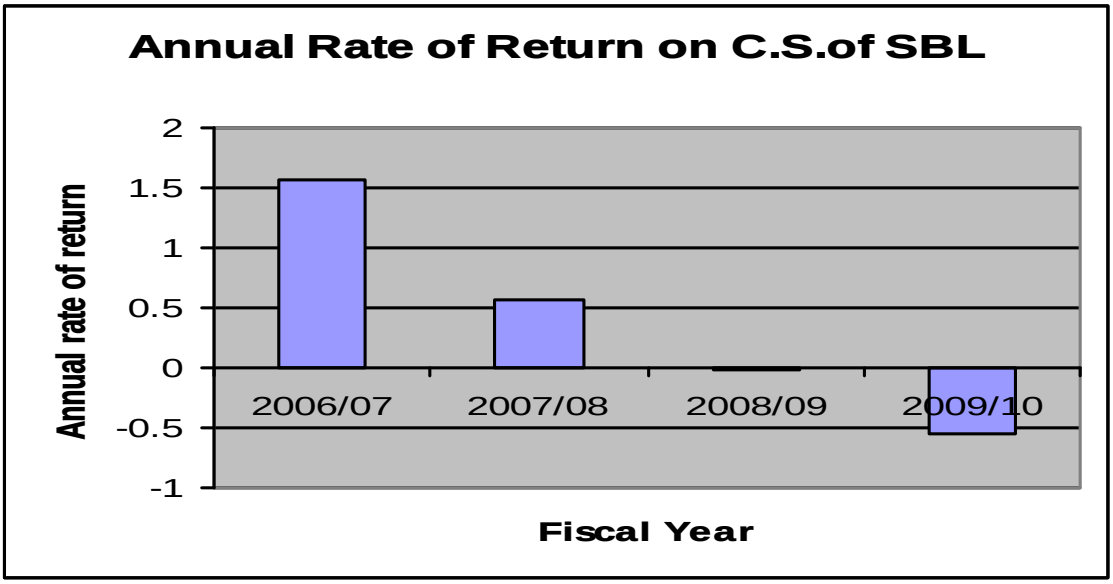
R_j = Returns of stock

R_m = Returns of market

Expected return of SBL is 0.3909 with the total risk (measured by S.D.) of 0.7863. And unsystematic risk is 0.1992. The C.V. of SBL is 2.0115 which denote that to get per unit return 2.0115 risk must be sacrifice.

For sensitivity analysis of SBL, the beta coefficient is 1.6560, which is more than 1, shows that SBL is much volatile than market and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.16



The Figure 4.16 shows that the annual rate of return on C.S of SBL in several years. The rate of return is maximum on 2006/07 i.e. 1.5716 which shows the peak period. It declines steeply to 0.5601 during the subsequent year 2007/08 and dropped dramatically for the next year 2008/09 and reached negative rate of -0.0206. Then during the next year 2009/10 it plunged to -0.5476. There is obviously downward trend of returns.

4.1.9 Nepal Industrial and Commercial Bank Ltd.(NIC)

4.1.9.1Introduction

The authorized and issued capital of the bank is Rs.1600 millions and paid up capital is Rs.1311.55 million.

4.1.9.2 Analysis of Total Dividend

Table 4.17

MPS, Dividend, EPS and P/E Ratio of NIC

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	496	0.53	10	52.33	16.10	30.81
2006/07	950	1.05	20	104.65	24.01	39.56
2007/08	1284	1.05	20	196.85	25.75	49.86
2008/09	1126	0.79	15	83.29	27.83	40.46
2009/10	626	26.32	0	26.32	34.30	18.25

Data Source: Annual Report of NIC

According to table 4.17, NIC is not paying stock dividend in the year 2009/10.Highest total dividend is paid in the year 2007/08 i.e. 196.85. P/E ratio of NIC is maximum in the year 2007/08 i.e. 49.86 and minimum in the latest year 2009/10 i.e. 18.25. P/E ratio and market price are in increasing trend from starting year 2005/06 till 2007/08, and then it is decreasing continuously. The closing MPS of NIC is maximum of Rs. 1284 in the year 2007/08 and minimum of Rs. 496 in the year 2005/06.

Figure 4.17

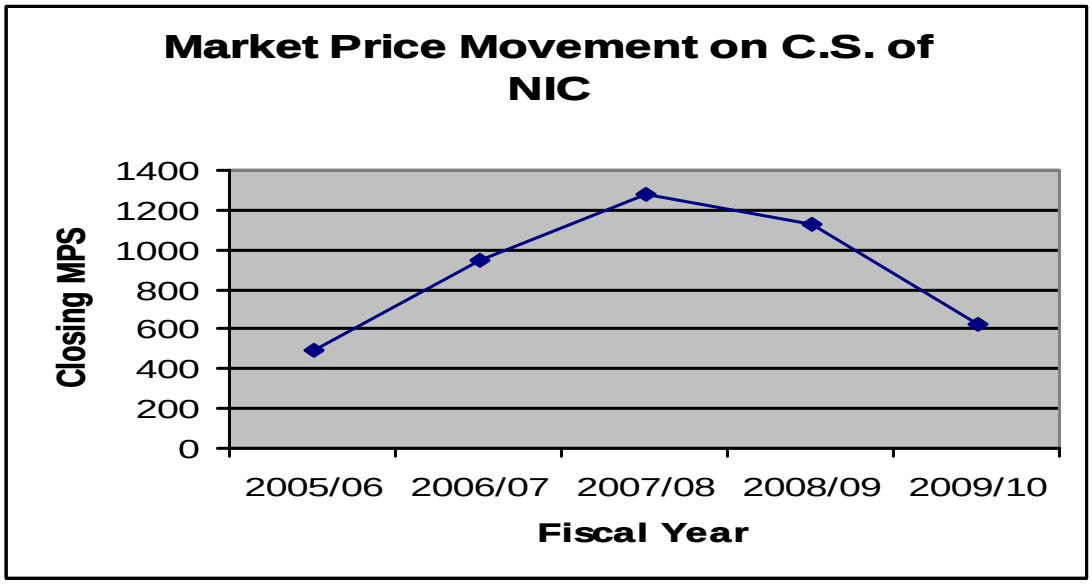


Figure 4.17 shows the trend line of market price in several year of NIC. It is begin to increase rapidly from the beginning of the year 2005/06. Subsequent 2 years, there is steady increase and reached to its peak 1284. And then it is declining slowly. During the year 2008/09 it backed to 1126 and subsequent year it dropped

steeply to 626.

4.1.5.3Expected Return ($\bar{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of NIC

Table 4.18

Expected Return, S.D., C.V., and ß of C.S. of NIC

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t + P_t - P_{t-1}}{P_{t-1}}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$	(Rm- $\bar{R}m$)	$(R_j - \bar{R}_j)$ (Rm- $\bar{R}m$)
2005/0	496	52.33	-	-	-	-	-
2006/0	950	104.65	1.1263	0.8247	0.6801	0.6201	0.5114
2007/0	1284	196.85	0.5588	0.2572	0.0662	0.2605	0.0670
2008/0	1126	83.29	-0.0582	-0.3598	0.1295	-0.3704	0.1333
2009/1	626	26.32	-0.4207	-0.7223	0.5217	-0.5103	0.3686
			ΣR_j=1.2062		$\Sigma(Rj-\bar{R}j)^2$ =1.3975		$\Sigma(R_j - \bar{R}_j)$ (Rm - $\bar{R}m$)=1.0803

Where,

Expected Return ($\bar{R}_j$) $= \frac{R_j}{(n-1)} = \frac{1.2062}{4} = 0.3016$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \bar{R}_j)^2}{n-1}} = \sqrt{\frac{1.3975}{4}} = \sqrt{0.3494} = 0.5911$

Coefficient of Variation (C.V.) = $\frac{\sigma_j}{\bar{R}_j} = \frac{0.5911}{0.3016} = 1.9599$

Covariance (R_m,R_j) $= \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{1.0803}{4} = 0.2701$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\sigma_m^2} = \frac{0.2701}{0.2125} = 1.2711$

Unsystematic risk
Var(e_j) = Var of R_j - β_{im}^2Var of R_m
= 0.3494- $1.2711^2 \times 0.2125$
= 0.0061

Standard deviation (σ_{ej}) $= \sqrt{0.0061} = 0.0779$

Where,

N = no. of observation

σ_m^2 = Variance of market

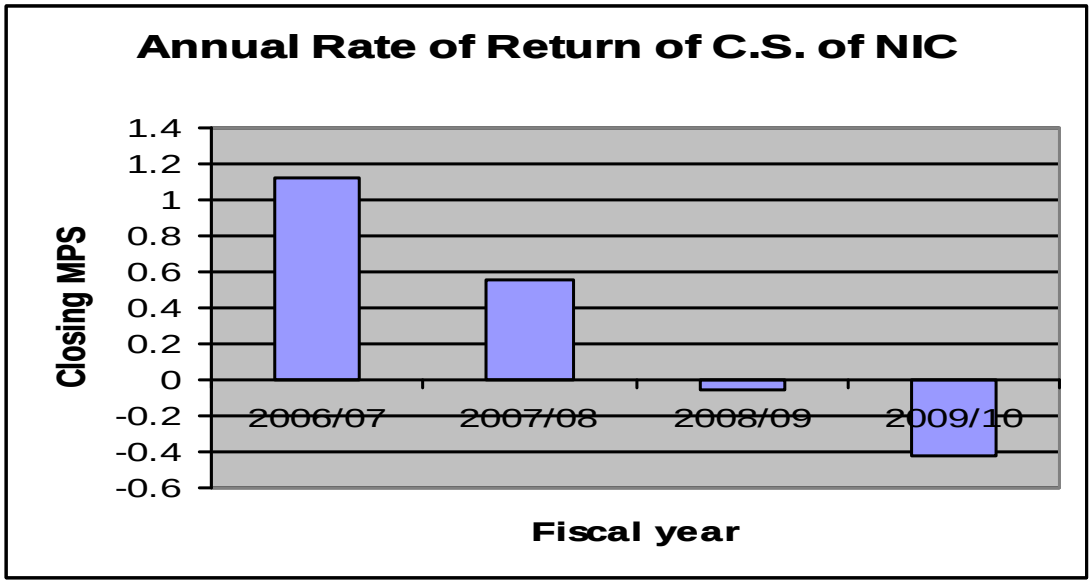
R_j = Returns of stock

R_m = Returns of market

Expected return of NIC is 0.3016 with the total risk (measured by S.D.) of 0.5911. And unsystematic risk is 0.0779, and it is too much lower to its total risk. The C.V. of NIC is 1.9599 which denotes that to get per unit return 1.9599 risk must be sacrifice.

For sensitivity analysis of NIC, the beta coefficient is 1.2711, which is more than 1, shows that NIC is much volatile than market and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.18



The Figure 4.18 shows the annual rate of return on C.S of NIC in several years. The rate of return is maximum on 2006/07 i.e. 1.1263 which shows the peak period. It declines steeply to 0.5588 during the subsequent year 2007/08 and plummeted for the next year 2008/09 to negative rate of -0.0582. Then during the year 2009/10 it again dropped to-0.4207. There is obviously downward trend of returns.

4.1.10 NMB Bank Ltd.(NMB)

4.1.10.1 Introduction

Nepal NMB bank is joint venture partner with Young Lien Reality SDN, BHD, and Malaysia. It holds 15% shares of NMB bank. The authorized and issued capital of the bank is Rs.2000 million and paid up capital is Rs.2000 million.

4.1.5.2 Analysis of Total Dividend

Table 4.9
MPS, Dividend, EPS and P/E Ratio of SBI

Fiscal Year	Closing MPS	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	EPS (Rs.)	P/E Ratio
2005/06	276	0	24.29	117.81	18.25	15.13
2006/07	840	30	0	30	37.57	22.36
2007/08	930	0	10.53	81.08	7.28	127.71
2008/09	499	0	0	0	4.42	112.93
2009/10	295	10	0.53	11.31	10.65	27.70

Data Source: Annual Report of NMB

According to table 4.19, NMB is not paying stock dividend every year i.e. in the year 2006/07 and 2008/09. Highest total dividend is paid in the year 2005/06 i.e. 117.81. P/E ratio of NMB is maximum in the year 2007/08 i.e. 127.71 and minimum in the year 2005/06 i.e. 15.13. P/E ratio and market price are in increasing trend from starting year 2005/06 till 2007/08, and then it is decreasing continuously. The closing MPS of SBI is maximum of Rs. 930 in the year 2007/08 and minimum of Rs. 276 in the year 2005/06.

Figure 4.19

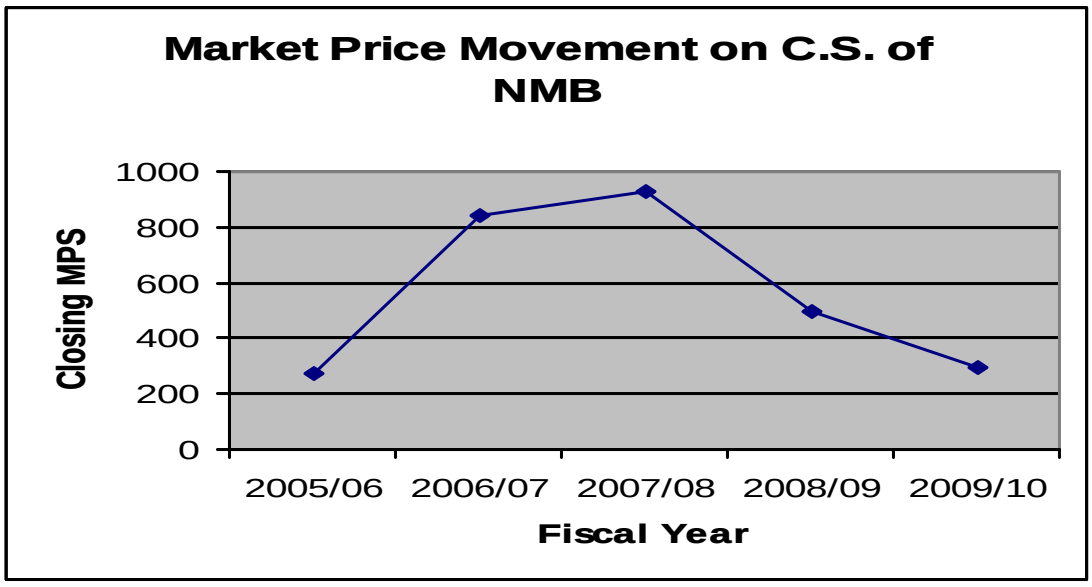


Figure 4.19 shows the trend line of market price in several year of NMB. It is begin to soar rapidly from the beginning year 2005/06 to 2006/07. Subsequent year 2007/08, there is slightly increase and reached to its peak 930. And then it is declining steeply to 499 in 2008/09 and again it is fairly fall to 295 in year 2009/10..

4.1.5.3Expected Return ($\overline{R}_j$), Standard Deviation (σ_j) and Coefficient of Variation (C.V.), and Beta ($ß_j$) of C.S. of NMB

Table 4.20

Expected Return, S.D., C.V., and ß of C.S. of NMB

Fiscal Year	Closing MPS	Total Dividend	Rj= $\frac{D_t + P_t - P_{t-1}}{P_{t-1}}$	$(R_j - \overline{R}_j)$	$(R_j - \overline{R}_j)^2$	(Rm- $\overline{R}m$)	$(R_j - \overline{R}_j)$ (Rm- $\overline{R}m$)
2005/06	276	117.81	-	-	-	-	-
2006/07	840	30	2.1522	1.7757	3.1531	0.6201	1.1011
2007/08	930	81.08	0.2037	-0.1729	0.0299	0.2605	-0.0450
2008/09	499	0	-0.4634	-0.8400	0.7056	-0.3704	0.3111
2009/10	295	11.31	-0.3862	-0.7628	0.5819	-0.5103	0.3893
			ΣR_j=1.5063		$\Sigma(Rj-\overline{R}j)^2$ =4.4705		$\Sigma(R_j - \overline{R}_j)$ (R_m- $\overline{R}m$)=1.7565

Where,

Expected Return ($\overline{R}_j$) $= \frac{R_j}{(n-1)} = \frac{1.5063}{4} = 0.3766$

Standard Deviation (σ_j) $= \sqrt{\frac{(R_j - \overline{R}_j)^2}{n-1}} = \sqrt{\frac{4.4705}{4}} = \sqrt{1.1176} = 1.0572$

Coefficient of Variation (C.V.) = $\frac{\sigma_j}{\overline{R}_j} = \frac{1.0572}{0.3766} = 2.8072$

Covariance (R_m,R_j) $= \frac{\sum (R_j - \overline{R}_j)(R_m - \overline{R}_m)}{n-1} = \frac{1.7565}{4} = 0.4391$

Again,

Beta (β_j) $= \frac{Cov(R_m, R_j)}{\sigma_m^2} = \frac{0.4391}{0.2125} = 2.0664$

Unsystematic risk

$Var(e_j)$ = Var of R_j - β_{im}^2Var of R_m
= 1.1176- $2.0664^2 \times 0.2125$
= 0.2102

Standard deviation (σ_{ej}) = $\sqrt{0.2102}$ = 0.4585

Where,

N = no. of observation

σ_m^2 = Variance of market

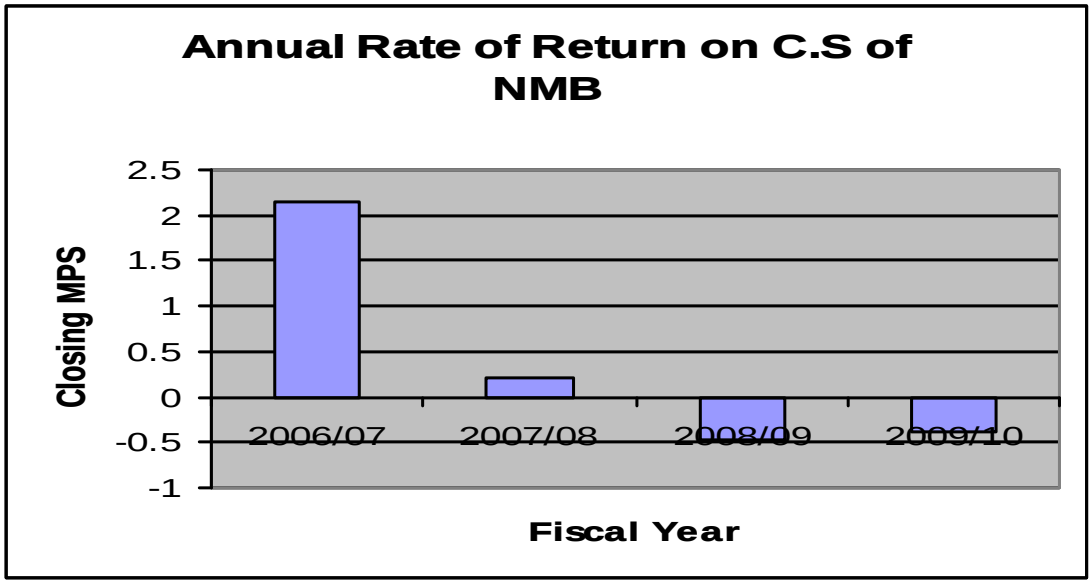
R_j = Returns of stock

R_m = Returns of market

Expected return of NMB is 0.3766 with the total risk (measured by S.D.) of 1.0572. And unsystematic risk is 0.4585 and it is higher to its total risk. The C.V. of NMB is 2.8072 which denote that to get per unit return 2.8072 risk must be sacrifice.

For sensitivity analysis of NMB, the beta coefficient is 2.0664, which is more than 1, shows that NMB is too much volatile than market and aggressive investor can purchase this type of investment. Form the side of investment, it is risky investment.

Figure 4.20



The Figure 4.20 shows the annual rate of return on C.S of NMB in several years. The rate of return is maximum on 2006/07 i.e. 2.1522 which shows the peak period. It declines steeply to 0.2037 during the subsequent year 2007/08 and again it dropped to negative rate of -0.4634. Then during the year 2009/10 the loss rate is lowered to 0.3862. There is obviously downward trend of returns.

4.2 Inter Bank Comparison

According to the result from analysis part, a comparative analysis of return, total risk and risk per unit performed here. Expected return, standard deviation of return and coefficient of variation of each bank for the year 2005/06 to 2009/10 are given in the table 4.21.

Table 4.21

Expected Return, S.D. and C. V. of each Bank

Bank	Expected Return ($\overline{R}_j$)	Standard Deviation(σ)	Coefficient of Variation (C.V.)	Remarks		
				Return	Risk	C.V.
NABIL	0.5894	0.9686	1.6423	1st	2th	9th
NIBL	0.1752	0.6254	3.5694	10th	7th	1st
HBL	0.2956	0.6028	2.0329	9th	9th	4th
SBI	0.4303	0.7407	1.7214	3rd	4th	8th
EBL	0.4422	0.6102	1.3799	2nd	8th	10th
BOK	0.3151	0.6258	1.9860	6th	6th	6th
KBL	0.2983	0.7118	2.3862	8th	5th	2nd
SBL	0.3909	0.7863	2.0115	4th	3rd	5th
NIC	0.3010	0.5911	1.9599	7th	10th	7th
NMB	0.3766	1.0572	2.8072	5th	1st	3rd

The table 4.7 shows the overall return and risk of the individual banks. Here, the investor can get the highest return from NABIL i.e. 0.5894 and lowest return from NIBL i.e. 0.1752. Total risk (measured by standard deviation) is observed maximum of the C.S. of NMB i.e. 1.0572 and minimum of NIC i.e. 0.5911. This means that quantitative of total risk is very high in NMB. Higher the C.V. higher the risk and C.V. of NMB is highest i.e. 2.8072 than that of other commercial banks. So common stock of NMB is more risky than that of other banks. C.V. is more reliable to compare the investment alternative because it has a single unit of measurement. Investment in EBL is more desirable because its C.V. is lowest among all of the banks. And NABIL bank limited is 2nd desirable since it is ranked 2nd on the basis of C.V.

To make the comparison easily understandable Figure 4.21 is presented below.

Figure 4.21

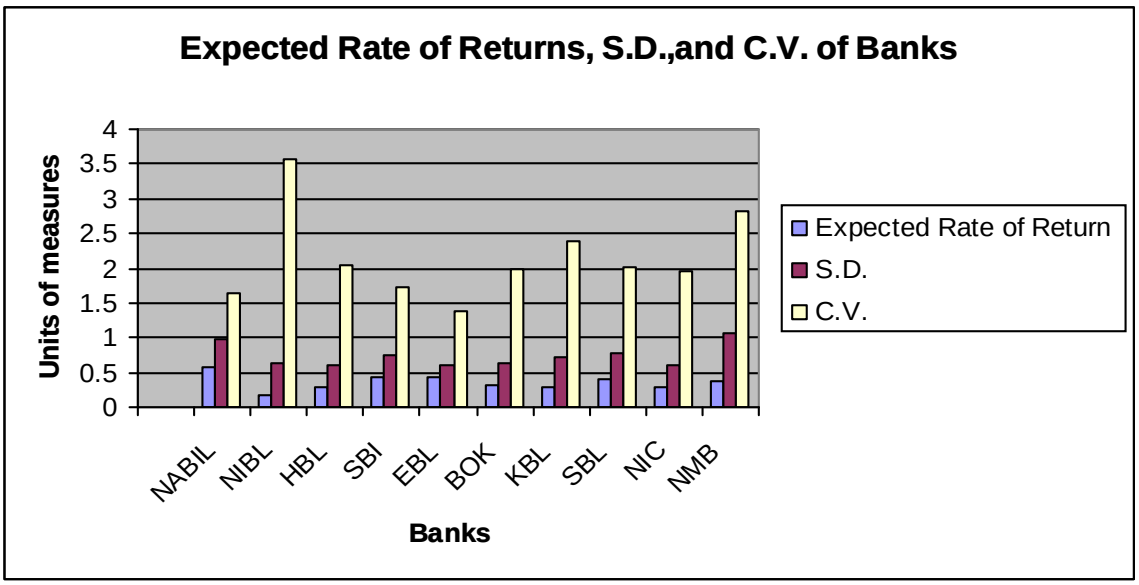


Figure 4.21 clarify the expected return, standard deviation and coefficient of variation of each individual bank. It is showing the comparison of these banks in terms of risk and return.

4.3 Market Capitalization

On the basis of Market Capitalization at July 15, 2010, size of each bank is presented in table 4.22 that NABIL has highest market capitalization with Rs.23023 millions sharing 21.08 percentage among these banks. And NIBL is in second position occupying 15.54 percentage share. Kumari Bank Ltd has lowest market capitalization with Rs.5549 million among these companies and taking 5.08 percentage shares. So NABIL is the biggest and KBL is the smallest company among these sample banks on the basis of market capitalization. The figure 4.22 shows the comparative proportion of the market capitalization.

The figure 4.8 shows that the comparative proportion of the market capitalization of listed ten banks.

Table 4.22

Market Capitalization of Banks

Bank	Market Capitalization	Percentage
NABIL	23,023,408,480	21.08
NIBL	16,969,835,745	15.54
HBL	9,924,314,400	9.09
SBI	12,297,712,323	11.26
EBL	10,412,766,000	9.54
BOK	9,930,119,640	9.09
KBL	5,549,719,032	5.08
SBL	6,975,817,200	6.39
NIC	7,139,404,800	6.54
NMB	6,975,817,200	6.39
Total	109,199,514,820	100

Source: Trading Report (2009 July 16- 2010 July 15) NEPSE

Comparative proportion of market capitalization of listed ten commercial banks is shown in given figure 4.8

Figure 4.22

Comparative Proportion of Market Capitalization of Banks

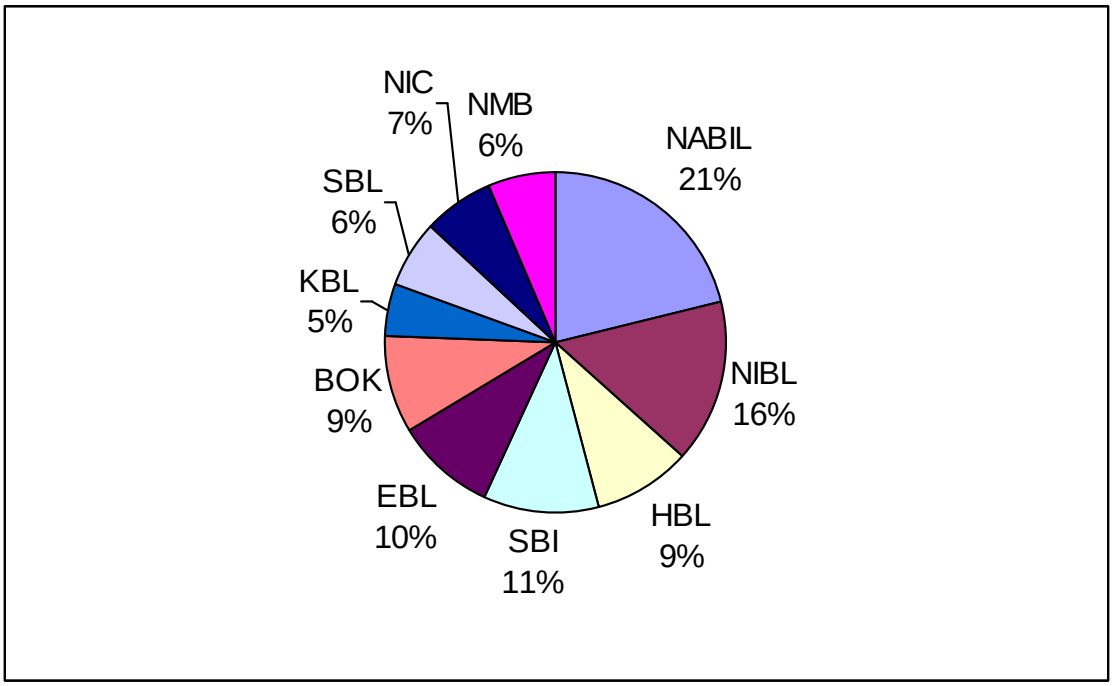


Figure 4.22 shows the share of each bank in the market. NABIL is in the highest position by occupying 21% share in the

market. And KBL is in the lowest position by occupying 5 percent of share in the market among others. NIBL occupying 16percent and SBI's is 11 percent of total market share being second and third largest bank from these banks and so on.

4.4 Comparison with Market

4.4.1Market Risk and Return Analysis

Nepal Stock Exchange ltd. (NEPSE) is only stock market in Nepal. Overall market movement is represented by market index (i.e. NEPSE Index). The NEPSE index is adjusted and changed continuously. With this NEPSE base market portfolio return its standard deviation and coefficient of variation is presented below.

Table 4.23

Calculation of Return, S.D. and C.V. of Overall Market

Fiscal Year	NEPSE Index	Rm= $\frac{NI_t - NI_{tZ1}}{NI_{tZ1}}$	(Rm- $\overline{R}_m$)	(Rm- $\overline{R}_m$)^2
2005/06	386.83	-	-	-
2006/07	683.95	0.7681	0.6201	0.3845
2007/08	963.36	0.4085	0.2605	0.0679
2008/09	749.10	-0.2224	-0.3704	0.1372
2009/10	477.73	-0.3623	-0.5103	0.2604
		ΣR_m=0.5919		Σ(Rm- $\overline{R}_m$)^2=0.8500

Where,

Expected Return ($\overline{R}_m$) $= \frac{R_m}{(n\ Z1)} = \frac{0.5919}{4} = 0.1480$

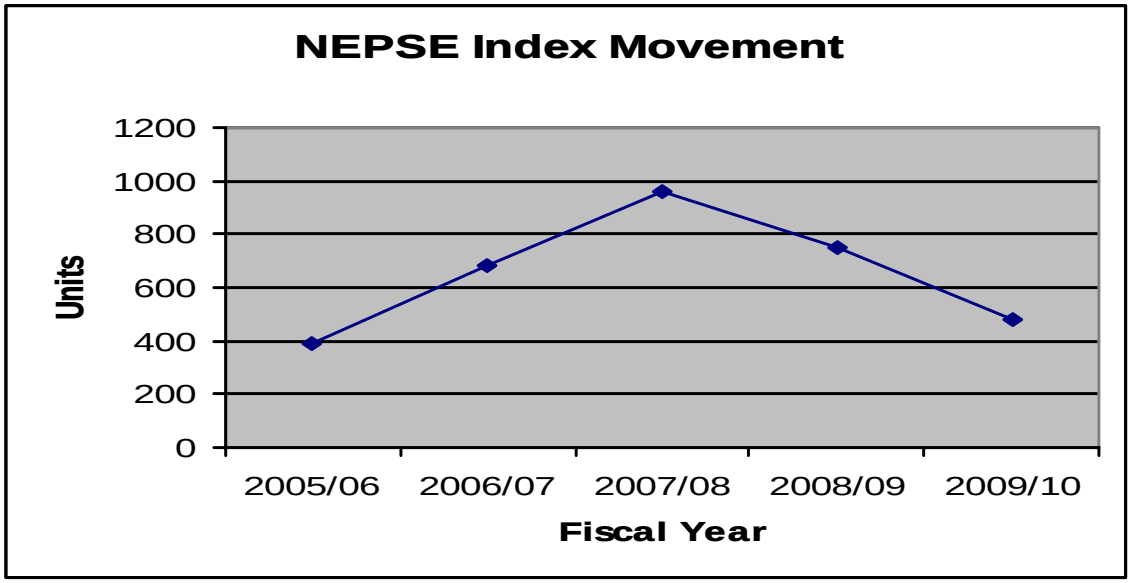
Standard Deviation (σ_m) $= \sqrt{\frac{(R_m\ Z \overline{R}_m)^2}{n\ Z1}} = \sqrt{\frac{0.8500}{4}} = \sqrt{0.2125} = 0.4610$

Coefficient of Variation (C.V.) = $\frac{\pm_m}{\overline{R}_m} = \frac{0.2125}{0.1480} = 1.4359$

Table 4.23 shows the return of market in several years. There is highest return of market in the year 2006/07 i.e. 0.7681 and there is negative return of market in the year 2008/09 and 2009/10 i.e. -0.2224 and -0.3623 respectively.

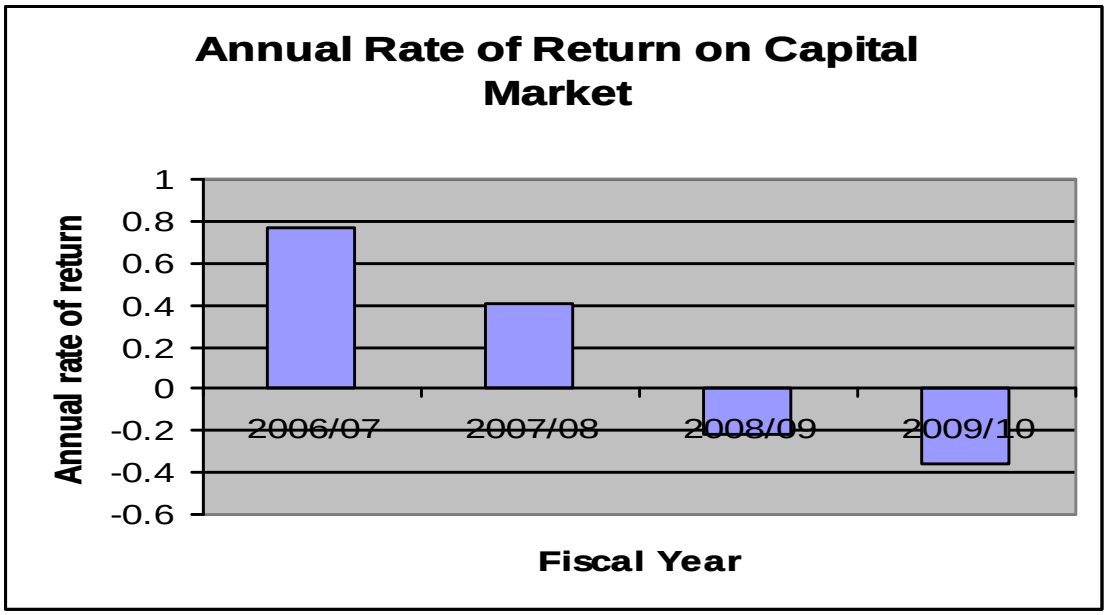
The expected return of the market is o.1480 with the total risk (measured by S.D.) of 0.4610. C.V. of market is 1.4359 which means, 1.4359 risks must be sacrificed to get per unit of market return.

Figure 4.23



The figure 4.22 shows that the movement of year end NEPSE Index. From position of the fiscal year 2005/06 it soared rapidly subsequent two year and reached its peak of 963.36 in year 2007/08.Then it began to plummet over the following two year and backed to 477.73 in year 2009/10. It seems that there is continuous loss on confidence of investor from year 2007/08 due to many political and economic reason.

Figure 4.24



From figure 4.23 shows that the market return is highest in year 2006/07 of 0.7681 and it decrease sharply and fall to 0.4085for the year 2007/08. Than for the following year 2008/09, it plummeted dramatically and felled to negative rate of return (loss) of 0.2224. For the subsequent year 2009/10, it again dropped and reached to -0.3623. Overall trend of market is downward.

4.4.2 Market Sensitivity Analysis

Market sensitivity of stock is explained by terms of beta coefficient. Beta coefficient can be use for an ordinal ranking of the systematic of asset. Higher the beta represents greater the sensitivity and higher the reaction to the market movement and vice-versa. Percentage of risk that is correlated with market is said to be systematic portion of the risk beta coefficient of systematic risk, which eliminated through the means of diversification.

Table 4.24

Beta Coefficient of Banks

Banks	Beta Coefficient	Remarks(Rank)
NABIL	1.8696	2nd
NIBL	1.2880	7th
HBL	0.9572	10th
SBI	1.3191	5th
EBL	1.2998	6th
BOK	1.1289	9th
KBL	1.4518	4th
SBL	1.6560	3rd
NIC	1.2711	8th
NMB	2.0664	1st

Here, as shown in the table 4.24, NMB and NABIL have largest beta coefficient than the beta coefficient of others. But there is only one bank which has lower beta coefficient than market, i.e. 0.9572. The stock of the rest 9 banks is aggressive and HBL has lower beta coefficient than market so it is a defensive stock. The stock of NMB seems most aggressive than other stocks where as HBL seems least aggressive.

4.4.3 Required Rate of Return [E (R_j)], Expected Rate of Return ($\overline{R}_j$) and Price Evaluation Analysis

CAPM is model that assumes stock's required rate of return is equal to the risk free rate plus its risk premium where risk is measured by the Beta Coefficient. Beta Coefficient plays a vital role in CAPM approach. If the required rate of return is greater than expected rate of return; the stock is said to be over priced and investors tend to sell this type of stock. For this analysis the risk free rate of return is needed which is taken from the interest rate of Treasury bill issued by NRB. NRB issued Treasury bill, 364 days duration Treasury bill yield is taken as a risk free rate from website of NRB. This is approximately 8.2% (calculations is in appendixes).

Table 4.25

Required Rate of Return, Expected Return and Price Evaluation

Banks	R_f (%)	$E(R_m)$ (%)	Beta (β_j)	$E(R_j)=R_f+[E(R_m)-R_f]\beta_j$ (%)	($\overline{R}_j$) (%)	Price Evaluation
NABIL	8.52	14.80	1.8696	20.26*	58.94	Underpriced
NIBL	8.52	14.80	1.2880	16.61	17.52	Underpriced
HBL	8.52	14.80	0.9572	14.53	29.56	Underpriced
SBI	8.52	14.80	1.3191	16.80	43.03	Underpriced
EBL	8.52	14.80	1.2998	16.68	44.22	Underpriced
BOK	8.52	14.80	1.1289	15.61	31.51	Underpriced
KBL	8.52	14.80	1.4518	17.64	29.83	Underpriced
SBL	8.52	14.80	1.6560	18.92	39.09	Underpriced
NIC	8.52	14.80	1.2711	16.50	30.10	Underpriced
NMB	8.52	14.80	2.0664	15.22	37.66	Underpriced

Where,

R_f = Risk free rate of return (8.52)

$E(R_m)$ = Market rate or return (14.80)

β_j = Beta of individual sample Banks.

$(\overline{R}_j)$ = Expected rate of return

In the table 4.25, we get the expected rate of return is higher than the required rate of return, so all commercial banks stock are underpriced. It shows that all the banks have stock with good investment opportunity and all the stocks in the demand. Their stock's value will be increased in the near future providing the investors higher return. Since all the stocks are underpriced, investor can gain profit from buying those stocks. These stocks are recommended to buy.

4.5 Portfolio Analysis

A portfolio is a combination of investment assets. Portfolio theory was proposed by Harry M. Markowitz which gives the concept of diversification of risk by investing total funds in more than a single asset or single stock. Markowitz diversification helps the investor to attain a higher level or expected utility than with any other risk

reduction technique. In a very simple way we can understand it as not keeping all the eggs in a single basket. The risk of individual securities can be reduced without losing considerable return. The main objective of portfolio is reduction of unsystematic risk from which investors can take more benefit by making efficient portfolio. Therefore a brief analysis of risk and return is extended in portfolio context. The portfolio expected return is straight forward weighted average of return on the individual securities. The weight is equal to the proportions of the total fund invested in each security (the weight must sum to 100%).

The Single Index Model

"The Markowitz Model was theoretically elegant and conceptually sound. However, its serious limitation was that it related each security to every other security in the portfolio, demanding the sophistication and volume of work well beyond the capacity of all but a few analysts. Consequently, its application remained severely limited until William F. Sharpe published a model simplifying the mathematical calculations required by the Markowitz Model.

Sharpe assumed that, for the sake of simplicity, the return on security could be regarded as being linearly related to a single index like the market index. Theoretically, the market index should consist of all the securities trading on the market. However, a popular average can be treated as a surrogate foe market index. Acceptance of the idea of a market index, Sharpe argued, would obviate the need for calculating thousands of covariances between individual securities, because any movements in securities could be attributed to movements in single underlying factor being measured by the market index. The simplification of the Markowitz Model has come to be known as the Market Model or Single- Index-Model (SIM).

4.5.1 Constructing the Optimal Portfolio

The desirability of any security is directly related to its excess return to beta ratio:

$(\overline{R}_i - R_{rf})/\beta_{im}$ where $\overline{R}_i$ is the expected return on security I, T is the return on a riskless assets, and β_{im} is the expected change in the rate of return on security I associated with a 1 percent change in the market return. If securities are ranked by excess return to

beta (from highest to lowest), the ranking represent the desirability of any security's inclusion in a portfolio. The number of securities selected depends on a unique cut-off rate such that all securities with higher ratio of ($\bar{R}_i$ -R_{rf}) will be included and all securities with lower rates excluded.

To determine which securities are included in the optimum portfolio, the following steps are necessary:

1. Claculate the "excess return to beta"ratio for each security under review and rank from highest to lowest.

2. The optimum portfolio consists of investing in all securities for which ($\bar{R}_i$ - R_{rf})/β_{im} is greater than a particular cut-off point C.

For a portfolio of I securities, C_i is given by:

$$Ci = \frac{\pm^2_m \sum_{i=1}^{i} \frac{(\bar{R}_i Z R_{rf})\ _{im}}{\pm^2_{ei}}}{1\Gamma\pm^2_m \sum_{i=1}^{i} \frac{^2_{im}}{\pm^2_{ei}}}$$

Where,

σ^2_m = variance of the market index

σ^2_{ei} = variance of a security's movement that is not associated with the movement of the market index, this is the security' unsystematic risk.

Data Needed to Find Optimal Portfolio **(R_{rf}=8.52%)**

Security i.	Expected Return $\bar{R}_i$	Excess Return ($\bar{R}_i$ -R_{rf})	Beta β_{im}	Unsystematic Risk σ^2_{ei}	Excess return over Beta ($\bar{R}_i$ -R_{rf})/β_{im}
EBL	44.22%	35.70	1.2998	1.34%	27.47%
NABIL	58.94	50.42	1.8696	19.42	26.97
SBI	43.03	34.51	1.3191	17.89	26.17
HBL	29.56	21.04	0.9572	16.87	21.98
BOK	31.51	22.99	1.1289	12.08	20.36
SBL	39.09	30.57	1.6560	3.97	18.46
NIC	30.10	21.58	1.2711	0.61	16.98
KBL	29.83	21.30	1.4518	5.88	14.67

NMB	37.66	29.14	2.0664	21.02	14.10
NIBL	17.52	9	1.2880	3.87	6.99

Calculation for determining Cut-off rate with σ^2_m=21.25

Bank	$(\bar{R}_i - R_{rf})/\beta_{im}$	$\frac{(\bar{R}_i - R_{rf}) \beta_{im}}{\sigma^2_{ei}}$	$\frac{\beta^2_{im}}{\sigma^2_{ei}}$	$\sum_{i=1}^{i} \frac{(\bar{R}_i - R_{rf}) \beta_{im}}{\sigma^2_{ei}}$	$\sum_{i=1}^{i} \frac{\beta^2_{im}}{\sigma^2_{ei}}$	C
EBL	27.47%	34.629	1.261	34.629	1.261	26.474
NABIL	26.97	4.854	0.180	39.483	1.441	26.533
SBI	26.17	2.545	0.097	42.028	1.538	26.515
HBL	21.98	1.194	0.054	43.222	1.592	26.370
BOK	20.36	1.685	0.106	44.907	1.698	25.741
SBL	18.46	12.752	0.691	57.659	2.388	23.680
NIC	16.98	44.968	2.649	102.627	5.037	20.186
KBL	14.67	5.259	0.359	107.886	5.400	19.823
NMB	14.10	2.865	0.203	110.751	5.599	19.617
NIBL	6.99	2.995	0.429	113.746	6.027	18.726

Putting all this information together yields:

$$Ci= \frac{\sigma^2_m \mid Column(5)}{1+\sigma^2_m \mid Column(6)} = \frac{21.25 \mid 34.629}{1+21.25 \mid 1.261} = 26.474$$

Proceeding in the same fashion, we can find all the Ci's.

Table 4.25 and 4.26 represent an example of the ranking procedure. Table 3 contains the data necessary to determine an optimal portfolio. It is the normal output generated from a single index model, plus the ratio of excess return to beta. There are ten securities in the tables. Selecting the optimal portfolio involves the comparisons of $(\bar{R}_i - R_{rf})/\beta_{im}$ with C.

The value of C is computed from the characteristics of all of the securities that belong in the optimal portfolio. To determine C, it is necessary to calculate its values as if there were different numbers of securities in the optimum portfolio. The value of C_i is calculated when i securities are assumed to belong to the optimal portfolio.

Since securities are ranked from highest excess return to beta to lowest, we know that if a particular security belongs in the optimal portfolio, all higher ranked securities also belong in the optimal portfolio. We proceed to calculate values of a variable C_i as if the second-ranked securities were in the optimal portfolio, then the first and second ranked securities were in the optimum portfolio, and so on. These C_i are candidate for C. We have found the optimum C_i, that is, C, when all securities used in the calculation for C_i have excess returns to beta above C_i. C_2 serves the role of a cut of rate. In particular, C_5 is the only C_i that when used as a cut-off rate selects only the securities used to construct it. There will always be one and one C_i with property and it is C_2.

All securities whose excess return-to-risk ratios are above the cut-off rate are selected and all those whose ratios are rejected. Examining Table 4.26 shows that for securities 1st and 2nd, $(\overline{R}_i - R_{rf})/\beta_{im}$ is greater than Ci, while for the other securities, it is greater than C. Hence, optimal portfolio consists of securities 1st and 2nd.

To construct optimum portfolio, the percent invested for each selected securities in the optimal portfolio is to be calculated. The percentage invested each security is:

$$X^0_i = \frac{Z_i}{\sum_{j=1}^{n} Z_i}$$

Where:

$$Z_i = \frac{\beta_{im}}{\pm \sigma^2_{ei}} \left(\frac{\overline{R}_i - R_{rf}}{\beta_{im}} - C_2 \right)$$

The second expression determines the relative investment in each security, and the first expression simply scales the weights on each security so that they sum to 1(ensure full investment). The residual variance on each security σ^2_{ei} plays an important role in determining how much to invest in each security. Applying this formula, we have:

$Z_1 = 1.261 \times (27.47-26.533) = 1.1815$

$Z_2 = 1.441 \times (26.97-26.533) = 0.6340$

$$\sum_{i=1}^{2} Z_i = 1.81554$$

Dividing each security Zi, we would invest 65.08 percent of our funds in security of EBL, 34.92 percent in security of NABIL.

The characteristics of a security that it is desirable can be determined before the calculations of and optimal portfolio is begun. The desirability of any security is solely a function of its excess return to beta ratio.

4.5.2 Portfolio of Stocks EBL (A) and NABIL (B)

As we know that the proportion of stock in the portfolio is constructed with 65.08% of EBL and 34.92% of NABIL common stock that will minimize risk and ideal portion. In above proportion, equity shareholder can minimize risk to get maximum return.

Portfolio Return

It is combination of two or more securities or assets and portfolio return is simply a weighted average of the expected return on individual stock return.

Expected Return on portfolio $E(R_p) = E(R_A) \times W_A + E(R_B) \times W_B$

$= 0.4422 \times 65.08 + 0.5894 \times 34.92$

$= 28.77784 + 20.5818$

$= 49.36\%$

Where,

$E(R_p)$ = Expected Return on Portfolio of stock

$E(R_A)$ = Expected Return on EBL

$E(R_B)$ =Expected Return on NABIL

W_A = Weight of EBL

W_B = Weight of EBL

Portfolio Risk

Portfolio risk is a function of the proportions invested in the common stocks. It is measured by standard deviation and calculated by using following formula.

$$\sigma_p = \sqrt{W^2_A \pm^2_A \Gamma W^2_B \pm^2_B \Gamma Cov_{AB} W_A W_B}$$

$= \sqrt{0.6508^2 \mid 0.3724 \Gamma 0.3492^2 \mid 0.9370 \Gamma 0.5649 \mid 0.6508 \mid 0.3492}$

$= \sqrt{0.40036}$

$=0.6327$

$=63.27\%$

Where,

σ_p = The standard deviation of portfolio return of stock

From the above calculation the portfolio return and risk are 0.4936 and 0.6327 respectively.

Coefficient of Variation (C.V.) = $\frac{\pm_p}{\overline{R}_p} = \frac{0.6327}{0.4936} = 1.2818$

Beta Coefficient (β_p) = $W_A . \beta_A + W_B . \beta_B$

= $0.6502 \times 1.2998 + 0.3498 \times 1.8696$

= 1.4991

Correlation between Banks

Two variables are correlated when they are related that the change in the value of one variable is accompanied by change in the value of other. Correlation may be positive or negative. If return on two securities is positively correlated than risk cannot be reduced.

Correlation coefficient measures the relationship between two variables in quantitative terms.Correlation coefficient indicated that the return from two securities generally move in the same direction and vice versa.

Now,

Correlation between NABIL and EBL

$\rho_{AB} = \frac{Cov(R_A, R_B)}{\pm_A \mid \pm_B}$

$= \frac{0.5649}{0.6102 \mid 0.9680}$

$= 0.9564$

4.6 Major Findings of the Study

This study enables investors to keep the returns they can expect and the risk they may take into better perspective. We know that Nepalese stock market is in effect of openness and liberalization in national economy. But Nepalese individual investors cannot analyze the securities as well as market properly because of the lack of information and poor knowledge about the analysis of securities for investment.

- The return is the income received on a stock investment, which is usually expressed in percentage. Expected portfolio return on common stock of EBL and NABIL is optimum i.e.49.36%.
- Risk is the variability of returns which is measured in terms of standard deviation. The expected portfolio risk between NABIL and EBL is 63.27%.
- C.V. is more Ratioal basis of invest decision, which measures the risk per unit of return. C.V. of the desired portfolio is 1.2818. It means investors will prone to bear 1.2818 unit of risk per unit of return.
- Beta coefficient explains the sensitivity or volatility of the stock with market. Higher the beta higher the volatility in the contest. Hence, beta for the portfolio is most volatile i.e. β= 1.4991 comparing market beta.
- Banks providing greater expected returns are NABIL (58.94%), EBL (44.22%), and SBI (43.03%) and lower expected returns are NIBL(17.52%), HBL(29.56%) and KBL(29.83%).
- On the basis of S.D., common stock of NMB is most risky since it has high S.D. i.e. 1.0572. And S.D. of NIC is least i.e.0.3494. On the basis of C. V., C.S. of EBL is best among all other banks. Because EBL has least as 0.8422 unit of risk per 1 unit of return. But C.V. of NMB has the highest risk per unit of return.
- Common stock of NMB is most volatile i.e.β=2.0664 and common stock of HBL is least volatile i.e. β=0.9572. The bank's stock, having the beta less than beta coefficient of market i.e. defensive stock. We find only HBL have defensive type of common stock. Among them most aggressive seems to be NMB with highest beta.

- NABIL is in the highest position (Rs. 23023.41 in million) and KBL is in lowest position (Rs. 5549.72 in million) according to their inter bank market capitalization comparison.
- One of the main significance of beta is in Capital Asset Pricing Model (CAPM). Comparison between expected rate of return and required rate of return identity whether the stock is overpriced or under price. If the required rate of return is greater than the expected rate of return the stock is overpriced and vice versa. This study shows that all the stocks of commercial banks, which are analyzed, are under priced. That means their stock value will increase in a near future. So, investor can buy the common stock of any bank.
- Systematic risk can not be diversified through creation of portfolio. It is occurred due to market factor. Unsystematic risk can be diversified through creation of portfolio. It is occurred due to internal management factor. This study shows that NMB has high proportion of unsystematic risk i.e. 21.02% which can be minimized from internal management. Where as NMB has high proportion of systematic risk also i.e.β=2.0664. This can not be minimized from internal management.
- Most of the investors invest only keeping the return in the mind but they are found unable to calculate the risk factors of the security. Most of the Nepalese private investors invest in single security. Some of the investors use their fund in two or more securities. But it is found that they don't make any analysis of portfolio before selecting security. They invest their fund in different securities on the basis of expectation and assumption of individual securities rather than analysis of the effect of portfolio. It seems that they don't have knowledge of the risk diversification by using portfolio of their investment.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

In this chapter, the effort has been made first to present summary of major findings and conclusion drawn from the analysis. Last step proceeds with the recommendation.

5.1 Summary

Central focus of finance is trade off between risk and return. Risk and return is getting, considerable attention in final management. And its major part stock market had greatest glamour, not only for the proportional or institutional investors but also for the individual or private investors. Development in the field of finance has led to the application of many new concepts and models to deal with various issues reported to financial management.

The relationship between risk and return is described by investor's perceptions about risk and their demand for compensation. No investors will like to invest in risky assets unless s/he is assured of adequate compensation for the acceptance of risk. Hence, risk plays a central role in the analysis of investment taking decision about proper investment decision process, analysis of securities, identification of overpriced, under priced securities making appropriate investment strategies as well as construction of efficient portfolio. Return, Risk and time are the elements of investment. It is the investor required risk premium that established a link between risk and return, in a market dominated by Ratioal investors, higher risk will command by Ratioal premium and the trade off between the two assumes a liner relationship between risk and risk premium.

Common stock is the most risky security and life blood of stock market. Because of higher expected return on investment in common stock of a corporate from neither ensures on annual return nor ensures the return of principal. Therefore investment in the common stock is very sensitive on the ground of risk. Dividend to common stockholder is paid only if the firm makes on operative profit after tax preference

dividend. Common stock has attracted more investors in Nepal. Rush in the primary market during the primary issue is one of the examples. But private investor plays a vital role in economic development of the nation by mobilizing the disposed capital in different from the society.

The main objective of the study is to analyze the risk and return in common stock investment of Nepalese stock market. The study is focused on reference to analyze the risk and return in common stock investment. While analyzing the risk and return, brief review of related studies has been performed. Scientific methods are used in data analysis. Tables, graphs and diagrams are used to present the data and results more clearly. Both quantitative and qualitative analysis have performed by using statistical tools as well as performed by using statistical tools as well as personal judgment. Secondary data are collected from the NEPSE, NRB, SEBON and other related banks and their websites. Other subjective types of information are collected through the officials of NRB, SEBON and NEPSE. Findings of analysis are summarized and conclusion is drawn as follows.

5.2 Conclusion

From the study it is concluded that all the commercial banks, which are under study, are very much risky with fluctuated rate of return. From the findings of the different banks beta coefficient of all the banks are very much volatile except HBL stock. The study shows that all commercial banks under study required rate of return is less than expected rate of return, so all stocks are underpriced. It shows that all the banks have stock with good investment opportunity. It is also concluded that portfolio of EBL and NABIL is optimal.

This study shows that BOK has high proportion of unsystematic risk i.e. 35.50% and NMB has high proportion of systematic risk (β) i.e. 2.0664% which can not be minimized from internal factor. Common stock of EBL is best among these banks.

5.3 Recommendations

Mainly this study is focused on individual investors. Other related components of stock are also taken into account to some extent. The following recommendation and suggestion are prescribed on the basis of data analysis and major findings of this research.

- Proper analysis of individual security is always essential to make possible to conquer the stock market. General knowledge about economic, political as well as technological trend will be advantageous. Which is performing better than before, sell share when the market is rising and buy share when market is falling and hold the share which will perform better than market.
- Different financial and statistical tools are to analyze the data in this study. C.V. suggests that while analyzing individual security EBL seems undoubtedly the best for investment with considering the full time horizon of the study. Hence, it is prescribed to select the C.S. of EBL for individual stock investment due to its lowest C.V.
- Investors need to diversify their fund to reduce risk. Proper construction of portfolio will reduce considerable potential loss which can be defined in terms of risk. But portfolio construction is dynamic job. For the portfolio construction select the stock that has higher return will not correlated or negatively correlated stock. So the construction of portfolio between the C.S. of EBL and NABIL is recommended to invest because they construct optimal portfolio.
- Analysis of personal risk, attitude, needs and requirements will be helpful before making an investment in stock market. Investors should make several discussions with stock holder before reaching at the decision. Investors should make their decision on the basis of reliable information rather than the imagination and amours.
- Investment club or broker firms are good way to exchange and share investment ideas. Mutual fund is worth while for people with little interest in investment. Investors are recommended to share experience, ideas and taking view of expert before investing in stocks of individual banks.

- NEPSE needs to initiate and to develop different programs for private investors such as investors meeting and seminars indifferent subjective matters like “Trading Rules and Regulation” etc
- Government needs to amend the rules and regulation regarding stock market in time to time and to make the policy that protects the individual investor’s right. And also need to follow up the implementation of rules and regulation and to make sure the objectives are achieved. On the regard, Nepal Government needs to monitor and to make active all the components of stock market properly. The government has to implement the rules and regulation strictly other wise it will be meaning less. The political problem of the country is another burning issue, which affects the economy of the nation adversely. So political leaders should think seriously on economic motive of country rather than their self motive.
- The corporate firm should disclose their actual financial condition so that insisted investors may analysis their performance and they only make a decision whether to invest on their stock or not. Value of assets and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.

BIBLIOGRAPHY

Books

Bhalla, V.K. (2001). *Investment Management.* New Delhi: S.Chanda and Company Ltd.

Bhalla, V.K. (1997). *Investment Management.* New Delhi: Prentice Hall of India.

Cheney, John M. and Moses, Edward A. (1996). *Fundamental of Investment.* St. Paul: West Publishing Company.

Fisher Donald E. and Jordar (1995). *Securities Analysis and Portfolio Management.* New Delhi: Prentice Hall of India Pvt. Ltd.

Francis, Jack Clark (1997). *Investment Analysis and Management.* New York: McGraw-Hill Publication.

Gittman and Joehnic (1985). *Fundamentals if Investing.* USA: Harper Collins.

Hampton, John J. (1996). *Financial Decision Making.* New Delhi: Prentice Hall of India Pvt. Ltd.

Loric, Jamesh, Dodd, Peter and Kimpton, Mary Hamilon (1985). *The Stock Market Theories and Evidence.* USA: Irwin Inc. Homewood: Prentice Hall of India Pvt. Ltd.

Madhura, Jeff (2001). *Financial Market and Institutions.* UK: South Western College Publishing.

Pradhan, Surendra (1992). *Basic Management.* Kathmandu: Kathmandu Educational Enterprises Pvt. Ltd.

Sharpet, Williiam F., Alexander Gordon J and Bailey Geffery V. (1995). *Investment.* USA: Prentice Hall of India.

Shrestha, Manohar Krishna (1993). *Securities Exchange Centre: Problem and Prospects.* Kathmandu: United Dynamic Research and Consultancy.

Van Horne, James C. (1997). *Financial Management and Policy.* New Delhi: Prentice Hall of India Pvt. Ltd.

Van Horne, James C. (1998). *Financial Management Policy.* New Delhi: Prentice Hall of India Pvt. Ltd.

Van Hornet, James C. and Wachowicz, Jr. John, M. (1995). *Fundamentals of Financial Management.* New Delhi: Prentice Hall of India Pvt. Ltd.

Weston J.F. and Brigham F.F. (1982). *Managerial Finance.* London: Hold-Saunders International Edition.

Journals, Reports and Articles

Elton, Edwin J. (1999). Expected Return, Realized Returns and Pricing tests. *The Journal of Finance.*

Everest Bank Limited. (2009/2010). *Annual Report.*

Ghimire, Atma Ram (2001). *Nepal Share Market and Investors Prospect.* Kathmandu: Business Age.

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Himalayan Bank Limited. (2009/2010). *Annual Report* .

Nepal Investment Bank Limited. (2009/2010). *Annual Report.*

Nepal Rastra Bank, Quarterly Economic Bulletin, Vol. 45, 15 Jan. 2010 to 15 July 2010. No. 3 and 4.

NEPSE (2009/2010). *Annual Trading Report*

Pokharel, Nawaraj (1999). Stock Market Doing Pretty Well. Kathmandu: *Business Age.*

Poudel, Narayan Prasad (2002). *Investing in Shares of Return and Risk Elements With Special References to Eight Commercial Banks.* Development Finance Department. Kathmandu: Nepal Rastra Bank.

Rouwenhost, K. Great (1999). Local Return Factors and The Turnover in Emerging Markets. *The Journal of Finance.*

Dissertations

Mishra, Shankar Kumar(2002). Risk and Return on Common Stock Investment of Commercial Banks in Nepal. An Unpublished Master Degree Thesis T.U. Kathmandu.

Manandhar, Manilita (2003). *Analysis of Risk and Return on Common Stock Investment of Commercial Banks in Nepal With Special Reference to Five Listed Commercial Banks in Nepal.* An Unpublished Master Degree Thesis T.U. Kathmandu.

Khadka, Ramhari (2004). *Analysis of Risk and Return on Selected Nepalese Commercial Banks Listed in NEPSE.* An Unpublished Master of Business Administration Thesis T.U. Kathmandu.

Manadhar, Surendra (2005). *A Study of Risk and Return Analysis on Common Stock Investment With Special Reference to Six Listed Commercial Banks.* An Unpublished Master Degree Thesis T.U. Kathmandu.

Manandhar, Sarmila (2005). *Risk, Return and Investment of Commercial Banks in Nepal With References to four Commercial Banks in Nepal.* An Unpublished Master Degree Thesis T.U. Kathmandu.

Websites

www.everestbank.com.np

www.google.com.

www.hbl.com.np

www.nepalsharemarket.com

www.nepalstock.com

www.nibl.com.np

www.nrb.com.org

www.nabilbank.com

www.nibl.com

www.himalayanbank.com

www.nepalsbi.com.np

www.bokltd.com

www.nicbank.com

www.kumaribank.com

www.siddharthabankltd.com

www.nmbcom.np

APPENDICES

As we know,

% of stock dividend = %DPS with bonus shares - % of cash DPS

Total Dividend in (Rs.) = Cash Dividend + % of Stock Dividend ×MPS

Appendix I

Calculation of Total dividend of NIBL

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	20	34.66	1025	375.27	01-11-2006	31-10-2006
2006/07	5	25	2005	506.25	30-10-2007	30-10-2007
2007/08	7.5	33.33	2100	707.43	27-08-2008	22-08-2008
2008/09	20	0	915	20	09-09-2009	09-09-2009
2009/10	25	0	615	25	29-09-2010	29-09-2010

Note: MPS are used of ex-dividend date or the following first transacted date.

Appendix II

Calculation of Total dividend of NABIL Bank Limited

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	85	0	2300	85	31-10-2006	27-10-2006
2006/07	100	40	5000	2100	23-09-2007	23-09-2007
2007/08	60	40	4000	1660	15-09-2008	14-09-2008
2008/09	35	50	2680	1375	27-12-2009	27-12-2009
2009/10	30	40	1350	570	28-09-2010	27-09-2010

Appendix III

Calculation of Total dividend of HBL

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	30	5	1303	95.15	15-12-2006	20-12-2006
2006/07	15	25	2800	715	10-12-2007	10-12-2007
2007/08	25	20	1520	329	11-09-2009	19-12-2008
2008/09	12	31.56	971	318.45	06-12-2009	06-12-2009
2009/10	11.84	25	755	200.59	22-12-2010	22-12-2010

Appendix IV

Calculation of Total dividend of SBI Bank Ltd.

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	5	0	690	5	05-03-2007	04-03-2007
2006/07	12.59	35	1000	362.59	05-02-2008	01-02-2008
2007/08	0	0	1252	0	07-12-2008	07-12-2008
2008/09	2.11	40.30	866	351.11	20-12-2009	20-12-2009
2009/10	5	12.50	606	80.75	28-12-2010	27-12-2010

Appendix V

Calculation of Total dividend of EBL

Fiscal Year	Cash Dividend%	%of stoc Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	25	0	1580	25	15-11-2006	15-11-2006
2006/07	10	30	2775	842.50	14-10-2007	12-10-2007
2007/08	20	30	2400	740	02-11-2008	02-11-2008
2008/09	30	30	2022	636.60	21-10-2009	16-10-2009
2009/10	30	30	1138	371.40	06-09-2010	05-09-2010

Appendix VI

Calculation of Total dividend of BOK Ltd.

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	18	30	1021	324.30	27-11-2006	27-11-2006
2006/07	20	0	2768	20	13-01-2008	12-01-2008
2007/08	2.11	40	1500	602.11	03-12-2008	03-12-2008
2008/09	7.37	40	1040	423.37	14-12-2009	11-12-2009
2009/10	15	15	570	100.50	14-09-2010	13-09-2010

Appendix VII

Calculation of Total dividend of KBL

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	1.05	20	675	136.05	22-02-2007	22-02-2007
2006/07	1.05	20	1300	261.05	08-01-2008	25-12-2007
2007/08	0.53	10	650	65.53	16-03-2009	16-03-2009
2008/09	0.55	10.03	580	58.72	01-11-2009	30-10-2009
2009/10	12	0	338	12	17-11-2010	17-11-2010

Appendix VIII

Calculation of Total dividend of SBL

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	0	0	540	0	01-12-2006	01-12-2006
2006/07	0.79	15	980	147.79	22-11-2007	22-11-2007
2007/08	0.79	15	820	123.79	23-12-2008	22-12-2008
2008/09	0.79	15	445	67.54	28-12-2009	27-12-2009
2009/10	8.42	0	305	8.42	02-02-2011	02-02-2011

Appendix IX

Calculation of Total dividend of NIC Bank Ltd.

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	0.53	10	518	52.33	07-11-2006	07-11-2006
2006/07	1.05	20	518	104.65	02-12-2007	02-12-2007
2007/08	1.05	20	979	196.85	02-12-2008	28-11-2008
2008/09	0.79	15	550	83.29	01-12-2009	29-11-2009
2009/10	26.32	0	580	26.32	18-11-2010	18-11-2010

Appendix X

Calculation of Total dividend of NMB

Fiscal Year	Cash Dividend%	%of stock Dividend	MPS Rs.	Total Dividend	MPS Date	Ex-div. Date
2005/06	0	24.29	485	117.81	25-12-2006	25-12-2006
2006/07	30	0	1000	30	21-01-2008	25-12-2007
2007/08	0	10.53	770	81.08	28-12-2008	28-12-2008
2008/09	0	0	316	0	23-12-2009	23-12-2009
2009/10	10	0.53	248	11.31	28-09-2010	26-09-2010

Calculation of risk free rate of return

Annual weighted average treasury bills rate (discount rate) = 7.85*

Again, annualized yield = $\frac{7.85}{92.15}$ = 8.52%

So, nominal risk free rate of return = 8.52%

Note: the rate is of the fiscal year 2009/10and only of 364 days treasury bills rate.

Calculation of required rate of return using SML

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

0.0852+ [0.148-0.0852] ×1.8696=0.2026
0.0852+ [0.148-0.0852] ×1.2880=0.1661
0.0852+ [0.148-0.0852] ×0.9572=0.1453
0.0852+ [0.148-0.0852] ×1.3191=0.1680
0.0852+ [0.148-0.0852] ×1.2998=0.1668
0.0852+ [0.148-0.0852] ×1.1289=0.1561
0.0852+ [0.148-0.0852] ×1.4518=0.1764
0.0852+ [0.148-0.0852] ×1.6560=0.1892
0.0852+ [0.148-0.0852] ×1.2711=0.1650
0.0852+ [0.148-0.0852] ×1.0664=0.1522