

# **CHAPTER – I**

## **INTRODUCTION**

### **1.1 General Background of the Study**

Financial sector development is an indicator of the state of economic development of the country, since an efficient well-developed financial market is only possible when there are substantial income generation and investment opportunities.

The Nepalese capital market had its beginnings with the establishment of the Securities Marketing Center in 1976. In 1984, the Securities Exchange Act was promulgated and this institution was converted into the Securities Exchange Center (SEC) under the ownership of the Nepali Government, Nepal Rastra Bank - the Central Bank - and the Nepal Industrial Development Corporation – a government owned industrial development bank. The main function of SEC was to assist in the development of a capital market by performing the role of a broker, underwriter and share issuer, and to sell government bonds. After the inception of the Securities Exchange Center, shares of various manufacturing, trading and banking companies became listed. Between 1984 and 1990, 42 companies were listed, out of which more than 25 companies had some form of government ownership.

The real boost into the capital market in the form of a private sector led growth began with the financial sector liberalization. In the mid-eighties, Nepal opened its doors to foreign investors as joint venture partners in the banking sector, which revolutionized commercial banking services in Nepal. Since then, a variety of private sector based financial institutions have evolved. In 1992, the Finance Companies Act was amended. These enabled finance companies to be established to function in various areas such as leasing, housing finance, and hire-purchase.

An equity investment generally refers to the buying and holding of shares of stock on a stock market by individuals and firms in anticipation of income from dividends and capital gains as the value of the stock rises. It may also refer to the acquisition of equity (ownership) participation in a private (unlisted) company or a startup company. When the investment is in infant companies, it is referred to as venture capital investing and is generally understood to be higher risk than investment in listed going-concern situations. 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 rupee 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 investment on 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, The researcher 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 return. 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.

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 nature of bank fund and its payment depends upon day to day operation. Therefore, its operation of fund raising 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 countries, of comparatively lower level of economic development. The shares of commercial banks in the net issues of all financial institution are much higher in such countries in the ones with higher stage of economic development.

In 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 company’s ability to service its debt burden are intimately related to the particular characteristics of the business. Moreover, they are affected by economic condition-apart management’s ability to generate satisfactory operating performance.

### **Brief Introduction of Sample Commercial Banks:**

#### **i. Nepal Investment Bank Ltd. (NIBL)**

NIBL, one of the leading commercial banks of the country, was earlier known as the Nepal Indosuez Bank Ltd. It was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital of NIBL), NIBL was a joint commercial enterprise between the credits Agricole Indosuez a subsidiary of one of the largest banking group in the world. The Head office of NIBL is located at Durbar Marg, Kathmandu, which remains open all round the year. It has 15 branches and 78 remittance centers across Nepal. 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 Agricole Indosuez in Nepal Indosuez Bank Ltd. The name of the bank has been changed to Nepal Investment Bank Ltd. upon approval of banks AGM, NRB and company Register's office with the following shareholding structure.

- A group of companies holding 50% of the capital.

- Rastriya Banijya Bank holding 15% of the capital.
- Rastriya Bima Sasthan holding 15% of the capital.
- The remaining 20% being held by the general public (this means that NIBL is a company listed on the Nepal Stock Exchange).

Now this bank is operating under the full ownership of Nepalese promoters and shareholders. Authorized, issued and paid up capital of Rs. 4,00,00,00,000, Rs. 2, 40, 90, 97,700, Rs. 2,40,90,97,700 respectively. Par value per share was Rs. 100. The bank was listed in the NEPSE at 16<sup>th</sup> July 2010. The central office of this organization is in Durbarmarg Kathmandu.

#### **ii. Himalayan Bank Ltd. (HBL)**

HBL was established in 1993 under the company act 1964 as a fourth joint venture bank of Nepal. It is a Joint Venture Bank with Habib Bank Limited of Pakistan, with the Bank's main objective to become the bank of first choice. The authorized, issued and paid of capital is Rs. 3,000,000,000.00, Rs. 1,600,000,000.00 and 1,600,000,000.00 respectively. The par value of per share is Rs. 100.00. The bank was listed in NEPSE in 16<sup>th</sup> July 2010. HBL has been able to maintain a lead in the primary banking activities- Loans and Deposits. HBL proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. HBL is the biggest inward remittance handling Bank in Nepal. Its ownership is composed of founder shareholders 51%, Habib bank of Pakistan 20%, Karmachari Sanchaya Kosh 14% and general public 15%. It is the first bank having domestic ownership more than 50%. Mr. Ashok Shamsheer JBR is the current Chief Executive Officer (CEO) of this bank. At present, the bank has thirteen branches inside Kathmandu valley and twenty branches outside the Kathmandu valley. The head office of HBL is situated at Thamel. The bank has a very aggressive plan of establishing more branches in different parts of the country in near future. Ownership of HBL is shown as Foreign Institutions 20%, Other Entities 65% and General public 30% (Annual report on 16<sup>th</sup> July 2010). The central office of this organization is in Thamel, Kathmandu.

#### **iii. Everest Bank Ltd. (EBL)**

EBL started its operation in 1994 with a view and objective of extending professionalized and efficient banking service to various segments of the country and society as well. The bank is

providing customer friendly service through a network of 28 branches. 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. It's authorized, issued and paid up capital is Rs. 1, 25, 00, 00,000, Rs. 1, 05, 00, 00,000 and 1,03,04,67,300 respectively. The par value per share is Rs. 100. It was listed on NEPSE in 16 July 2010. The central office of this organization is in Lazimpat.

## **1.2 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 Nepalese investors, they 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 somehow 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 with the help 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. 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 stocks they are holding give them favorable return?

### **1.3 Significance of the Study**

The study is beneficial for all the persons who are directly or indirectly related to the Nepalese capital market. This research has attempted to analyze the market share of samples companies with references to their financial indicators and risk in common stock investment, which may probably provide real pictures of samples 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 course 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.

### **1.4 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 are as follows;

- To analyze the common stock in terms of risk and return.
- To identify optimum portfolio of the selected commercial banks.
- To analyze the systematic (undiversifiable) and unsystematic (diversifiable) risk of the selected commercial 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;

- Data published from various sources differ from the figures published by NEPSE and respective commercial banks. However in this study respective banks published annual report data is 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 listed banks for the period of five years starting from fiscal year 2005/06-2009/10.
- Only secondary data are used for analysis.

## **1.6 Organization of the Study**

The study report has presented the systematic presentation of the research design, analysis, presentation and findings of the study. It is organized into five chapters as follows;

### **Chapter I – Introduction**

The first chapter is introduction chapter. It consists of general background, statement of problems, significance of the study, objectives of the study, limitation of the study, hypothesis of the study and organization of the study.

### **Chapter II – Review of Literature**

The second chapter deals with the review of literature, which consists of conceptual framework and review of relevant studies.

### **Chapter III – Research Methodology**

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 – Presentation and Analysis of Data**

This chapter contains presentation and analysis of data.

### **Chapter V – Summary, Conclusion and Recommendations**

The fifth chapter is associated with the summary, conclusion and recommendations. The bibliography and appendix have incorporated at the end of study.

## **CHAPTER – II**

### **REVIEW OF LITERATURE**

The review of literature is a crucial aspect of planning of the study. The purpose of reviewing the literature is to develop some expertise on one's area to see what new contribution can be made and to receive some ideas for developing a research design. The present study is simply the continuity in research design.

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 framework
- 2.2 Review of Related Empirical Studies

#### **2.1 Conceptual Framework**

The conceptual framework is the foundation on which the entire proposal is based. This study explores the theoretical aspects of the risk and return on investment from various popular related books. Analyzing the risk and return gives knowledge about the relationship between risk and associated return on any kind of investment. It also includes the review as well as background of commercial banks.

##### **2.1.1 Investment**

Investment is defined simply to be the sacrifice of current consumption for future consumption takes place at present with certainty and the investor expects desired level of wealth at the end of his investment horizon. The general principle is that the investment can be retired when cash is needed. 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 a commitment of funds made in the expectation of some positive rate or return. If the investment is properly undertaken the return will be continuing with the risk of the investor assumes. Return, risk and time are the elements of investment (Fisher and Jordan, 1995:104).

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. Therefore both saving and investment are interrelated. Investment is an exchange of financial claim of the stocks and bonds etc. Investment is the employment of funds with the aim of achieving additional income or growth in value. It involves the commitment of resources that have been saved for future. Investment involves long term commitment and waiting for a reward. Investments are often made indirectly through intermediaries such as banks, credit unions, brokers, lenders and insurance companies. Though their legal and procedural details differ, an intermediary generally makes an investment using money from many individuals, each of whom receives a claim on the intermediary.

### **2.1.2 Investment Process**

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 invest in, how extensive the investment should be, and when the investment should be made. Five step procedures for making decision forms the bases of investment process are;

- i. Set the investment policy
- ii. Perform security analysis
- iii. Construct a portfolio
- iv. Revise the portfolio
- v. Evaluate the performance of the portfolio

#### **i. 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.

## **ii. 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. This approach can be classified into two types;

- Technical analysis.
- Fundamental analysis.

## **iii. Construct a Portfolio**

Portfolio construction is the third step of investment process. 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.

## **iv. 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.

## **v. 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.

### **2.1.3 Common Stock**

The study is focused on the common stock investment that's why it is necessary to throw light 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. 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 shares.

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 (Van Horne, 1997:93). 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 par 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 par price they paid and the par value

In Nepal, as per the provision of Nepal Company Act 2063, has given flexibility to set a par value. A company can set a par value of Rs 50 each or any other higher amount divisible by the figure ten as provided in the memorandum of association and articles of association. 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 earnings. 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.

#### 2.1.4 The Return of Common Stock

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

It is surprising to realize that there have been no measurements of the rates of return on investment in common stocks that could be considered accurate and definitive. There have been many efforts, but each has been deficient in at least one crucial respect (Francis, 1992:384). Rates of return with at reinvestment of dividends varied from period to period above and below rates were similar. This merely reflects the fact that on the average, rates of appreciation in the price of stocks after the receipt of dividends were similar to rates before the receipts of dividends.

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 after analyzing relative frequencies of historical data, analysis for the outlook for the economy, the outlook for the industry, the outlook for the firm in its industry and other factors.

For common stock, one period (single period) is defined as return of a one-year holding period. The benefits associated with ownership include the cash dividend paid during the year together with an appreciation in market price, or capital gain, realized at the end of the year. Capital appreciation is the difference between investor's end-of-the period and beginning-of-the period. Thus, the realized or ex-post rate of return for single period is;

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

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 (Cheney & Moses, 1996:93).

The simple arithmetic means;

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

The Geometric mean

$$\bar{HPR}_g = \sum (1 + HPR_t)^{\frac{1}{n}} - 1$$

Where  $HPR_t$  is the individual period return,  $n$  is the number of period and  $\prod$  represents the product (or the result of multiplication).

### 2.1.5 The Risk of Common Stock

In the view of different investors define risk in different ways. 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 is used interchangeably with uncertainty to refer to the variability of expected returns associated with a given asset. Risk is the variability of possible returns around the expected returns of an investment. Each investor has his/her own attitudes towards risks and how much he/she can tolerate. Since, investment have risks associated with them, the investors must determine combination of alternatives matches that tradeoff the risk and compensation for percent risks (Basnet, 2006).

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 relationship 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 (Dodd & Kimpton, 1985:97).

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 & Brigham, 1982:105).

A major objective of the financial management is to increase the Financial Institutions' return for its owners. They often come however at the cost of increased risk. The effective management of this risk is central to a financial institutions' performance. Indeed, it can be argued that the main business of financial institution is to manage the risk for the purpose of maximization of return. So, financial institution manager must devote the significant time to understanding and managing the various risks to which their financial institutions are exposed.

### **2.1.6 Measure of Risk and Return**

Risk is defined in the Webster's dictionary as a hazard a peril: exposure to loss of injury. Thus, risk refers to chance that some unfavorable events may occur. If the investors bet on the horses, they are risking our money. If they invest in speculative stock, are taking a kind of risks in a hope of making appreciable returns. There are many ways to measure risk. The following three models are commonly used (Van Horne, 1998:83).

#### **i. 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, " $\beta$ " denotes it.

## **ii. 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 derived so that a high standard deviation represents a large dispersion of return and it involved high degree of risk, a low standard deviation is a small dispersion of return represents low degree of risk and vice versa. Mathematically, it is denoted by  $\sigma_j$ .

## **iii. 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 vary a great deal. With the overall definition of risk as dispersion of return, there are two components of risk may be identified.

### **➤ 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.

### **➤ 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 (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. The variability of return results interest risk. This interest rate risk affects the prices of bonds, stocks, real estate gold, puts, calls, futures contracts and other investment a swell.

➤ **Call – Ability Risk**

The some bonds and preferred stocks are issued with a call provision that allows a company may call back for 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. Call ability risk commands a risk premium that comes in the form of a slightly higher average rate of return. This additional return should increase as the risk that the issue will be called increase.

➤ **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 an executive earn princely salaries, occupy luxurious offices, and wields 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.

➤ **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.

➤ **Credit Risk**

Credit risk may be defined as the risk of losses due to credit events i.e. default (an obligor being un-willing or unable to repay its debt) or a change in the quality of the credit (rating change). Central banks may be exposed to at least two different sources of credit risk. The first is related to policy operations. Central banks lend to commercial banks, with the aim of controlling the short-term interest rate. The second source of credit risk is investment operations. Credit risk is only a minor component of create financial risks, in particular at lower confidence levels of common risk measures such as value at risk due to credit risk. It becomes more relevant when the confidence level is increased, but remains much smaller than exchange rate and gold price risks.

➤ **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 is a popular price index in the United States. The percentage change in the consumer price index is widely followed measure, of the rate of inflation.

### ➤ **Industry Risk**

An industry may be viewed as a group of companies that compete 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 labor union problems environmental restriction, raw materials availability and similar factors interact and affect all the firms in an industry simultaneously. As a result of these commonalities, the prices of the securities issued by competing firms tend to rise and fall together.

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

#### **2.1.7 The Risk on Common Stock**

Risk, in simple words, 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 knows the possible consequences of a decision and their relative likelihoods at the time he makes a decision. In other words, uncertainty is simply a lack of definite outcomes, 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 interpretations of uncertainty and risk, people often use them interchangeably. Although it is quite clear what precisely these two terms mean, authorities in the field of finance do agree that 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 known 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 measured 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 exceeds value-higher the probability of such loss or less return, higher the project risk (Pradhan, 1992:53).Assets having greater chances of less are viewed as move risky than those with lesser chances of less. 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.

### **2.1.8 Relationship between Risk and Return**

In the financial theory, risk and return have linear relationship, i.e. low risk is associated with low return and high risk consequently brings high return. According to the CAP models, firms have their position on the security market line (SML) and try to generate returns commensurate with their risk. The expected return from any investment proposal has been 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, 1996:67).

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 (Dodd & Kempton, 1985:97).

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.

### 2.1.9 Portfolio Risk and Return

The efficient frontier then contains all plausible combinations of portfolios that minimize systematic risk. They add the assumption of a riskless asset that can be borrowed and lent to derive equilibrium in which all investors are hold the market portfolio that lies on the security market line (SML). It is also assumed that for the relationship to hold, investors are risk averse and have homogenous expectations. 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.

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;

$$\bar{R}_p = \sum_{j=1}^n W_j \bar{R}_j$$

Where,

$\bar{R}_p$  = Expected return of a portfolio

$\bar{R}_j$  = 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  $\sigma_p$  is;

$$\sigma_p = \sqrt{\sum_{j=1}^n \sum_{k=1}^n W_j W_k \text{Cov}_{j,k}}$$

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.

$Cov_{jk}$  = 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 vary together rather than independently of each other. The covariance term in the above formula can be written as;

$$Cov_{jk} = r_{jk} \sigma_j \sigma_k$$

Where,

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

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

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

When  $j = k$ , the correlation coefficient is 1 as variance movement correlate 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 & Wachowicz, 1995: 97). The positive correlation coefficient shows that the return from the securities generally moves in the same 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.

### **2.1.10 Systematic Risk and Unsystematic Risk**

Systematic and unsystematic risks are the terms frequently used in the portfolio context. Systematic risk has its source factors that 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 breakthrough 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 & Wachowicz, 1995:91). The relationship among systematic, unsystematic and total risk are shown below;

Total risk ( $\sigma_j$ ) = Systematic Risk + Unsystematic Risk

Systematic Risk and unsystematic Risk can be written as;

Systematic Risk (SR)

$$SR = \frac{Cov_{jm}}{\sigma_m}$$

Where,

SR = Systematic Risk

$Cov_{jm}$  = Covariance of Stock j and Market Return

$\sigma_m$  = Standard Deviation of Market

Unsystematic Risk (USR)

$$USR = \sigma_j - \frac{Cov_{jm}}{\sigma_m}$$

$\sigma_j$  = Standard Deviation of Stock j

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

Where,

TR = Total Risk

Proportion of USR = 1 - Proportion of SR

### 2.1.11 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 1965,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, 1997:99).

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

$\beta_j$  = an index of systematic risk of stock j (beta coefficient)

If beta is one (i.e.  $\beta=1$ ) 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 proxy for general economic factor.

CAPM enables us to estimate one of the best known measures of risk in a diversified portfolio. Many investors are diversified. Thus, their expected return on a security should be positively related to its beta. CAPM provides a methodology that quantifies risk translating it into estimates of expected return on equity. 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 a 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.

Under the CAPM, each investor holds 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 a firm with publicly traded stock. The CAPM is based on the premise that the only important risk of firms is systematic risk, or the risk that returns from firms are exposed 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 a diversified portfolio (Madhura, 2001:55).

Investors appear to be concerned principally with risk that they cannot eliminate by diversification. If this is not so, we find that stock prices increase. 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 than the shares they hold. But we do not observe either phenomenon. Mergers undertaken 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 a simple way. That's why many financial managers find it is the most convenient for coming to a decision with a slippery motion of risk. And it is why economists often use the CAPM to demonstrate important ideas in finance even when there are other ways to prove the ideas.

### **2.1.12 Commercial Banks in Nepal**

Nepal is one of the least developed countries in the world. More than 80% of the total population are still in the rural areas and most of them are deprived of the minimum requirement of human livelihood. In Nepal, there are still 31% of the population under the line of poverty and the average life expectancy of Nepalese people is 62.20 years. Nepal has adopted a mixed and liberal economic policy with the implicit objective to help the state and the private sector. Especially after the restoration of democracy, the concept of liberalization policies has been incorporated as a directive principle and state policies. This liberalization has helped in establishing many companies, banks, finance companies and manufacturing industries. Thus, these establishments help the country for its development. Commercial banks are legally formed financial institutions, which accept deposits and make loans for commercial and non-commercial purposes.

The history of commercial banks is not very long for commercial and non-commercial purposes. The history of commercial banks is not very long. The growth of commercial banks in the last two decades has remained phenomenal, particularly in the financial sector's reformation in the 1990s. The concept of banking was formally executed after the establishment of the Nepal Bank Ltd. in 1994 B.S., the central bank named Nepal Rastra Bank Ltd. was established with the objective of supervising, guiding and protecting the functions of the banking sector. As a result, the growth of commercial banks in Nepal has been mushroomed. The number of banks has been increased as per the requirements under different acts like the Agriculture Development Bank under the Agriculture Development Act in 2024 B.S. Commercial banks under the Commercial Act in 2031 B.S. presently, there are twenty-three commercial banks with more than 450 branches over the national frontier operating in Nepal. The banking sector is the most vibrant part of the economy which has been playing a very vital role in

mobilizing the financial resources from the saver to users. It, in general, collects the idle funds from different savers and accumulated funds is further proceeds to the needy centers like households sectors, business sectors. It is the heart of trade, commerce and industry. It makes the smooth flow of funds in the circulation body of the economy. It makes various functions like assets and liabilities transformation, security trading, agency functions, and economies of scale, corporate social responsibilities, and other day to day banking functions. This study has been focused on the risk and return analysis of common stocks investment of the selected listed banks.

### **2.1.13 Risk and Return of Common Stock of Commercial Banks**

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 interchangeable with uncertainty to refer to the variability of expected returns associated with a given asset.

In reality, risk occurs when we cannot be certain about the possible future outcomes of particular activity or events. So, we are not sure that risk will occur in the future consequently. Risk results from the fact that the action such as investment can provide the more than one outcome in future.

The rate of return from capital investment is a concept that has different meaning to different investors. Some competitive seek near term cash inflow and give less value to more distant returns. Return can be expressed by cash dividend or capital gain or loss. Return is rewards for an investor from his or her organization. Investors always want to maximize expected return subject to their tolerance for risk. Return is motivating forces and it is the key method available to investors in capering investment alternatives.

### **2.1.14 Portfolio Return and Risk of Commercial Banks**

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

$$\text{Expected Return on portfolio } E(R_p) = W_i \times E(R_i) + W_j \times E(R_j)$$

Where,

$$E(R_p) = \text{Expected Return on Portfolio of stock Commercial Banks}$$

$$E(R_i) = \text{Expected Return of Commercial Banks (i)}$$

$E(R_j)$  = Expected Return of Commercial Banks (j)

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.

$$\sigma_p = \sqrt{W_i^2 \times \sigma_i^2 + W_j^2 \times \sigma_j^2 + 2Cov_{ij} \times W_i \times W_j}$$

Where,

$\sigma_p$  = The standard deviation of portfolio return of stock Commercial Banks

$W_i^2$  = Optimal weight to invest in stock of Commercial Banks (i)

$W_j^2$  = Optimal weight to invest in stock of Commercial Banks (j)

$\sigma_i^2$  = Variance or (S.D.) of Commercial Banks (i)

$\sigma_j^2$  = Variance or (S.D.) of Commercial Banks (j)

$Cov_{ij}$  = Covariance return of stock of Commercial Banks (ij)

$W_i$  = Weight of stock of Commercial Banks (i)

$W_j$  = Weight of stock of Commercial Banks (j)

In above proportion, equity shareholder can minimize risk to get maximum return. Commercial Banks are depended on portfolio return and risk for investment decision. Its return and risk are measured by standard deviation of portfolio of return and risk of stocks.

## 2.2 Review of Related Empirical Studies

Review of related empirical studies consists of the reviews of related articles, journals and thesis which, in fact, plays very important role for the preparation of this research study. The following are the review of related empirical studies;

### 2.2.1 Review of Related Articles and Journals

**Tamang (2003)** has studied the risk and return analysis of development bank in Nepal. The main objectives of the study is to determine whether the share of the development banks are correctly priced or not by analyzing the required rate of return using the capital asset pricing model also to measure the systematic and unsystematic risk of the development banks. In this study, the researcher has used mathematical tools i.e. market model, single period return, expected rate of return, standard deviation, coefficient of variation, beta coefficient (B). The period of the study has taken 9 years data from 2001-2010. The major finding of the study, the systematic risk of Nepal Arab bank has the highest unsystematic risk but total risk or

variance of Bangladesh is the highest i.e. 10 percent. From the study, it was also found that the shares of Nepalese commercial banks are heavily trade in NEPSE. None of the bank's shares price are correctly priced.

**Shrestha (1993)** wrote an article in the title of 'Shareholder's Democracy and Annual General meeting'. 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.

In many cases the existing authoritarian mentality of management seems to have not considered the share holders in deciding managerial plans and policies. 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 board of director to change their traditionally held activities towards shareholders. He has expressed his deep concern to the government for not taking my initiative formulation 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. The study quoted as writing company and other acts relating to financial and industrial sector have provisioned rights of the shareholders as;

- Voting rights
- Participation in general meeting
- Rights of getting information
- Electing as aboard of director
- Participating in the profit and less of the company
- Transferring share
- Priory representation.

The collective rights of the shareholders are;

- Amend the internal by laws
- Authorized the sales of assets
- Enter into merger
- 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.

**Pokharel (1999)** has published an article entitled “Stock Market Doing Pretty Well” in business age. In this article he has written 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, he concludes that the capital market needs more infrastructure investment than institution investment once the required infrastructure can facilitate the market, the size of the market could be made even bigger by introducing new instruments such as government bonds.

**Ghimire (June 2001)** has put his effort in the article entitled ‘Nepal share market and investors prospect’. In his article he pointed out some important trends of 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. One 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.

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 an article in the subject matter of finance. Almost no articles about the risk and return analysis on common stock investment are found. Hence some foreign well known recently published journals of finance has been reviewed here. However, it helps to build the conceptual framework on this topic.

**Elton (1999)** wrote an article entitled 'Expected Return, Realized Returns and Pricing Tests' in journal of finance. In that paper 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 a long history of resting 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 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.

There are periods longer than 50 years in which risk long term bonds on average underperform 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 an 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 stock market returns of higher than 30% per year while Asian Markets have negative returns.

**Rouwenhast (1999)** wrote an article entitled 'Local Return factors and Turnover in Emerging Markets' in journal of finance, published by American Finance Association. This article 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 having 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?

According to Rouwenhast, 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. Rouwenhast has 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 outperform 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 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 sectional correlated with turnover in emerging markets. This suggests that return premium do not simply reflect a compensation for liquidity.

**Berkowitz & Brien's (2002)** have focused on first direct evidence on the performance of value at risk model for trading firms. The result shows that VAR forecasts for six large commercial banks have exceeded nominal coverage levels over the past two years and for the some banks, VARs we substantially removed from the lower range of trading P & I. while such conservative estimates imply higher levels of capital coverage for trading risk, the reported VARs are less useful as a measure of actual portfolio risk.

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 has 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 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 vest 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 u trip, you won't break all the eggs. The creation of a portfolio by combining two assets that behave exactly the same 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.

**Hossain (2006)** examined those determinants of stock price and return movements of listed companies of Dhaka stock exchange (DSE). He used several factors like number of listed securities, number of initial public offerings EPS, DPS dividend payout ratio and also used some macroeconomic variables like gross domestic product (GDP), per capita income, savings, investment, export, import, foreign exchange reserve, inflation rate, money supply, consumption, deposit interest rate, advance interest rate as influential factors for determining the price of stock. He found a negative relation between dividend yield and the price of any stock.

**Kafle (1993)** says that Nepalese capital market got a proper structure only in the year 1993. In this year securities board was established as regulator and stock trading commercial through the member brokers adopting open outcry auction system. Stock exchange in its usual role was then expected to develop as a powerful mechanism to mobilize savings for long term investments. Stock market has grown in the past decade but not to an extent desired. It is still in an early stage and has to grow significantly to play a more meaningful role in the banking dominated financial system.

**Mahat (1981)** pointed that Nepalese stock market is still in infancy stage and some drawbacks to the development of stock markets are strong historical and social reasons as well as mass poverty and illiteracy in Nepalese society. Some conscious and educated people of urban areas are also not investing in the industrial sector instead they are investing on the real estate especially in building construction.

**Rahman & Rahman (2008)** concluded that ex-dividend price increased instead of dropped in DSE that implies a clear preference for capital gains without having any focus of dividends by the stockholders.

The research interest on the issue has been recently reviewed, attracting more attention in the empirical literature producing a new wave of further evidence for a significant negative relationship between bank stock returns and interest rate changes (Elyasiani & Mansur, 1998). However, Allen & Jagtiani, (1997) and Benink & Wolff, (2000) conclude that interest

rate sensitivity has decreased in the late 1980's and early 1990's due to the availability of interest rate derivatives contracts that can be used for hedging purposes. Presley, (1992) concluded that there is a need for greater risk management in relation to more effective portfolio management, and this requires a greater emphasis upon the nature of risk and return in bank asset structure, and greater diversification of assets in order to spread and reduce the bank's risks.

### **2.2.2 Review of Related Thesis**

**Poudel (2001)** carried out his 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.

The major findings of his study are as follows;

- Most of the individual share's appeared to be defensive as beta coefficients were less than one. 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 was under priced.

**Mishra (2002)** analyzed his study in the topic "*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.

The major findings of his study are as follows;

- There is a positive correlation between risk and return character of all five banks.
- Expected return of SBL is maximum (53%). Similarly expected return of NABIL, EBL, SBI and BOK are 48%, 40%, 49% and 49% respectively.
- The beta coefficient of SBI has higher i.e. 1.093 that means the beta measured that risk with the market is lower beta for the bank of BOK is -1.629.
- Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing market.

**Manandhar (2003)** carried out her study in the topic “*Analysis of Risk and Return on Common Stock Investment of Commercial Banks in Nepal*” 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 fiscal year 057/058 in terms of market capitalization and turnover expected return of the common stock of BOK 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 BOK is most risky and Capital Structure is least risky. The major findings of her study are as follows;

- 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.

**Sharma (2004)** conducted a study on “*Portfolio Management of listed commercial banks and insurance companies in Nepal*”. The main objective of his study was to analyze the risk and return of the common stock of commercial banks and Insurance companies. He has also

analyzed the diversifiable and undiversifiable risk of common stock as well as portfolio return and risk.

The major findings of his study are as follows;

- Based on risk and return, the shares of all the commercial banks are attractive for investment compared to Insurance Companies.
- The conflicting political and economic scenario has the adverse impact on economic activities of the companies. Therefore, Insurance Companies are unable to effectively magnets portfolio.
- The researcher realized that the risk per unit of return of market is very high. So the overall market return can be regarded as attractive with respect to its risk.
- Unsystematic risk of all the companies was high in comparison to total risk.

**Manandhar (2005)** carried out his study in a topic “*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.

The major findings of his 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 common stock 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 common stock 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; common stock of NIBL is the best among all banks. NIBL has 1.4977 unit of risk per 1 unit of return. But common stock 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 common stock 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.

**Shakya (2009)** carried out her study in the topic “*Risk and Return Analysis of the Commercial Banks with reference to six commercial banks*”. The major objectives of this study was to study the risk and return of the sampled commercial banks ( 6 out of 27 banks) and also analyze their coefficient of variance, to perform the comparative analysis of the risk and return on the common stocks of the selected banks, to find out how sensitive the stock price of the selected commercial banks and the banking sector as a whole with that of the NEPSE, to provide the valuable suggestions about the risk and returns on stocks of the commercial banks that could be the deciding factors for the investors in their investment. The major findings of her study are as follows;

- Expected return on common stock of NABIL is maximum (56.7%). Similarly expected return of NIBL, SCBL, HBL, EBL and BOK are 37.9%, 28.26%, 29.52%, 52.79% and 37.1% respectively.
- On the basis of standard deviation, common stock of NABIL is most risky since it has high S.D i.e. 0.91. Common stock of SCBL has least risk because of its low S.D of 0.33.
- On the basis of CV, common stock of EBL is best among all other banks. EBL has 1.04 unit of risk per 1 unit of return. But common stock of BOK has the highest risk per unit of return.

**Marahatha (2010)** analyzed his study in a topic “*Risk and Return Analysis of Listed Commercial Banks of Nepal with references to five commercial banks*”. The major objective of the study was to see the position of risk and return of the sampled commercial banks and also analyze their coefficient of variance, to see how sensitive the stock prices of the selected

commercial banks are.

The major findings of his study are as follows;

- Expected return of SBL is maximum (55%). Similarly expected return of NABIL, EBL, SBI and BOK are 48% 40% 49% and 49%.
- On the basis of CV common stock of BOK is best among all other banks.
- The beta coefficient of SBI has higher i.e. 1.083 that means the beta measured that risk with the market is lower beta for the bank of BOK is -1.729.

### **2.2.3 Research Gap**

Although some previous MBS students have conducted their thesis in the similar topic the present researcher has selected, there is fundamental difference between those and this present one. The previous researcher focused only on the risk and return aspect of selected commercial banks from investors perspectives. This research has further tried to identify the correlation among returns of the commercial banks under study which plays a significant role in risk reduction by portfolio construction and systematic and unsystematic risk has been identified for each bank which is not done by previous researchers. This research has been conducted with reference to three sample firms which give the clear vision for all the investors who invest in common stock investment of commercial banks listed in NEPSE. However, almost effort has been put upon to save it from allegation of being copy of previous research works done in the similar topic.

## **CHAPTER – III**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research methodology is the systematic way of solving research problems and which ultimately refer to the overall research process. It includes the entire 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 thought 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**

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 and testing of hypothesis has also been used for analysis aspect. The samples of the study are three commercial banks Nepal Investment Bank limited (NIBL), Himalayan Bank Limited (HBL) and Everest Bank Limited (EBL).

#### **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 has been collected from individual banks, Security Board of Nepal (SEBON) and from their web sites.

The collection procedure is summarized below;

- Financial document and summary sheets provided by companies.
- Trading manual published by Nepal Stock Exchange Limited.
- Related Websites
- Materials published in Newspapers and Magazines.

- Other related journals, periodicals and books.
- Central library T.U., Shaker Dev Campus library.

### **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. Concentration of this study is listed commercial banks only. There are a total of 31 commercial banks registered under Nepal Rastra Bank. For this, study three commercial banks Nepal Investment Bank Limited (NIBL), Himalayan Bank Limited (HBL) and Everest Bank limited (EBL) are taken as sample.

### **3.5 Variables and Methods of Analysis**

The study employs various financial tools and statistical tools to analyze the data collected from various sources. Before, analysis, data is 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 Variables for Analysis**

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

##### **i. Market Price of Share (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 duration 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. The value of the stock closing price is used as market price of stock because it is very difficult to obtain and include these all information and average of high and low price may not be reliable and representative information.

##### **ii. 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:

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

Dividend is relevant during computation of rate of return, which is reward to the shareholders for their investment, which can be given in different form. 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 gained. 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 throughout.

Total dividend amount = Cash Dividend + Stock Dividend % Next Year MPS.

### 3.5.2 Financial Tools

The various financial tools used are as follows;

#### i. 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

#### ii. Expected Rate of Return

One of the main aims of the study is to determine the expected return on the investment is common stock. Expected rate or return is the arithmetic mean of the past years return.

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

Where,

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

n = Number of years that the return is taken.

$\sum$  = sign of summation.

### iii. 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 ( $\sigma$ ) sigma. It is the measure the total risk on stock investment.

Where,

$$\text{Standard Deviation } (\sigma_j) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n - 1}}$$

$$\sigma_j = \sqrt{\sum_{t=1}^n [R_j - E(R_j)]^2 P_j}$$

Where,

$\sigma_j$  = 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.

### iv. Coefficient of Variation (C.V.)

It 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, higher the coefficient of variation, higher the risk.

$$\text{Coefficient of Variation (C.V.)} = \frac{\dagger_j}{\bar{R}_j}$$

C.V. = Coefficient of variation of stock.

$\dagger_j$  = Standard deviation of return on stock j.

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

#### v. Beta Coefficient ( $S$ )

Beta coefficient shows the market sensitivity of stock. It refers higher the beta, higher 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.

$$S_m = \frac{\text{Cov}R_m, R_j}{\dagger_m^2}$$

$$\text{Cov}(R_m, R_j) = \frac{\sum \left[ (R_m - \bar{R}_m)(R_j - \bar{R}_j) \right]}{n - 1}$$

Where,

$S_j$  = Beta coefficient of stock j

$\text{Cov}(R_j, R_m)$  = Covariance between return on stock j and return on market.

$\dagger_m^2$  = Variance of market return.

If Beta Coefficient ( )	Stocks Classification	Degree of Risk
Exactly 1	Average Stock	Equally risky as the market
Greater than 1	Aggressive Stock	More risky than the market
Less than 1	Defensive Stock	Less risky than the market

#### vi. 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.

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

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

Where,

$\sigma_i$  And  $\sigma_j$  are the standard deviations of returns for assets i and j and  $\rho_{ij}$  is correlation Coefficient for asset i and j. there are various cases of correlation and risk condition which are presented below;

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

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.

➤ **Perfectly Negative Correlation ( $\rho_{ij} = -1$ )**

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.

➤ **No Relation between Return ( $\rho_{ij} = 0$ )**

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.

➤ **Intermediate Risk ( $\rho_{ij} = +0.5$ )**

Most 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.

**vii. Return on Market (Rm)**

It is the percentage increase in NEPSE index. Market return is the average return of the

market as a whole.

$$R_m = \frac{\sum R_m}{n}$$

Where,

$\sum$  = sign of summation.

Rm = Market return

n = Number of samples period

### viii. 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.

#### ➤ 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.

$$E(R_p) = W_i \times E(R_i) + W_j \times E(R_j)$$

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;

$$\sigma_p = \sqrt{\sigma_i^2 W_i^2 + \sigma_j^2 W_j^2 + 2W_i W_j Cov(R_i, R_j)}$$

Where,

$\sigma_{ij}$  = Standard deviation of stock i & j

$W_i$  = Proportion of asset i

$W_j$  = Proportion of assets j

$\sigma_i^2$  = Variance of assets i

$\sigma_j^2$  = Variance of assets j

$Cov(R_i, R_j)$  = Covariance between the return of assets i & j

### ix. Portfolio Beta

The beta of portfolio can be easily estimated by using beta of individual assets it includes symbolically, it is represented by;

$$\text{Portfolio beta } S_p = \sum_{j=1}^n W_j S_j$$

Where,

$W_j$  = proportion of the portfolio

$S_j$  = beta coefficient of asset j

$S_p$  = portfolio beta coefficient

### x. Risk Minimizing Portfolio

It is the ratio of stock that will minimize the possible unsystematic risk. The risk minimizing portfolio is calculated by using following formula.

$$W_A = \frac{\sigma_B^2 - Cov(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - Cov(R_A, R_B)}$$

$$W_B = 1 - W_A$$

Where,

$W_A$  = Weight of proportion of stock A that minimize the portfolio risk.

$$W_A + W_B = 1$$

### xi. 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 sale. 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

$\beta_j$  = An index of systematic risk of stock j (beta coefficient)

### 3.5.3 Statistical Tools

The statistical tools used are as follows;

#### ➤ Test of Hypothesis (T-test)

All the companies listed in the NEPSE index are population of this study, which in other words can be said market. The sample is the selected companies. At the sample for the study is less than 30, t-test is the study is less than 30, t-test is the best way for testing the hypothesis.

#### Testing of Hypothesis (I)

The first hypothesis is based on the test of significance for difference of mean (t-test)

#### Null Hypothesis (H<sub>0</sub>)

$\bar{R}_j = \bar{R}_m$ , i.e. there is no significant difference between the expected return of selected banks and overall market return.

#### Alternative Hypothesis (H<sub>1</sub>)

$\bar{R}_j \neq \bar{R}_m$  i.e.; there is significant difference between the expected return of selected banks and overall market return.

Under the H<sub>0</sub>

The test statistics (t) is 
$$t = \frac{\bar{R}_j - \bar{R}_m}{\sqrt{S^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$\bar{R}_j$  = Expected Return of common stock of selected banks

$\bar{R}_m$  = Expected Return of market

$n_1 = n_2 =$  Numbers of years in Sample

$S^2 =$  Estimated variance of population

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$$

$S_1^2 =$  Variance of common stock of selected banks

$S_2^2 =$  Variance of market return

Test result: If t calculated value is less or equal to tabulated value, the null hypothesis is accepted and vice versa.

## CHAPTER - IV

### DATA PRESENTATION AND ANALYSIS

This chapter includes analysis of data collection and their presentation. In this chapter the effort has been made to analyze ‘Risk and Return on Common Stock Investment in Commercial Banks’. Detail data of MPS, EPS, P/E ratio and dividend of each bank and NEPSE index and their interpretation and analysis is done with reference to the various reading and literature review in the preceding chapter. 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

##### 4.1.1 Analysis of Dividend of Nepal Investment Bank Ltd. (NIBL)

The following table shows the cash dividend, stock dividend and total dividend of NIBL.

**Table 4.1**  
**Cash Dividend, Stock Dividend and Total Dividend of NIBL**

<b>Fiscal Year</b>	<b>Cash Dividend (%)</b>	<b>Stock Dividend (%)</b>	<b>Total Dividend (%)</b>
2005/06	20	35.46	55.46
2006/07	5	25	30
2007/08	7.5	33.33	40.83
2008/09	20	0	20
2009/10	25	0	25
Average	15.5	18.75	34.25

Source: AGM Report of NIBL

Table 4.1 reveals that the dividend of NIBL is not in straight trend. It is highly fluctuating in each year. Similarly the cash dividend and stock dividend is also fluctuating within study period. NIBL is not paying stock dividend every year. In the year 2005/06, 2006/07 and 2007/08 it is paying both cash and stock dividend. Highest total dividend is paid in the year 2005/06. In the year 2008/09 and 2009/10 the bank has not paid the stock dividend. That means bank is not interested to raise the capital fund. Average total dividend of NIBL during the five year is 34.25%.where average cash and average stock dividend is 15.5% &18.75

respectively.

**Figure 4.1**  
**Cash Dividend, Stock Dividend and Total Dividend of NIBL**

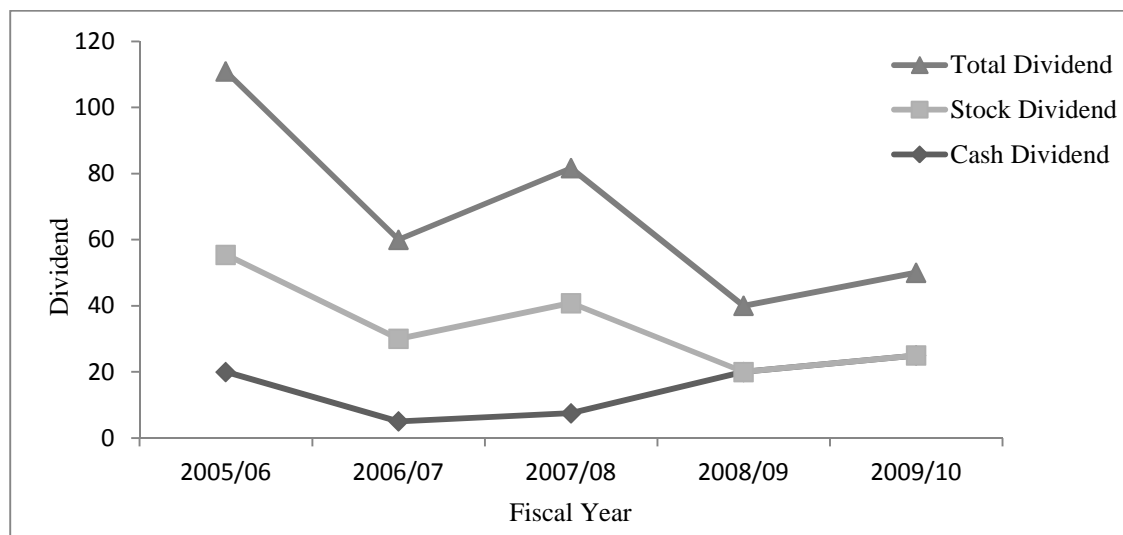


Figure 4.1 shows the trend line of cash dividend, stock dividend and total dividend for different years of NIBL. In fiscal year 2005/06, 2006/07 and 2007/08 the bank pays the cash and stock dividend. But in the year 2008/09 and 2009/10, the bank has not distributed the stock dividend.

#### 4.1.2 Analysis of Market Price of Share, P/E Ratio & EPS of NIBL

The following table shows market price of share, P/E Ratio & EPS of NIBL.

**Table 4.2**  
**Market Price of Share, P/E Ratio & EPS of NIBL**

Fiscal Year	Closing MPS	P/E Ratio	EPS (Rs)
2005/06	1260	21.23	59.35
2006/07	1729	27.63	62.57
2007/08	2450	42.33	57.87
2008/09	1388	37.1	37.42
2009/10	705	13.42	52.55
Average	1506.4	28.34	53.95

Source: AGM Report of NIBL

From the table 4.1, it reveals that P/E ratio of NIBL is maximum in the year 2007/08 i.e.

42.33 and minimum in the year 2009/10 i.e. 13.42. The higher risk, the higher the discount factor and the lower the P/E ratio. The higher the growth rates of the bank, the higher the P/E ratio. The MPS of NIBL is maximum of Rs. 2450 in the year 2007/08 and minimum of Rs. 705 in the year 2009/10. Due to the recession in share market of Nepal from the year 2008/09, the market price of the share is in decreasing trend. The income per common share can be known from the earning per share, which is highest Rs 62.57 in the year 2006/07 and lowest in the year 2008/09 is Rs37.42. The more per share return, the more excellent it is and the less per share return, the worse it is. Average market price of the NIBL during the five year is 1506.4 and average P/E Ratio and average EPS is 28.34 & Rs53.95 respectively.

**Figure 4.2**

**Price Movement of the Common Stock of NIBL**

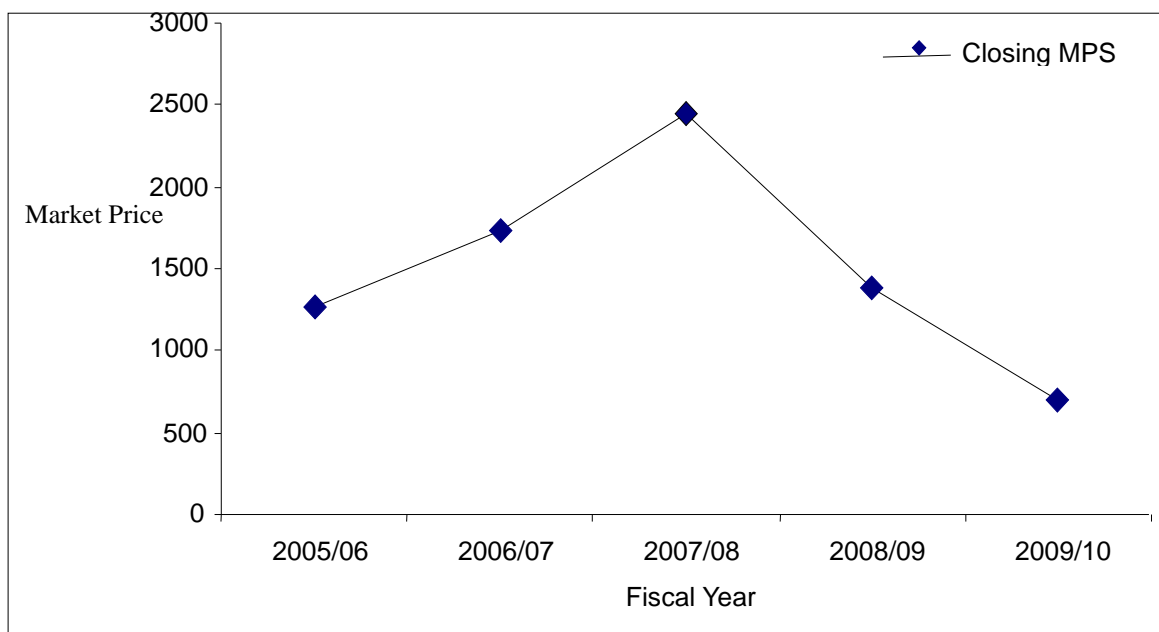


Figure 4.2 shows the trend line of market price in several year of NIBL. It can be seen that there is fluctuation of market price from year 2005/06 to till 2009/10, and the trend line shows the rapid growth from 2005/06 to 2007/08 and decline thereafter. Similarly, there is minimum price in the year 2009/10 i.e. Rs. 705 and maximum in the year 2007/08 i.e. Rs. 2450. Due to the global economic recession, Nepal's share market index is in decreasing trend. So the market price of the stock is very low from 2008/09.

**Figure 4.3**  
**P/E Ratio and EPS of NIBL**

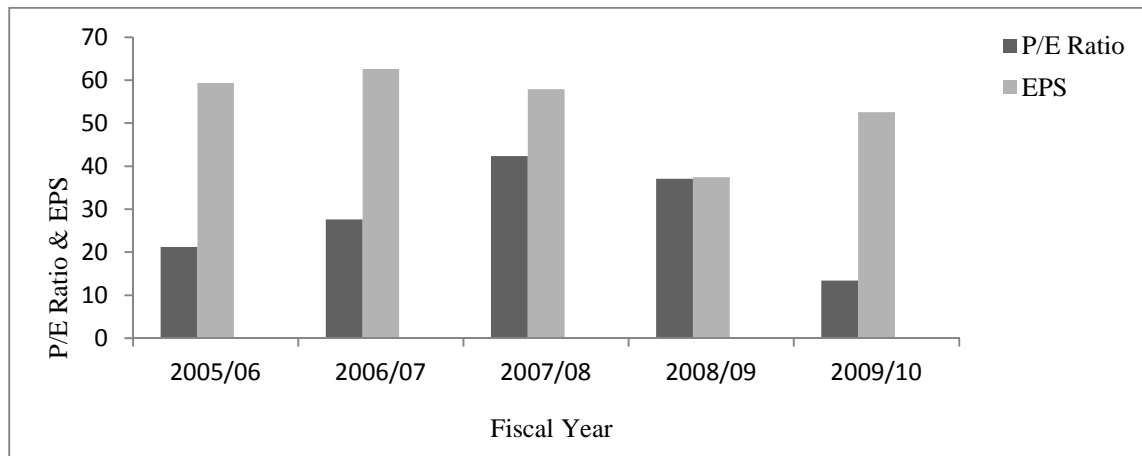


Figure 4.3 shows the bar diagram of P/E ratio and EPS of NIBL for different fiscal year. P/E ratio of the bank is in increasing trend from fiscal year 2005/06 to 2007/08. The lowest P/E ratio is in the year 2009/10. EPS of the bank is more than Rs 50 in different year except the year 2008/09. The figure reveals that NIBL is paying excellent return to their shareholders.

#### 4.1.3 Risk and Return of Common Stock of NIBL

The following table shows annual return, expected return, standard deviation and coefficient of variation of common stock of NIBL.

**Table 4.3**  
**Expected Return, S.D. and C.V. of Common Stock of NIBL**

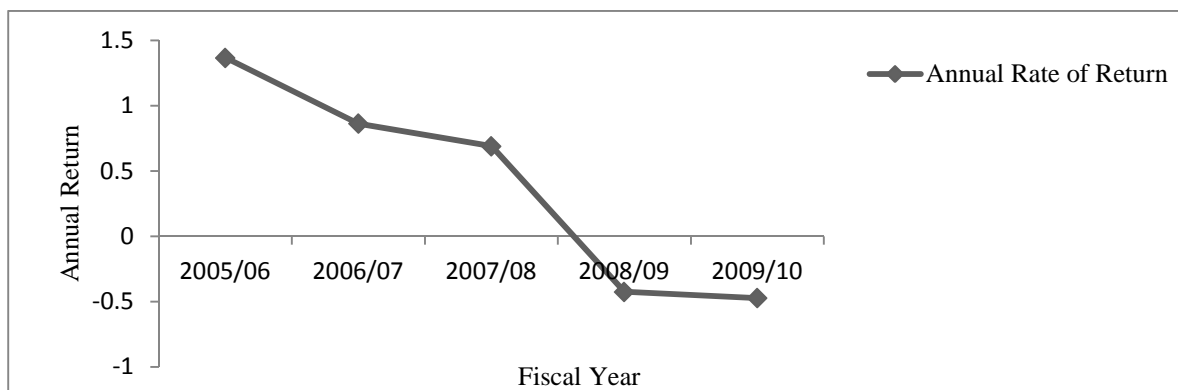
Fiscal Year	Closing MPS	Total Dividend	Annual Rate of Return $R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2005/06	1260	633.10	1.3664	0.9627	0.9269
2006/07	1729	617.5	0.8623	0.4586	0.2104
2007/08	2450	470.12	0.6889	0.2852	0.0814
2008/09	1388	20	-0.4253	-0.8289	0.6872
2009/10	705	25	-0.474	-0.8777	0.6762
			$\sum R_j = 2.0183$		$\sum (R_j - \bar{R}_j)^2 = 2.6762$

Source: Appendix I and annual report of NIBL

**Note: Closing MPS of NIBL for 2004/05 is Rs 800**

Expected return of NIBL is 0.40366 with the total risk (measured by S.D.) of 0.8179. The C.V. of NIBL is 2.0263 which denote that to get per unit return 2.0263 risk must be sacrifice. So, higher the C.V. higher will be the risk.

**Figure 4.4**  
**Annual Rate of Return of Common Stock of NIBL**



The Figure 4.4 shows the annual rate of return of common stock of NIBL in different years. The rate of return is maximum on 2005/06 i.e. 1.3664 which shows highest return profitable while the return is negative in the year 2008/09 and 2009/10 i.e. -0.4253 and -0.474 respectively.

#### 4.1.4 Analysis of Dividend of Himalayan Bank Ltd. (HBL)

The following table shows Cash dividend, stock dividend and total dividend of HBL.

**Table 4.4**  
**Cash Dividend, Stock Dividend & Total Dividend of HBL**

Fiscal Year	Cash Dividend (%)	Stock Dividend (%)	Total Dividend (%)
2005/06	30	5	35
2006/07	15	25	40
2007/08	25	20	45
2008/09	12	31.56	43.56
2009/10	11.84	25	36.84
Average	18.76	21.31	40.08

Source: AGM Report of HBL

Table 4.4 shows that HBL is paying cash and stock dividend every year. Highest total

dividend is paid in the year 2008/09 i.e. 43.56% however lowest is in the year 2005/06 i.e. 35%. It shows that the bank has maintained retained earnings for increment of capital fund in future. Average total dividend of HBL during the five year is 40.08%. In the same way, average cash and average stock dividend are 18.76% & 21.31% respectively.

**Figure 4.5**  
**Cash Dividend, Stock Dividend and Total Dividend of HBL**

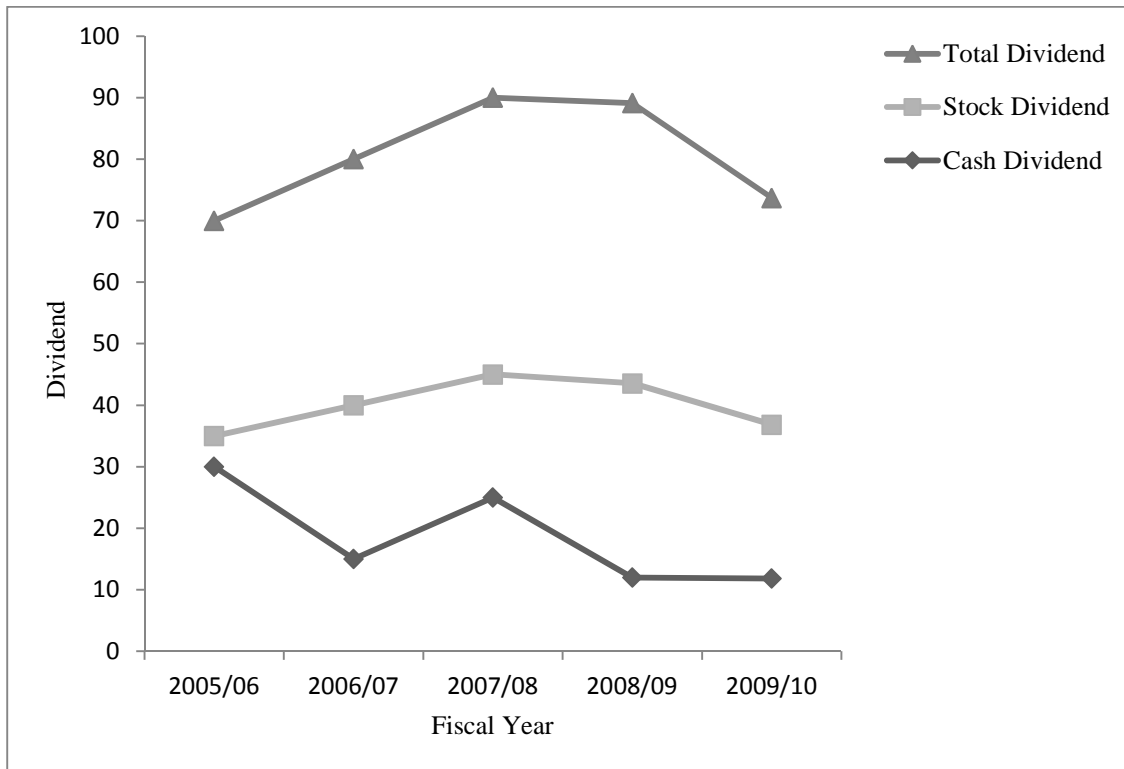


Figure 4.5 shows the trend line of percentage of cash dividend stock dividend and total dividend for different year of HBL. The bank pays both the cash and stock dividend from 2005/06 to 2009/10. In the previous year's bank has paid more cash dividend compare to stock dividend. But in 2008/09 and 2009/10 the bank has distributed more stock dividend than cash dividend. That means bank wants to increase the capital fund.

**4.1.5 Analysis of Market Price of Share, P/E Ratio & EPS of HBL**

The following table shows market price of share, P/E Ratio & EPS of HBL.

**Table 4.5**  
**Market Price of Share, P/E Ratio & EPS of HBL**

<b>Fiscal Year</b>	<b>Closing MPS</b>	<b>P/E Ratio</b>	<b>EPS (Rs)</b>
2005/06	1100	59.24	18.57
2006/07	1740	60.66	28.69
2007/08	1980	62.74	31.56
2008/09	1760	61.9	28.43
2009/10	816	31.8	25.66
Average	1479.2	55.26	26.58

Source: AGM Report of HBL

P/E ratio of HBL is maximum in the year 2007/08 i.e. 62.74 and minimum in the year 2005/06 i.e. 31.8. P/E ratio is in increasing trend from starting year 2005/06 to the ending year 2007/08 and from 2007/08 P/E ratio is in decreasing trend. The higher risk, the higher the discount factor and the lower the P/E ratio. The higher the growth rates of the bank, the higher the P/E ratio. 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. The more per share return, the more excellent it is and the less per share return, the worse it is. Average market price of the HBL during the five year is 1479.2 and average P/E Ratio and average EPS is 55.26 & Rs26.58 respectively.

**Figure 4.6**  
**Market Price Movement of Common Stock of HBL**

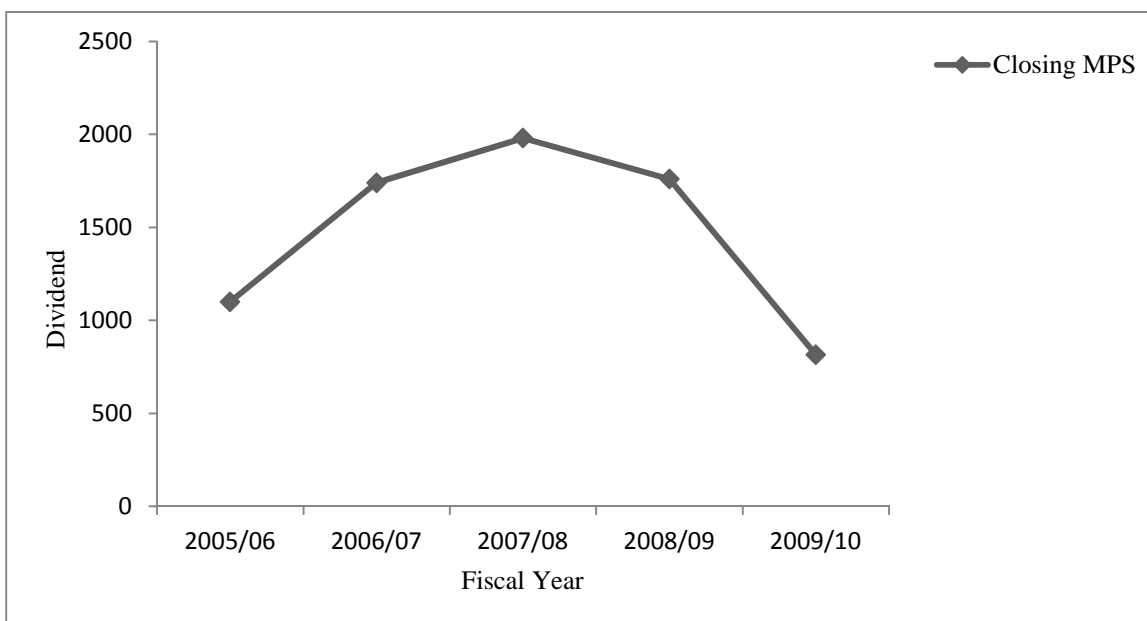


Figure 4.6 shows the trend line of price or MPS of HBL in the fluctuating trend. The

minimum is in the year 2009/10 i.e. Rs.816 and maximum in the year 2007/08 i.e. 1980. It can be seen that there is decreasing from the year 2008/09 and growing slowly from the year 2005/06.

**Figure 4.7**  
**P/E Ratio and EPS of HBL**

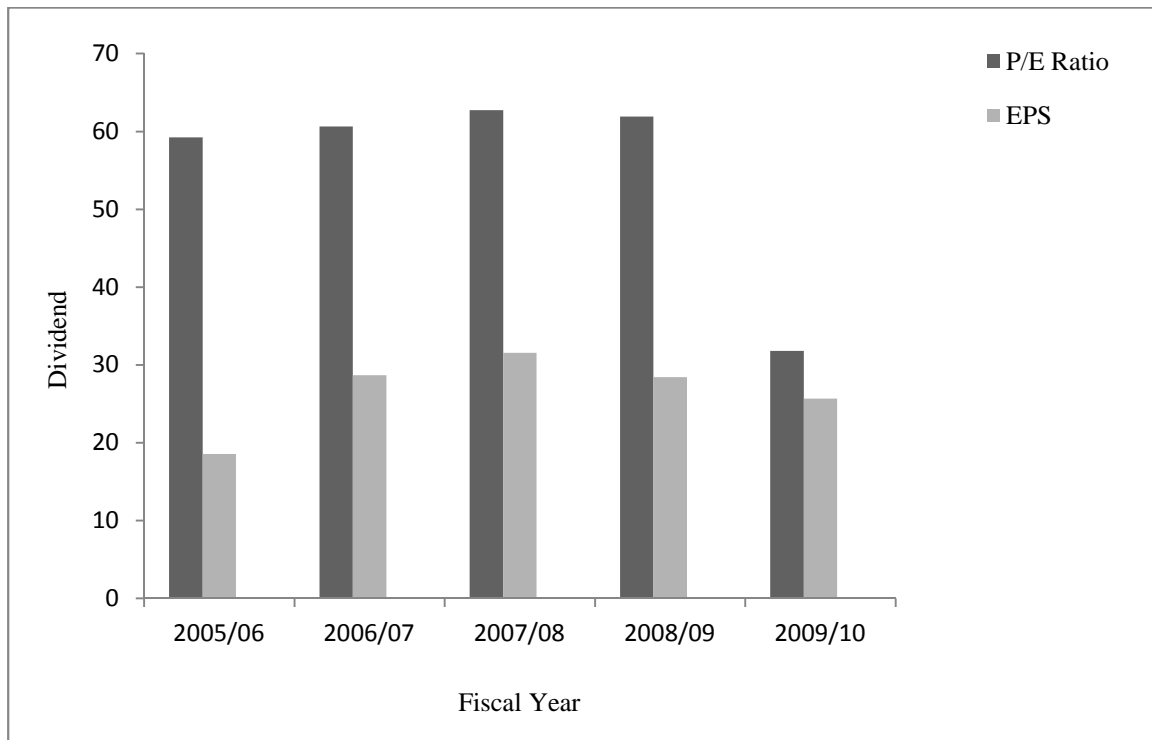


Figure 4.7 shows the bar diagram of P/E ratio and EPS of HBL for different fiscal year. P/E ratio of the bank is increasing trend from fiscal year 2005/06 to 2008/09 The lowest P/E ratio in year 2009/10. Earnings per share of the bank in different year are less than Rs 30 except the year 2007/08. The figure reveals that HBL is not paying excellent return to their shareholders.

#### **4.1.6 Risk and Return of Common Stock of HBL**

The following table shows annual return, expected return, standard deviation and coefficient of variation of common stock of HBL.

**Table 4.6**  
**Expected Return, S.D. and C.V. of Common Stock of HBL**

<b>Fiscal Year</b>	<b>Closing MPS</b>	<b>Total Dividend</b>	<b>Annual Rate of Return</b> $R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2005/06	1100	117	0.3228	0.0513	0.0026
2006/07	1740	510	1.0455	0.7740	0.5991
2007/08	1980	377	0.3545	0.0830	0.0069
2008/09	1760	269.52	0.02501	-0.0213	0.0004
2009/10	816	256.84	-0.3904	-0.6619	0.4381
			$\sum R_j = 1.3574$		$\sum (R_j - \bar{R}_j)^2 = 1.0470$

Source: Appendix II and annual report of HBL

**Note: Closing MPS of HBL for 2004/05 is Rs 920**

The expected return of HBL is 0.2715 with the total risk (measured by S.D.) of 0.5116. The C.V. of HBL is 1.8844 which indicates that 1.8844 risks must be bearded to get per unit return. It can be shown clearly in the figure 4.8.

**Figure 4.8**  
**Annual Rate of Return of Common Stock of HBL**

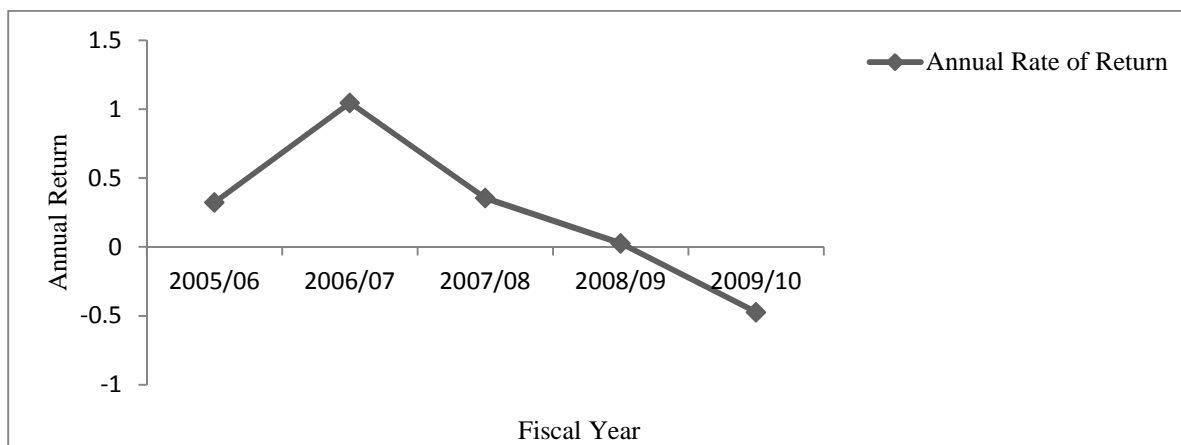


Figure 4.8 shows returns of HBL in the several years. There is negative and fluctuating return in several years. The highest return is in the year 2006/07 i.e. 1.0455 and lowest return of 2009/10 i.e. -0.3904.

#### 4.1.7 Analysis of Dividend of Everest Bank Ltd. (EBL)

The following table shows cash dividend, stock dividend and total dividend of EBL.

**Table 4.7**  
**Cash Dividend, Stock Dividend & Total Dividend of EBL**

Fiscal Year	Cash DPS (%)	Stock Dividend (%)	Total Dividend (%)
2005/06	25	-	25
2006/07	10	30	40
2007/08	20	30	50
2008/09	30	30	60
2009/10	30	30	60
Average	23	24	47

Source: AGM Report of EBL

According to table 4.7, EBL has not pay stock dividend in year 2005/06. But bank has paid both cash and stock dividend for rest year. Highest total dividend is paid in the year 2008/09 & 2009/10 i.e. 60% in the year 2008/09 and 2009/10 the bank has paid equal dividend both cash and stock dividend. From the table, it shows that bank has maintained the stable stock dividend policy i.e. 30% every year. Average total dividend of EBL during the five year is 47%, in the same way; average cash and average stock dividend are 23% & 24% respectively.

**Figure 4.9**  
**Cash Dividend, Stock Dividend and Total Dividend of EBL**

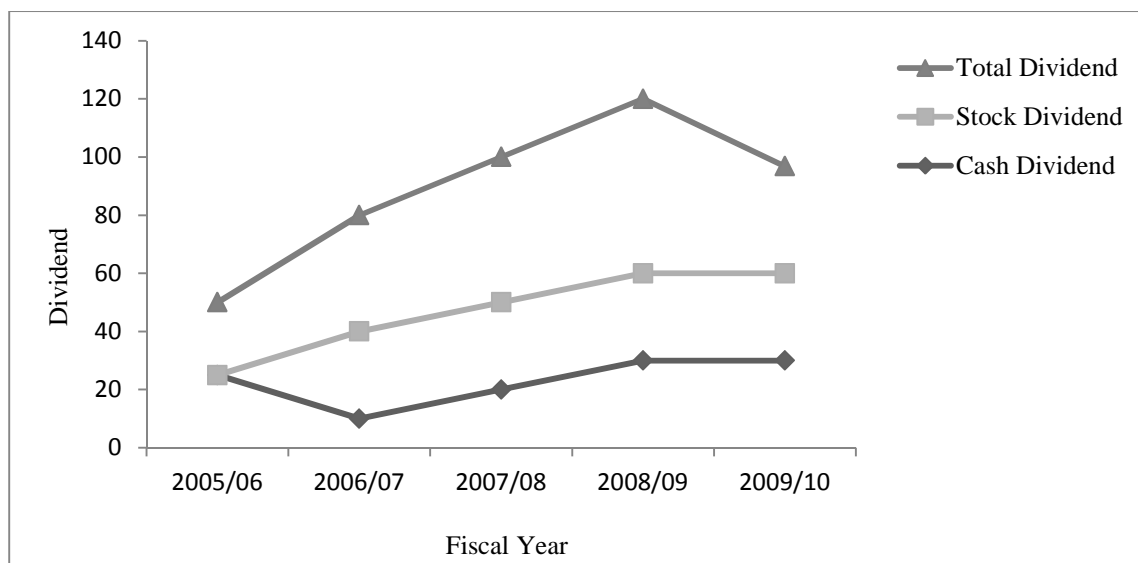


Figure 4.9 shows the trend line of cash dividend, stock dividend and total dividend for

different year of EBL. The bank pays both the cash and stock dividend from 2006/07 to 2009/10. But EBL has paid only cash dividend in fiscal year 2005/06. Bank has increased the cash dividend. EBL has been paying stable stock dividend i.e. 30% every year. That means bank wants to increase the capital fund each and every year with stable stock dividend policy.

#### **4.1.8 Analysis of Market Price of Share, P/E Ratio & EPS of EBL**

The following table shows market price of share, P/E Ratio & EPS of EBL.

**Table 4.8**  
**Market Price of Share, P/E Ratio & EPS of EBL**

<b>Fiscal Year</b>	<b>Closing MPS (Rs)</b>	<b>EPS (Rs)</b>	<b>P/E Ratio</b>
2005/06	1379	62.78	21.97
2006/07	2430	78.42	30.99
2007/08	3132	91.82	34.11
2008/09	2455	99.99	25.55
2009/10	1630	100.16	16.27
Average	2205.2	86.63	25.77

Source: AGM Report of EBL

P/E ratio of EBL is highest in the year 2007/08 i.e. 34.11 and minimum in the year 2009/10 i.e.16.27. P/E ratio is in increasing trend from starting year 2005/06 and decreased from the year 2008/09. The closing MPS of EBL is maximum of Rs. 2455 in the year 2008/09 and minimum of Rs. 1379 in the year 2005/06. The earning per share of the bank is very high and increase each and every year. It shows that investors are earning good return from their investment of EBL shares. Average market price of the EBL during the five year is 2205.2 and average P/E Ratio and average EPS is 86.63 & Rs 25.77 respectively.

**Figure 4.10**  
**Market Price Movement of the Common Stock of EBL**

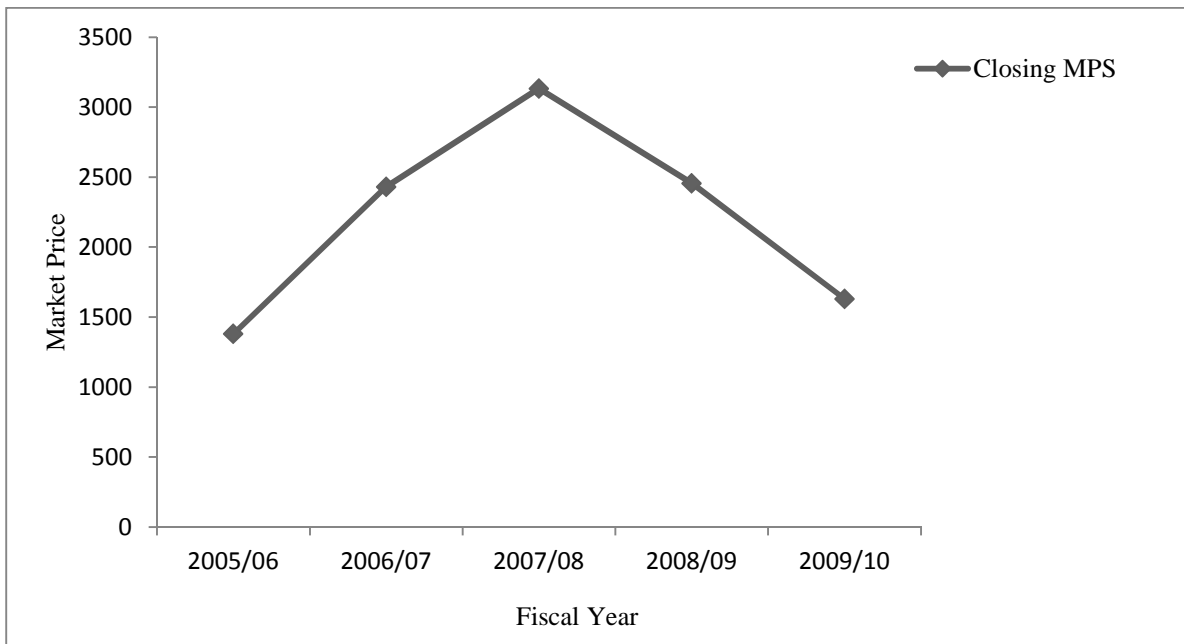


Figure 4.10 shows the trend line of price or MPS of EBL which is in increasing trend from 2005/6. The price is minimum in the year 2005/6 i.e. Rs. 1379 and pick in the year 2007/08 i.e. 3132. It is shown that there is rapid growth from year 2005/06 to 2007/08 and decrease slowly from 2007/08. Overall price of the EBL seems as satisfactory with their growth in the market price. But in recent year, market price of the bank is in decreasing trend due to the bad performance of stock market of Nepal.

**Figure 4.11**  
**P/E Ratio and EPS of HBL**

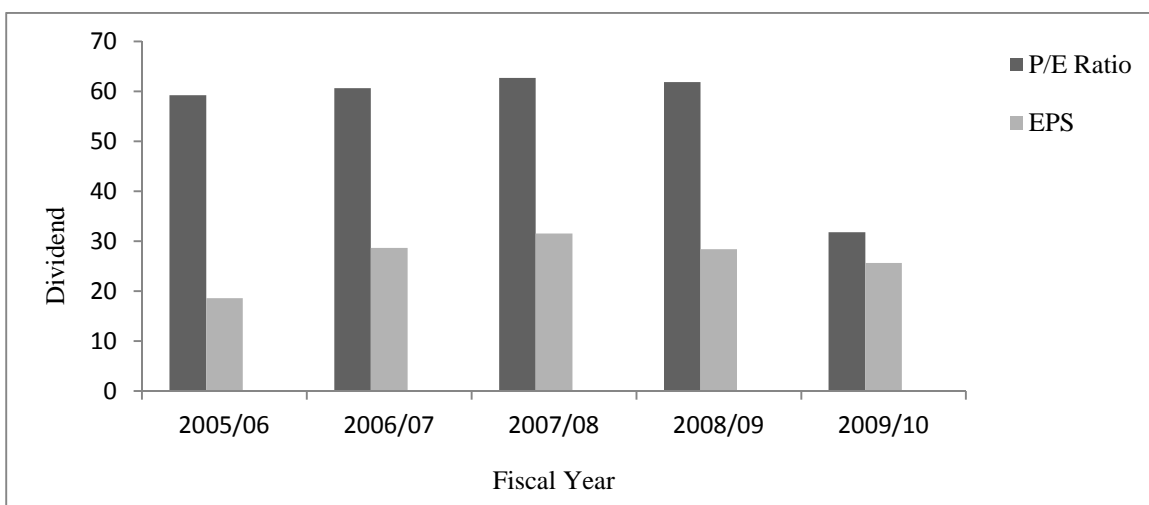


Figure 4.11 shows the bar diagram of P/E ratio and EPS of EBL for different fiscal year. P/E

ratio of the bank is increasing trend from fiscal year 2005/06 to 2007/08. Earnings per share of the bank in different year are more than Rs 63. The figure reveals that EBL is paying excellent return to their shareholders.

#### 4.1.9 Risk and Return of Common Stock of EBL

The following table shows Annual Return, Expected Return, Standard Deviation and Coefficient of Variation of Common Stock of EBL.

**Table 4.9**  
**Expected Return, S.D. and C.V. of Common Stock of EBL**

Fiscal Year	Closing MPS	Total Dividend	Annual Rate of Return $R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2005/06	1379	25	0.6138	0.1095	0.0119
2006/07	2430	949.06	1.4507	0.9464	0.8957
2007/08	3132	756.5	0.6002	0.0959	0.0092
2008/09	2455	519	-0.0504	-0.5546	0.3076
2009/10	1630	597	-0.0928	-0.5971	0.3565
			$\sum R_j = 2.5214$		$\sum (R_j - \bar{R}_j)^2 = 1.5809$

Source: Appendix III and annual report of EBL

**Note: Closing MPS of EBL for 2004/05 is Rs 870**

The expected return of EBL is 0.5043 with total risk (measured by S.D.) of 0.6286. The C.V. of EBL is 1.2466 which indicates the investor needs to sacrifice 1.2466 unit of risk for per unit return.

**Figure 4.12**

**Annual Rate of Return of Common Stock of EBL**

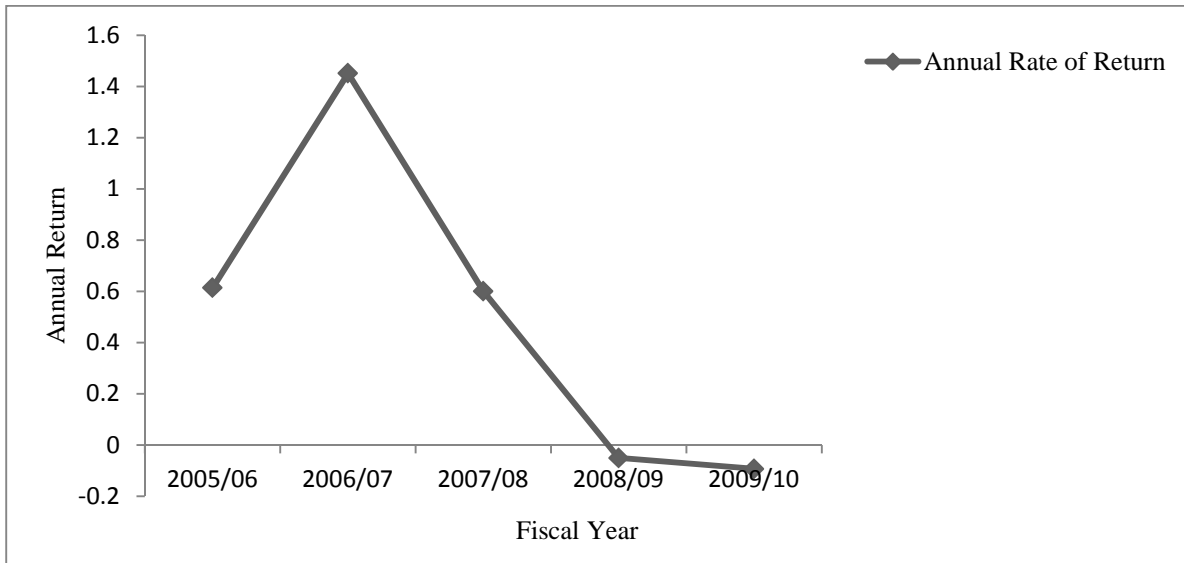


Figure 4.12 shows the return of EBL which is negative in the year 2008/09 and 2009/10 and positive in rest years. There is highest return of 1.4507 in the year 2006/07 and lowest return of -0.5971 in the year 2009/10. There is fluctuation of returns.

#### 4.2 Inter Bank Comparison

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

**Table 4.10**

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

Bank	Expected Return( $\bar{R}_j$ )	Standard Deviation( $\uparrow_j$ )	Coefficient of Variation	Remarks		
				Return	Risk	C.V.
NIBL	0.40366	0.8179	2.0263	Medium	Highest	Highest
HBL	0.2715	0.5116	1.8844	Lowest	Lowest	Medium
EBL	0.5043	0.6286	1.2466	Highest	Medium	Lowest

Source: Table 4.3, Table 4.6 and Table 4.

The table 4.10 shows the overall return and risk of the individual banks. From the table it is

found that the highest return from EBL i.e. 0.5043 and lowest return from HBL i.e. 0.2715. Total risk (measured by standard deviation) is observed maximum of the common stock of NIBL i.e. 0.8179 and minimum of HBL i.e. 0.5116. This means that quantity of total risk is very high in NIBL. Higher the C.V. higher the risk and C.V. of NIBL is highest i.e. 2.0263 than that of other commercial banks. It indicates common stock of NIBL is more risky than that of other banks. Investment in EBL is desirable because its return is higher and risk is lowest compared to others.

To make the comparison easily understandable Figure 4.13 is presented below;

**Figure 4.13**  
**Expected Return, S.D. and C.V. of each Commercial Bank**

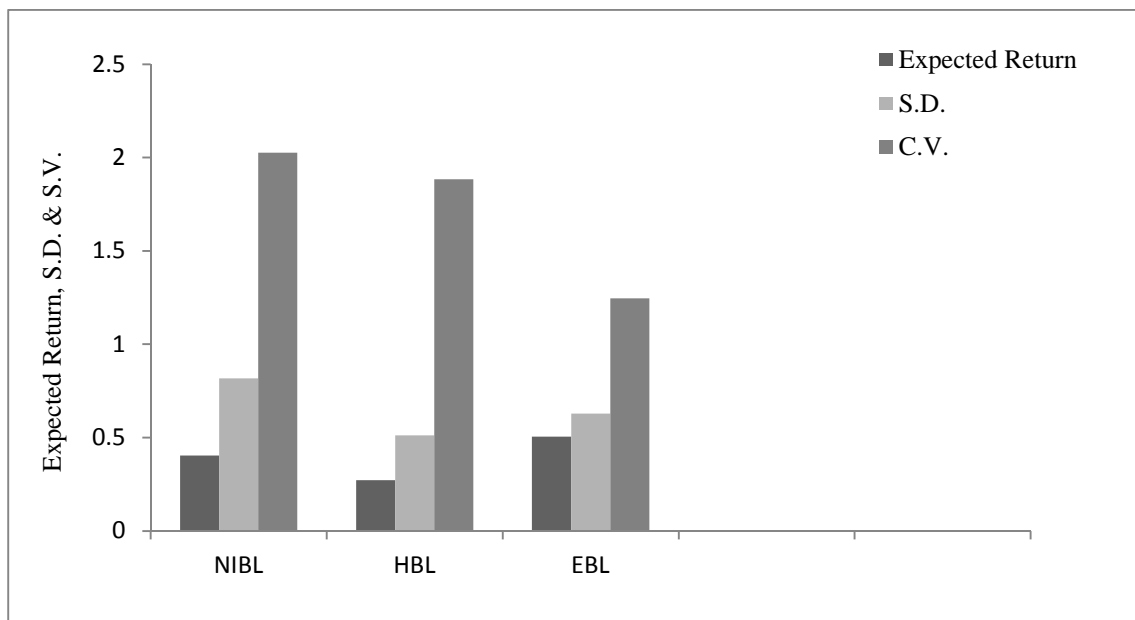


Figure 4.13 clarify the expected return, standard deviation and coefficient of variation of each individual bank. It is showing the comparison of these banks in terms of risk and return.

### 4.3 Market Capitalization

On the basis of Market Capitalization at the end of 2009/010, size of each bank is presented in table 4.11 that NIBL has highest market capitalization with Rs. 32,001.08 million and Everest Bank Ltd has lowest market capitalization with Rs.14525.78 million among these three companies at 2009/010, So, NIBL is the biggest and EBL is the smallest company on the basis of market capitalization. The figure 4.11 shows that the comparative proportion of the market capitalization of listed three banks.

**Table 4.11**  
**Market Capitalization of NIBL, HBL and EBL**

<b>Banks</b>	<b>Market capitalization (in millions)</b>	<b>In (%)</b>
NIBL	32001.08	44.78%
HBL	24932.41	34.89%
EBL	14525.78	20.33%
Total	84798.40	100%

Source Trading Report SEBO/N (July15, 2010)

**Figure 4.14**  
**Market Capitalization (in millions)**

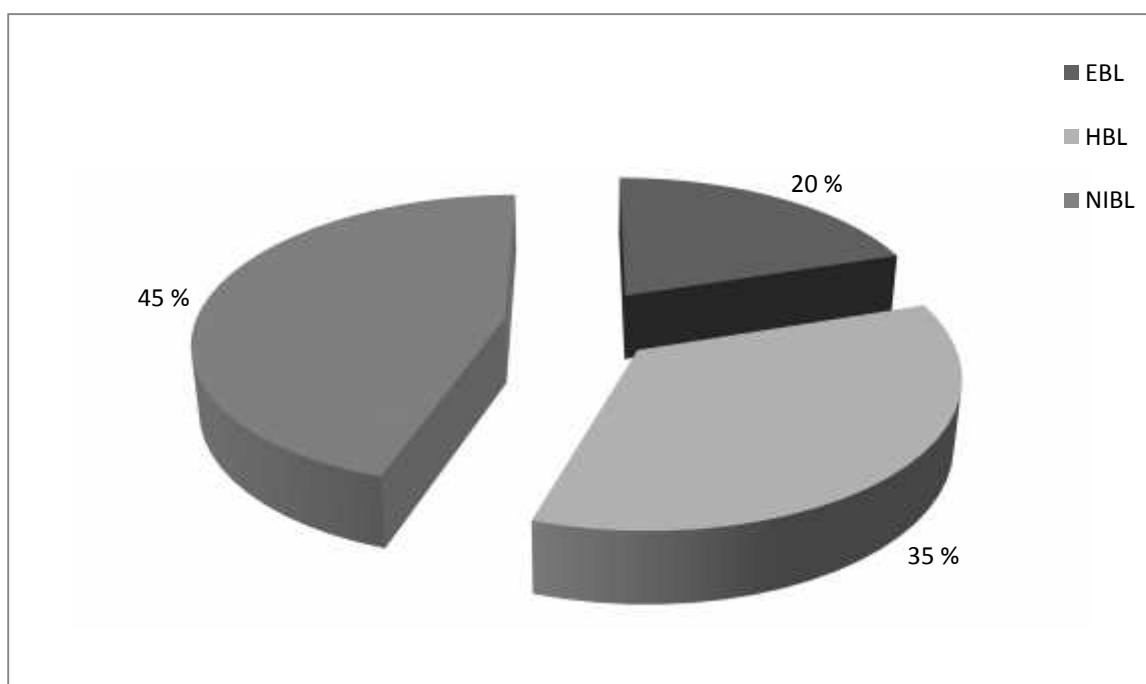


Figure 4.14 shows the share of each bank in the market .NIBL is in the highest position by occupying 44.78% share in the market and EBL is in the lowest positioning by occupying 20.33% share in the market among others.

## 4.4 Comparison with Market

### 4.4.1 Market 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 from 2005/06 to 2009/10 is presented below;

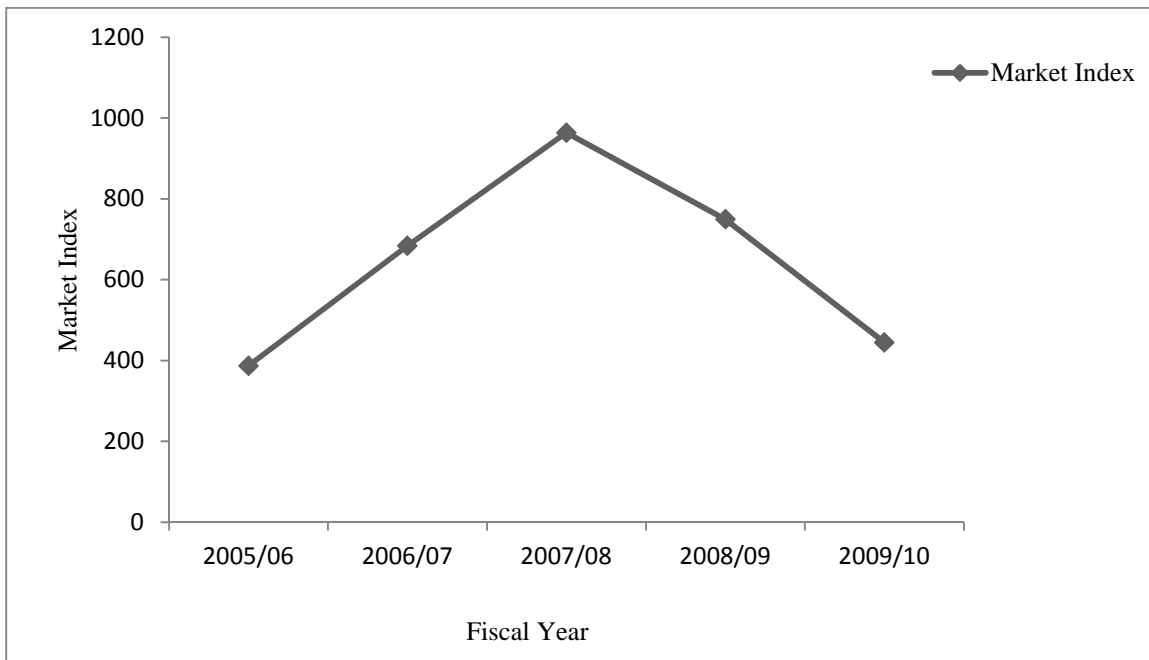
**Table 4.12**

**Calculation of Expected Return, S.D. and C.V. of Common Stock of Overall Market**

Fiscal Year	Market index	$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$	$(R_m - \bar{R}_m)$	$(R_m - \bar{R}_m)^2$
2005/06	386.86	0.3494	0.1699	0.0288
2006/07	683.95	0.7679	0.5884	0.3462
2007/08	963.36	0.4085	0.2290	0.0524
2008/09	749.10	-0.2224	-0.4018	0.1614
2009/10	444.76	-0.4062	-0.5856	0.3429
		$\sum R_m = 0.8972$		$\sum (R_m - \bar{R}_m)^2 = 0.9317$

Table 4.12 shows the return of market in several years. There is highest return of market in the year 2006/07 i.e. 0.7679 and there is negative return of market in the year 2008/09 and 2009/10 i.e. -0.2224 and -0.4062 respectively. The expected return of the market is 0.17944 with the total risk (measured by S.D.) of 0.4826. C.V of market is 2.6900 which means, 2.6900 risks must be sacrificed to get per unit market return.

**Figure 4.15**  
**NEPSE Index Movement**



The figure 4.15 shows the movement of NEPSE Index. It is in decreasing trend from the fiscal year 2007/08 to 2009/10 and increasing trend from 2005/06. The minimum index is 386.86 in the year 2005/06 and maximum index is 963.36 in the year 2007/08.

**Figure 4.16**  
**Market Return Movement**

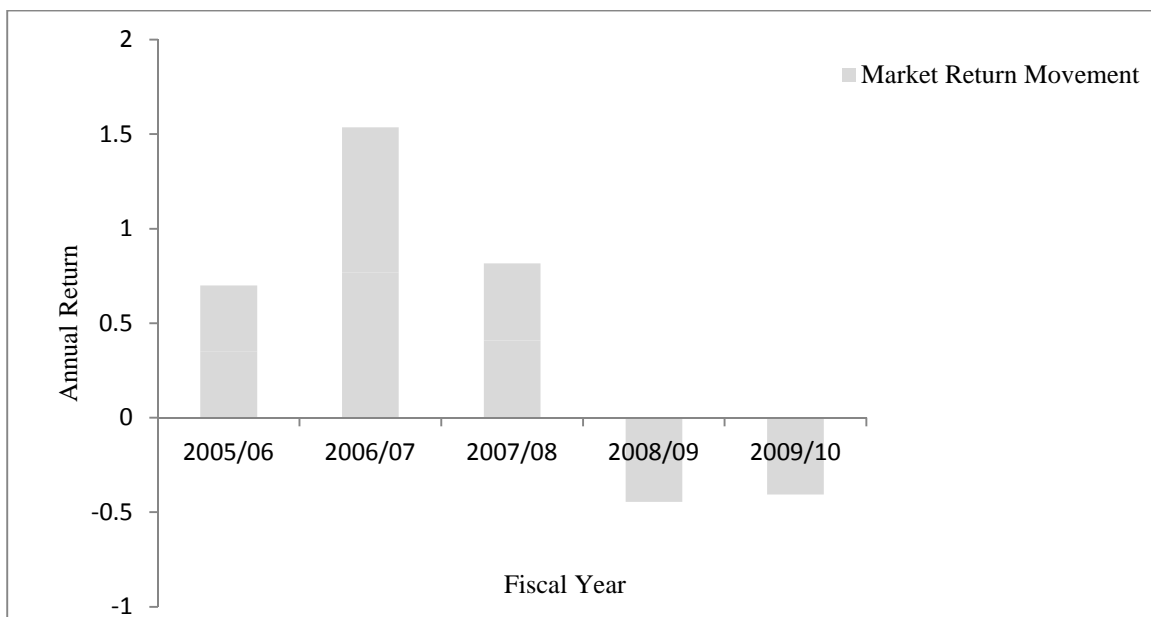


Figure 4.16 shows that the market return is negative in year 2008/09 and 2009/10 and there is

positive return with increasing trend starting from 2005/06 to 2006/07.

#### 4.4.2 Market Sensitivity Analysis

Market sensitivity of stock is explained by terms of beta coefficient. Beta coefficient can be used for an ordinal ranking of the systematic risk 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 is eliminated through the means of diversification. The following table shows beta coefficient of common stock of HBL.

**Table 4.13**  
**Beta Coefficient of Common Stock of NIBL**

<b>Fiscal Year</b>	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$
2005/06	0.1699	0.9627	0.1635
2006/07	0.5884	0.4586	0.2698
2007/08	0.2290	0.2852	0.0653
2008/09	-0.4018	-0.8289	0.03330
2009/10	-0.5856	-0.8777	0.5139
			$\sum [(R_m - \bar{R}_m)(R_j - \bar{R}_j)] = 1.3455$

From sensitivity analysis of NIBL, the beta coefficient is 1.4439, which is more than 1, shows that NIBL is very much volatile and aggressive. Investor can purchase this type of investment. From the side of investment, it is risky investment. The following table shows beta coefficient of common stock of HBL.

**Table 4.14**  
**Beta Coefficient of Common Stock of HBL**

<b>Fiscal Year</b>	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$
2005/06	0.1699	0.0513	0.0087
2006/07	0.5884	0.7740	0.4554
2007/08	0.2290	0.0830	0.0190
2008/09	-0.4018	-0.0213	0.0085
2009/10	-0.5856	-0.6619	0.3876
			$\sum [(R_m - \bar{R}_m)(R_j - \bar{R}_j)] = 0.8792$

From sensitivity analysis of HBL, the beta coefficient is 0.9437 which is less than 1. The company which has got less than 1 is very much volatile and aggressive investor can purchase this type of investment. From the side of investment, it is risky investment. The following table shows beta coefficient of the common stock of EBL.

**Table 4.15**  
**Beta Coefficient of the Common Stock of EBL**

<b>Fiscal Year</b>	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$
2005/06	0.1699	0.1095	0.0186
2006/07	0.5884	0.9464	0.5568
2007/08	0.2290	0.0959	0.0219
2008/09	-0.4018	-0.5546	0.2228
2009/10	-0.5856	-0.5971	0.3496
			$\sum [(R_m - \bar{R}_m)(R_j - \bar{R}_j)] = 1.1697$

From sensitivity analysis of EBL, the beta coefficient is 1.2554 which is more than 1. The company which has got more than 1 is very much volatile and aggressive investor can purchase this type of investment. From the side of investment, it is risky investment. The following table shows beta coefficient of the common stock of EBL from 2005/06 to 2009/10.

**Table 4.16**  
**Beta Coefficient of each Bank**

<b>Banks</b>	<b>Beta Coefficient</b>	<b>Remarks</b>
NIBL	1.4439	Most Aggressive
HBL	0.9437	Least Aggressive
EBL	1.2554	Medium Aggressive

Source: Table 4.10, 4.11 and 4.12

Here, as shown in the table 4.16, NIBL and EBL have higher beta coefficient than the beta coefficient of market. The stock of these banks is aggressive and HBL has lower beta coefficient than market so it is a defensive stock. The stock of NIBL seems most aggressive than other stocks where as HBL seems least aggressive.

#### **4.4.3 Required Rate of Return ( $R_j$ ), Expected Rate of Return ( $\bar{R}_j$ ) 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, 91 days duration. Treasury bill rate is taken as a risk free rate from website of NRB. This is approximately 5.13%. The following table shows Required Rate of Return, Expected Return and Price Evaluation of NIBL, HBL & EBL.

**Table 4.17**  
**Required Rate of Return, Expected Return and Price Evaluation**

<b>Banks</b>	$R_f$	$E(R_m)$	$Beta(S_j)$	$E(R_j) = R_f + [E(R_m) - R_f] S_j$	$\bar{R}_j$	<b>Price Evaluation</b>
NIBL	0.0513	0.17944	1.4439	0.2363	0.4036	underpriced
HBL	0.0513	0.17944	0.9437	0.1722	0.2715	underpriced
EBL	0.0513	0.17944	1.2554	0.2122	0.5043	underpriced

Where,

$R_f$  =Risk free rate of return (0.0513)

$E(R_m)$  = Market rate or return (0.1742)

$S_j$  = Beta of individual sample Banks.

$\left(\bar{R}_j\right)$  = Expected rate of return

In the table 4.17, we get the expected rate of return is higher than the required rate of return, so all commercial bank's stock are under priced. 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 under priced, investor can gain profit from buying those stocks. These stocks are recommended to buy.

#### 4.5 Portfolio Analysis

The analysis is based on two assets portfolio and the tools for analysis are presented in the third chapter (research methodology). Here the portfolio of common stock of NIBL (say stock A), HBL (say stock B) and EBL (say stock C) is analyzed. The following table shows Covariance between stocks;

**Table 4.18**  
**Covariance between Stocks**

$Cov(R_A, R_B)$	<b>0.2565</b>
$Cov(R_B, R_C)$	<b>0.2715</b>
$Cov(R_A, R_C)$	<b>0.5043</b>

Source: Appendix IV, V, VI

Where,

$Cov(R_A, R_B)$  = Covariance of returns of NIBL and HBL

$Cov(R_B, R_C)$  = Covariance of returns of HBL and EBL

$Cov(R_A, R_C)$  = Covariance of returns of NIBL and EBL

##### 4.5.1 Portfolio of stock of NIBL (A) and HBL (B)

The optimal portfolio weight of stock A and B, which minimizes the risk, has been calculated

using the formula given below;

$$W_A = \frac{\sigma_B^2 - \text{Cov}(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - \text{Cov}(R_A, R_B)}$$

$$W_B = 1 - W_A$$

Where,

$W_A$  = optimal weight to invest in stock of NIBL

$W_B$  = optimal weight to invest in stock of HBL

$\sigma_A^2$  = variance of NIBL

$\sigma_B^2$  = Variance of HBL

Now,

$$W_A = \frac{0.5116^2 - 0.2565}{0.8179^2 + 0.5116^2 - 0.2565} = 0.0077$$

$$W_B = 1 - 0.0077 = 0.9922$$

As we know that the proportion of stock in the portfolio is constructed with 0.07% of NIBL and 99.22% of HBL common stock that will minimize risk. 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.

$$\begin{aligned} \text{Expected Return on portfolio } E(R_p) &= W_A \times E(R_A) + W_B \times E(R_B) \\ &= 0.0077 \times 0.40366 + 0.9922 \times 0.2715 \\ &= 0.2725 \\ &= 27.25\% \end{aligned}$$

Where,

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

$E(R_A)$  = Expected Return of NIBL

$E(R_B)$  = Expected Return of HBL

### 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.

$$\begin{aligned}\sigma_p &= \sqrt{W_A^2 \times \sigma_A^2 + W_B^2 \times \sigma_B^2 + 2COV_{AB} \times W_A \times W_B} \\ &= \sqrt{0.077^2 \times 0.8179^2 + 0.9922^2 \times 0.5116^2 + 2 \times 0.2565 \times 0.0077 \times 0.9922} \\ &= 0.5114 \\ &= 51.14\%\end{aligned}$$

Where,

$\sigma_p$  = The standard deviation of portfolio return of stock NIBL and HBL

From the above calculation the portfolio return and risk for NIBL and HBL are 27.25% and 51.14% respectively.

#### 4.5.2 Portfolio of Stock of HBL (B) and EBL (C)

The optimal portfolio weight of stock B and C, which minimizes the risk, has been calculated using the formula given below;

$$W_B = \frac{\sigma_C^2 - Cov(R_B R_C)}{\sigma_B^2 + \sigma_C^2 - Cov(R_B R_C)}$$

$$W_C = 1 - W_B$$

Now,

$$W_B = \frac{0.6286^2 - 0.2812}{0.5116^2 + 0.6286^2 - 0.2812} = 0.3033$$

$$W_C = 1 - W_B = 1 - 0.3033 = 0.6967$$

As we know that the proportion of stock in the portfolio is constructed with 30.33% of HBL and 69.67% of EBL common stock that will minimize risk and ideal proportion. 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.

$$\begin{aligned}\text{Expected Return on portfolio } E(R_p) &= W_A \times E(R_A) + W_C \times E(R_C) \\ &= 0.3033 \times 0.2715 + 0.6967 \times 0.5043 \\ &= 0.4336\end{aligned}$$

$$= 43.36\%$$

Where,

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

$E(R_B)$  = Expected Return of HBL

$E(R_C)$  = Expected Return 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.

$$\begin{aligned} \sigma_p &= \sqrt{W_B^2 \times \sigma_B^2 + W_C^2 \times \sigma_C^2 + 2COV_{BC} \times W_B \times W_C} \\ &= \sqrt{0.3033^2 \times 0.5116^2 + 0.6967^2 \times 0.6286^2 + 2 \times 0.2812 \times 0.3033 \times 0.6967} \\ &= 0.5785 \\ &= 57.85\% \end{aligned}$$

From the above calculation the portfolio return and risk for HBL and EBL are 43.36 % and 57.85 % respectively.

### 4.5.3 Portfolio of Stock of NIBL (A) and EBL (C)

The optimal portfolio weight of stock A and C, which minimizes the risk, has been calculated using the formula given below;

$$\begin{aligned} W_A &= \frac{\sigma_C^2 - Cov(R_A, R_C)}{\sigma_A^2 + \sigma_C^2 - Cov(R_A, R_C)} \\ W_C &= 1 - W_A \end{aligned}$$

Where,

$W_A$  = optimal weight to invest in stock of NIBL

$W_C$  = optimal weight to invest in stock of EBL

$\sigma_A^2$  = variance of NIBL

$\sigma_C^2$  = Variance of EBL

Now,

$$W_A = \frac{0.6286^2 - 0.3876}{0.8179^2 + 0.6286^2 - 0.3876} = 0.0111$$

$$W_C = 1 - W_A = 0.9888$$

As we know that the proportion of stock in the portfolio is constructed with 1.11% of NIBL and 98.88% of EBL common stock that will minimize risk and ideal proportion. 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.

$$\begin{aligned} \text{Expected Return on portfolio } E(R_p) &= W_A \times E(R_A) + W_C \times E(R_C) \\ &= 0.0111 \times 0.40366 + 0.9888 \times 0.5043 \\ &= 0.50313 \end{aligned}$$

Where,

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

$E(R_A)$  = Expected Return of NIBL

$E(R_C)$  = Expected Return 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.

$$\begin{aligned} \dagger_p &= \sqrt{W_A^2 \times \dagger_A^2 + W_C^2 \times \dagger_C^2 + 2COV_{AC} \times W_A \times W_C} \\ \dagger_p &= \sqrt{0.0111^2 \times 0.8179^2 + 0.9888^2 \times 0.6286^2 + 2 \times 0.3876 \times 0.0111 \times 0.9888} \\ &= .6284 \\ &= 62.84\% \end{aligned}$$

Where,

$\dagger_p$  = The standard deviation of portfolio return of stock NIBL and EBL

From the above calculation the portfolio return and risk for NIBL and EBL are 50.31 % and

62.84 % respectively. The following table shows Portfolio Risk and Return between NIBL, HBL & EBL.

**Table 4.19**  
**Portfolio Risk and Return**

Banks	$E(R_p)$	$\dagger_p$	Remarks	
			Return	Risk
NIBL and HBL	27.25%	51.14%	Lowest	Lowest
HBL and EBL	43.36%	57.85%	Medium	Medium
NIBL and EBL	50.31%	62.84%	Highest	Highest

#### 4.6 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 then 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. Table 4.20 shows various consulations between each sample banks.

**Table 4.20**  
**Correlation Matrix**

Sample	NIBL	HBL	EBL
NIBL	1	0.6132	0.7538
HBL		1	0.8744
EBL			1

Source: Appendix IV, V and VI

Table 4.20 (correlation matrix) has shown the positive correlation between the banks. If correlation between stocks is +1, any part of risk cannot be reduced by diversification. On the other hand, if correlation between stocks are '-1' the proper combination of two stocks can be reduces all the risk. In conclusion it can be say that as long as correlation between securities return is negative, construction of portfolio is beneficial.

Among the above correlation combination, combination between NIBL and EBL is much better than any other combination because the combination has the lowest correlation.

## 4.7 Systematic and Unsystematic Risk

### 4.7.1 Systematic and Unsystematic Risk of NIBL with Market:

The systematic and unsystematic risks of NIBL with market are as follows;

$$SR = \frac{Cov(R_j.R_m)}{\dagger_m} = \frac{0.3363}{0.4826} = 0.6968$$

$$USR = \dagger_j - SR = 0.8179 - 0.6968 = 0.1211$$

$Cov(R_j.R_m)$   $\dagger_m$   $\dagger_j$  are taken from table 4.12, 4.13 and 4.3 respectively.

Where

$Cov(R_j.R_m)$  = Covariance returns of NIBL with market

$\dagger_j$  = S.D. of NIBL

Proportion of Systematic and Unsystematic Risk

$$\text{Proportion of SR} = \frac{SR}{TR} = \frac{0.6968}{0.8179} = 0.8519$$

$$\text{Proportion of USR} = \frac{USR}{TR} = \frac{0.1211}{0.8179} = 0.1480$$

Out of total risk in stock of NIBL; 69.68% is undiversifiable risk and created from systematic factor or market factor and the remaining 12.11% is diversifiable risk and created from company related factor.

### 4.7.2 Systematic and Unsystematic Risk of HBL with Market:

The systematic and unsystematic risks of HBL with market are as follows;

$$SR = \frac{Cov(R_j.R_m)}{\dagger_m} = \frac{0.2198}{0.4826} = 0.4554$$

$$USR = \dagger_j - SR = 0.5116 - 0.4554 = 0.0562$$

$Cov(R_j.R_m)$   $\dagger_m$   $\dagger_j$  are taken from table 4.12, 4.13 and 4.14 respectively.

Where

$Cov(R_j.R_m)$  = Covariance returns of HBL with market

$\dagger_j$  = S.D. of HBL

Proportion of Systematic and Unsystematic Risk

$$\text{Proportion of SR} = \frac{SR}{TR} = \frac{0.4554}{0.5116} = 0.8901$$

$$\text{Proportion of USR} = \frac{USR}{TR} = \frac{0.0562}{0.5116} = 0.1098$$

Out of total risk in stock of HBL; 45.54% is undiversifiable risk and created from systematic factor or market factor and the remaining 5.62% is diversifiable risk and created from company related factor.

#### 4.7.3 Systematic and Unsystematic Risk of EBL with Market:

The systematic and unsystematic risks of EBL with market are as follows;

$$SR = \frac{Cov(R_j, R_m)}{\dagger_m} = \frac{0.2924}{0.4826} = 0.6058$$

$$USR = \dagger_j - SR = 0.6286 - 0.6058 = 0.0228$$

$Cov(R_j, R_m)$   $\dagger_m$   $\dagger_j$  are taken from table 4.12, 4.13 and 4.9 respectively.

Where

$Cov(R_j, R_m)$  = Covariance returns of EBL with market

$\dagger_j$  = S.D. of EBL

Proportion of Systematic and Unsystematic Risk

$$\text{Proportion of SR} = \frac{SR}{TR} = \frac{0.6058}{0.6286} = 0.9637$$

$$\text{Proportion of USR} = \frac{USR}{TR} = \frac{0.0228}{0.6286} = 0.03627$$

Out of total risk in stock of EBL; 60.58% is undiversifiable risk and created from systematic factor or market factor and the remaining 2.28% is diversifiable risk and from company related factor. The following table shows proportion of SR and USR of NIBL, HBL & EBL.

**Table 4.21**  
**Proportion of SR and USR**

Bank	SR	USR
NIBL	85.19%	14.80%
HBL	89.01%	10.98%
EBL	96.37%	3.62%

## 4.8 Testing of Hypothesis

The hypothesis is based on the test of significance for difference of mean (t-test). For this expected return of selected banks are calculated in following table.

### 4.8.1 Testing of Hypothesis Expected Return of NIBL with Overall Market Return

#### For NIBL Banks

Sample size ( $n_1$ ) = 5 years

Expected Return  $\bar{R}_j = 0.4036$

Standard Deviation  $S_1 = 0.8179$

#### For Market

$n = 5$  years

$\bar{R}_m = 0.1794$

$S_2 = 0.4826$

#### Null Hypothesis ( $H_0$ )

$\bar{R}_j = \bar{R}_m$  I.e. there is no significant difference between the Expected return of NIBL and overall market return.

**Alternative Hypothesis**  $\bar{R}_j \neq \bar{R}_m$  i.e. there is significant difference between the Expected return of NIBL and overall market return.

The test statistics (t) is

$$t = \frac{\bar{R}_j - \bar{R}_m}{\sqrt{S^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$\bar{R}_j$  = Expected Return of C.S. of NIBL bank = 0.4036

$\bar{R}_m$  = Expected Return of market = 0.1794

$n_1 = n_2$  = Numbers of years in Sample = 5

$S^2$  = Estimated variance of population

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} = \frac{(5 - 1)0.8179^2 + (5 - 1)0.4826^2}{5 + 5 - 2} = 0.4509$$

$S_1^2$  = Variance of C.S. of NIBL banks

$S_2^2$  = Variance of market return

Hence

$$t = \frac{0.4036 - 0.1794}{\sqrt{0.4509 \left( \frac{1}{5} + \frac{1}{5} \right)}} = 0.5209$$

Degree of freedom =  $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Level of Significance = 5 %

The tabulated value of t at 5 % level of significant and 8 degree of freedom is 2.306

### Decision

Since the calculated value "t" is less than tabulated value. The null hypothesis ( $H_o$ ) is accepted at 5 % level of significance i.e. there is no significant difference between the expected return of NIBL and overall market return.

### 4.8.2 Testing of Hypothesis Expected Return of HBL with Overall Market Return

#### For HBL Banks

Sample size ( $n_1$ ) = 5 years

Expected Return  $\bar{R}_j = 0.2715$

Standard Deviation  $S_1 = 0.5116$

#### For Market

n = 5 years

$\bar{R}_m = 0.1794$

$S_2 = 0.4826$

#### Null Hypothesis ( $H_0$ )

$\bar{R}_j = \bar{R}_m$  I.e. there is no significant difference between the Expected return of HBL and overall market return.

**Alternative Hypothesis**  $\bar{R}_j \neq \bar{R}_m$  i.e. there is significant difference between the Expected return of HBL and overall market return.

The test statistics (t) is

$$t = \frac{\bar{R}_j - \bar{R}_m}{\sqrt{S^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$\bar{R}_j$  = Expected Return of C.S. of HBL bank = 0.2715

$\bar{R}_m$  = Expected Return of market = 0.1794

$n_1 = n_2$  = Numbers of years in Sample = 5

$S^2$  = Estimated variance of population

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} = \frac{(5 - 1)0.5116^2 + (5 - 1)0.4826^2}{5 + 5 - 2} = 0.2473$$

$S_1^2$  = Variance of C.S. of NIBL banks

$S_2^2$  = Variance of market return

Hence

$$t = \frac{0.2715 - 0.1794}{\sqrt{0.2473 \left( \frac{1}{5} + \frac{1}{5} \right)}} = 0.2928$$

Degree of freedom =  $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Level of Significance = 5 %

The tabulated value of t at 5 % level of significance and 8 degree of freedom is 2.306

### Decision

Since the calculated value "t" is less than tabulated value. The null hypothesis ( $H_o$ ) is accepted at 5 % level of significance i.e. there is no significant difference between the expected return of HBL and overall market return.

### 4.8.3 Testing of Hypothesis Expected Return of EBL with Overall Market Return

#### For EBL Banks

Sample size ( $n_1$ ) = 5 years

Expected Return  $\bar{R}_j = 0.5043$

Standard Deviation  $S_1 = 0.6286$

#### For Market

$n = 5$  years

$\bar{R}_m = 0.1794$

$S_2 = 0.4826$

### Null Hypothesis (H<sub>0</sub>)

$\bar{R}_j = \bar{R}_m$  I.e. there is no significant difference between the Expected return of EBL and overall market return.

**Alternative Hypothesis**  $\bar{R}_j \neq \bar{R}_m$  i.e. there is significant difference between the Expected return of EBL and overall market return.

The test statistics (t) is

$$t = \frac{\bar{R}_j - \bar{R}_m}{\sqrt{S^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$\bar{R}_j$  = Expected Return of C.S. of EBL bank = 0.5043

$\bar{R}_m$  = Expected Return of market = 0.1794

$n_1 = n_2$  = Numbers of years in Sample = 5

$S^2$  = Estimated variance of population

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} = \frac{(5 - 1)0.6286^2 + (5 - 1)0.4826^2}{5 + 5 - 2} = 0.3140$$

$S_1^2$  = Variance of C.S. of EBL banks

$S_2^2$  = Variance of market return

Hence

$$t = \frac{0.5043 - 0.1794}{\sqrt{0.3140 \left( \frac{1}{5} + \frac{1}{5} \right)}} = 0.9168$$

Degree of freedom =  $n_1 + n_2 - 2 = 5 + 5 - 2 = 8$

Level of Significance = 5 %

The tabulated value of t at 5 % level of significance and 8 degree of freedom is 2.306

### Decision

Since the calculated value "t" is less than tabulated value. The null hypothesis (H<sub>0</sub>) is accepted at 5 % level of significance i.e. there is no significant difference between the expected return of EBL and overall market return.

#### 4.9 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 major findings of the study are as follows;

- Up to the fiscal year 2007/08 NIBL pays both cash and stock dividend to shareholders but in the fiscal year 2008/09 to 2009/10 NIBL did not distribute any dividend to shareholders whereas, HBL pays both cash and stock dividend till 2009/10. Likewise, EBL pays both cash and stock dividend only from the year 2006/07 and is paying stable stock dividend i.e., 30% each year.
- Market price of the stock of all three banks is decreasing from the fiscal year 2008/09.
- EBL and NIBL are paying excellent return to their shareholders in comparison to HBL. Since the expected return of EBL is 50.43%, NIBL is 40.366% and HBL is 27.15%.
- On the basis of standard deviation, common stock of NIBL is most risky since it has high standard deviation i.e., 0.8179. Similarly, common stock of HBL is less risky because of its lowest standard deviation of 0.5116.
- On the basis of coefficient v of variation, common stock of EBL is best among all other banks. EBL has 1.2466 unit of risk per 1 unit of return. Similarly, NIBL has 2.0263 and HBL has 1.8844 unit of risk per unit of return.
- NIBL is in the highest position by occupying 44.78% share in the market and EBL is in the lowest position by occupying 20.33% share in the market.
- HBL is least aggressive due to having lowest beta i.e., 0.9437 and NIBL is most aggressive due to having highest beta 1.4439.
- NIBL is in the highest position (Rs.32, 001.08 in million) and EBL is in lowest position (Rs.14525.78 in million) according to their interbank market capitalization comparison.
- The portfolio return between NIBL and EBL is highest i.e., 50.31% and NIBL & HBL is lowest i.e., 27.25%.

- The portfolio risk between NIBL and EBL is highest i.e., 62.84 % and NIBL and HBL is lowest i.e., 51.14%.
- Since the entire bank has positive correlation so bank doesn't reduce any unsystematic risk. Among them, NIBL and EBL have lower correlation, so it can be favorable for the investors.
- NIBL has high proportion of unsystematic risk i.e., 14.80% which can be minimized from internal management. Whereas, EBL has high proportion of systematic risk i.e., 96.37%. This cannot be minimized from internal management. Common stock of NIBL is best among these banks due to its highest proportion of unsystematic risk.
- On the basis of testing of hypothesis, there is no significance difference between expected return of selected banks and overall market return.
- 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**

An investor holds shares with an intention of earning money. Finance theory states that, there is some risk associated with investment. While an investment in share has the prospects of earning good return, it also has a risk of losing large amount of equity. A stock market can be a risky place for investor if they fail to know how to protect themselves from potential losses. So, 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 recommendations.

### **5.1 Summary**

Central focus of finance is tradeoff between risk and return. Risk and return is getting considerable attention in 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 he/she 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 rational investors. Higher risk will command by rational premium and the tradeoff 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.

Some of the major findings came out from this study. HBL and EBL are distributing both cash and stock dividend to their shareholders in comparison to NIBL. The market price of the stock of banks is in fluctuating trend. But after the fiscal year 2008/09 the market price of stock of banks is in decreasing trend. The common stock of NIBL has the highest risk and the common stock of HBL has lowest risk. In terms of interbank market capitalization and share in the market NIBL is in the highest position and EBL is in the lowest position. Most of the investors invest only to gain highest return in the future 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.

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.

## **5.2 Conclusion**

The Nepalese commercial banking sector is very competitive. The commercial banks are competing mainly in service in order to put in competitive position. Majority of the branches of commercial banks have been adapting differentiation strategy. The response shows that different branches of the similar bank have adapted different strategy and few of the banks have followed more than one strategy at the same time.

From the study it can be 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 EBL 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 under priced. It shows that all the banks have stock with good investment opportunity. It is also concluded that NIBL and EBL is higher portfolio return and NIBL and HBL is lower portfolio risk.

Expected return of EBL is highest among the other sample banks. Common stock of NIBL is most risky than other sample banks. This study shows that NIBL has highest risk per unit of return. NIBL and EBL have aggressive type of common stock. We conclude that NIBL is in highest position and EBL is in lowest position according to their interbank market capitalization comparison. This study shows that all the common stock of commercial banks is under priced. So investor can buy the common stock of any bank. From the testing of hypothesis of selected commercial bank, there is no significance difference between expected return of selected banks and overall market return. This study shows that NIBL has high proportion of unsystematic risk and EBL has high proportion of systematic risk which cannot be minimized from internal factor. Common stock of NIBL is best among these banks.

CAMP describes the relationship between risk and equilibrium return. In this model, risk free rate plus a premium based on systematic risk of the security is equilibrium rate of return of the stock. All the studied banks expected return is higher than the required rate of return therefore the stock is underpriced security. So, an investor makes buying strategy for this type of stock and all the banks have stock with good investment opportunity.

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. Most of the Nepalese investor is reported lack of adequate awareness on risk and return involved in share investment in commercial bank.

### **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 study.

- 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. So the construction of portfolio between the common stock of NIBL and EBL is recommended to invest due to their higher portfolio return.
- Analysis of personal risk, attitude, needs and requirements will be helpful before making an investment in stock market. 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 worthwhile 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.
- Though these days NEPSE have opened its branches outside valley, they don’t have full authority to do all NEPSE’s related work. They need to take decision according to their head office. So, every branch should be authorized for the every decision related to investors so that all the investors will be benefited outside the valley.
- 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 otherwise it will be meaningless.
- The political problem of the country is another burning issue, which affects the economy of the nation adversely. So the political leaders should think seriously on economic

condition of country rather than their self motive.

- The corporate firm should disclose their actual financial condition, that insisted investors may analysis their performance and they only make a decision whether to invest on their stock or not.

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## APPENDIXES

### Appendix I

#### Calculation of Total Dividend of NIBL

Total Dividend in (Rs.) = Cash Dividend + % of Stock Dividend × Next Year MPS	
2005/06	$20+35.46\% \times 1729 = 633.10$
2006/07	$5+25\% \times 2450 = 617.5$
2007/08	$7.5+33.33\% \times 1388 = 470.12$
2008/09	$20+0\% \times 705 = 20$
2009/10	$25+0\% \times 600 = 25$

Note: MPS of 2010/11 is Rs 600

### Appendix II

#### Calculation of Total Dividend of HBL

Total Dividend in (Rs.) = Cash Dividend + % of Stock Dividend × Next Year MPS	
2005/06	$30+5\% \times 1740 = 117$
2006/07	$15+25\% \times 1980 = 510$
2007/08	$25+20\% \times 1760 = 377$
2008/09	$12+31.56\% \times 816 = 269.52$
2009/10	$11.84+25\% \times 980 = 256.84$

Note: MPS of 2010/11 is Rs 980

### Appendix III

#### Calculation of Total Dividend of EBL

Total Dividend in (Rs.) = Cash Dividend + % of Stock Dividend × Next Year MPS	
2005/06	$25+0\% \times 2430 = 25$
2006/07	$10+30\% \times 3132 = 949.6$
2007/08	$20=305 \times 2455 = 756.5$
2008/09	$30=30\% \times 1630 = 519$
2009/10	$30=30\% \times 1890 = 597$

Note: MPS of 2010/11 is Rs 1890

## Appendix IV

### Calculation of Correlation between NIBL (A) and HBL (B)

Calculation of covariance of return of given two stocks

Fiscal Year	$\left(R_A - \bar{R}_A\right)$	$\left(R_B - \bar{R}_B\right)$	$\left(R_A - \bar{R}_A\right)\left(R_B - \bar{R}_B\right)$
2005/06	0.9627	0.0513	0.0493
2006/07	0.4586	0.7740	0.3549
2007/08	0.2852	0.0830	0.0236
2008/09	-0.8289	-0.0213	0.0176
2009/10	-0.8777	-0.6619	0.5809
			$\sum\left(R_A - \bar{R}_A\right)\left(R_B - \bar{R}_B\right) = 1.0263$

Note:  $\left(R_A - \bar{R}_A\right)$  from table 4.3 and  $\left(R_B - \bar{R}_B\right)$  from table 4.6

We have,

$$Cov(R_A, R_B) = \frac{\sum\left[\left(R_A - \bar{R}_A\right)\left(R_B - \bar{R}_B\right)\right]}{n-1} = \frac{1.0263}{5-1} = 0.2565$$

Now,

Correlation between NIBL and HBL

$$r_{AB} = \frac{Cov(R_A, R_B)}{\dagger_A \times \dagger_B} = \frac{0.2565}{0.8179 \times 0.5116} = 0.6132$$

Note:  $\dagger_A$  from table 4.3 and  $\dagger_B$  from table 4.6

Where,

$Cov(R_A, R_B)$  = Covariance of return between NIBL and HBL

$r_{A,B}$  = Correlation between NIBL and HBL

$\dagger_A$  = S. D. of NIBL

$\dagger_B$  = S. D. of HBL

## Appendix V

### Calculation of Correlation between HBL (B) and EBL (C)

Calculation of covariance of return of given two stocks

Fiscal Year	$(R_B - \bar{R}_B)$	$(R_C - \bar{R}_C)$	$(R_B - \bar{R}_B)(R_C - \bar{R}_C)$
2005/06	0.0513	0.1095	0.0056
2006/07	0.7740	0.9464	0.7325
2007/08	0.0830	0.0959	0.0079
2008/09	-0.0213	-0.5546	0.0118
2009/10	-0.6619	-0.5546	0.3671
			$\sum (R_B - \bar{R}_B)(R_C - \bar{R}_C) = 1.1249$

Note:  $(R_B - \bar{R}_B)$  from table 4.4 and  $(R_C - \bar{R}_C)$  from table 4.6

We have,

$$Cov(R_B, R_C) = \frac{\sum [(R_B - \bar{R}_B)(R_C - \bar{R}_C)]}{n-1} = \frac{1.1249}{5-1} = 0.2812$$

Now,

Correlation between HBL and EBL

$$r_{BC} = \frac{Cov(R_B, R_C)}{\dagger_B \times \dagger_C} = \frac{0.2812}{0.5116 \times 0.6286} = 0.8744$$

Note:  $\dagger_A$  from table 4.6 and  $\dagger_B$  from table 4.9

Where,

$Cov(R_B, R_C)$  = Covariance of return between HBL and EBL

$r_{B,C}$  = Correlation between HBL and EBL

$\dagger_B$  = S. D. of HBL

$\dagger_C$  = S. D. of EBL

## Appendix VI

### Calculation of Correlation between NIBL (A) and EBL (C)

Calculation of covariance of return of given two stocks

Fiscal Year	$(R_A - \bar{R}_A)$	$(R_C - \bar{R}_C)$	$(R_A - \bar{R}_A)(R_C - \bar{R}_C)$
2005/06	0.9627	0.1095	0.1054
2006/07	0.4586	0.9464	0.4340
2007/08	0.2852	0.0959	0.0273
2008/09	-0.8289	-0.5546	0.4597
2009/10	-0.8777	-0.5546	0.5241
			$\sum (R_A - \bar{R}_A)(R_C - \bar{R}_C) = 1.5505$

Note:  $(R_A - \bar{R}_A)$  from table 4.2 and  $(R_C - \bar{R}_C)$  from table 4.6

We have,

$$Cov(R_A, R_C) = \frac{\sum [(R_A - \bar{R}_A)(R_C - \bar{R}_C)]}{n-1} = \frac{1.5505}{5-1} = 0.3876$$

Now,

Correlation between NIBL and EBL

$$r_{AC} = \frac{Cov(R_A, R_C)}{\sigma_A \times \sigma_C} = \frac{0.3876}{0.8179 \times 0.6286} = 0.7538$$

Where,

$Cov(R_A, R_C)$  = Covariance of return between NIBL (A) and EBL(C)

$r_{B,C}$  = Correlation between NIBL (A) and EBL(C)

$\sigma_A$  = S. D. of NIBL

$\sigma_C$  = S. D. of EBL