

# CHAPTER – I

## INTRODUCTION

### 1.1 Background of the Study

The feature of the least developed countries like Nepal is the economy based on agriculture. Nevertheless, the present trend of gauging national economic prosperity is not in the real sense, the agriculture output alone with other things, the declining rate of agriculture productivity has forwarded a new issue for the economic development.

The term development does not merely indicate a particular sector of the economic pattern; it is associated with the materialistic view of growth. In a broad context, it denotes sustainable and result oriented development. The base of sustainable and result oriented development is optimum utilization of exiting resources. It requires collection of funds and appropriate usage of the funds and other resources as well.

In today's modern era, different business organizations are struggling for the existence to earn profit. In this context, finance has become key to their success. Today the business is depending not only on market and on production, as it was in late 1920-1950's. Management has to take different crucial decision regarding the organization's favour. Among them decisions related to financial aspect are very vital because financial decisions affect all the prospects of the organization as a whole and any wrong decision may cause tremendous hamper on the organization. As financial sources are required in every steps of the organization's life management of funds, administration and optimum utilization of the funds are necessary in smooth running of the institution.

The requirement of funds for a business organization depends on its size and operation, generally short term, intermediate term and long-term capital funds are essential for growth and expansion of organization activities. Long-term funds are needs for establishment and growth of the business. These types of funds are generally, raised from financial markets. Intermediate terms are sometimes rising

from financial market and money market, but short-term funds are needed for a short period raised from money market.

Today's business world is entirely different from the one in the past. Changing lifestyle needs, desire of the people are changing day by day and to meet their needs business organization has to produce the product meeting the requirement of the customers. Market for product and services has developed throughout the world and competition among firms alerted their managers to foresee the future performance of society. In today's market many consumers are treating as king. Customers are now quality oriented and they prefer qualitative goods. Technological change has made easier to give many new and surprising materials to the market. Organizations that do not have new technology cannot compete in the market. However, technologies are very costly, so an organization should raise enough money to get new technologies.

Business institution if it is sole generally does not dare to get the funds financed because it is very risky for a single person to bear unlimited liability. Single person rarely has enough money to invest. Therefore, business organizations are generally limited companies with many shareholders or sometimes partnership firm. Partnership firm also cannot manage funds. Therefore, in modern business, public limited companies are one and only one the alternate for investing huge amounts, advent of security market has successfully served in public limited companies to raise funds and then invest in the business. Every shareholder has limited liability up to his ownership amount only or the amount of share he holds. Rest of financing may be financial institution like bank, financial companies etc.

Security market exists in order to bring together buyers and sellers of securities meaning their mechanism are to facilitate the exchange of financial asset. Stock market, which probably has the greatest glamour, is perhaps the least understood. Some observer consider it has a legalized heaven for gambling and many investor consider stock market interesting as a game in which sole purpose is picking winepress.

Lord Keynes was the first person to express stock market as "a game of professional investment ". The main purpose is to win or to make lots of money.

Success comes to those treat it as game to be played not for profit but also enjoyment and sport. Stock market provided both opportunities for the well – informed peoples having better knowledge of market relatives and threats for the unknown people.

To finance the company's requirement financial institution are there in financial market. Financial markets are segment into money market and capital market. Money market instruments include the securities with less than one-year life like Government Treasury- Bill, Short Term Liquid and low risk debt securities. Money market instrument are treated cash equivalent or just cash for short, capital market, in contrast, include longer term and riskier securities. Securities in the capital market are much diverse than found with in the money market.

Capital market further can be divided into primary and secondary market. Primary market deals with new issue of securities. The securities previously issued in primary market are buy and sale in the secondary market. The present study concerned with common stock. Common stock holders are untimely the real owners of the companies and have a junior claim on assets. So, is risky too.

In the context of Nepal, the history of security market began with the floatation of shares by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. in 1973. Introduction of the company Act in 1964, the first issuance of Government Bond in 1964 and the establishment of securities Exchange Center Limited in 1976 were other significant development relating to capital markets.

Security Exchange Center has established with an objective of facilitating and promoting the growth of capital markets. Before conversion into stock exchange it was the only capital market institution undertaking the job of brokering, underwriting, managing public issue, market making for government bonds and other financial services.

Government of Nepal, under a Programme initiated to reform capital markets converted Securities Exchange Center into Nepal stock Exchange in 1993. Nepal Stock Exchange (in short NEPSE), is a non-profit organization operating under securities Exchange Act, 1983.

The basic objective of NPSE is to impart free marketability and liquidity to the Government and corporate securities by facilitating transactions in its trading floor through member, market intermediates such as broker, market makers etc. NEPSE opened its trading floor on 13 January 1994.

Government of Nepal, Nepal Rastra Bank, Nepal Industrial Development Corporation and members are the shareholders of the NEPSE. The authorized and issued capital of the exchange is Rs.50million. Of this Rs.30.41millions has subscribed by Government of Nepal, Nepal Rastra Bank, And Nepal Industrial Development Corporation of the licensed members.

Members of NEPSE have permitted to act as intermediaries in buying and selling of Government Bonds and Listed Corporate Securities. At present, there are 27 member brokers and 2 markets makers, who operate on the trading floor as per the Securities Exchange Act, 1983 rules and byelaws.

Besides this, NEPSE has also granted membership to issue and sales manager securities trader (dealer). Issue and sales manager works as manager to the issue and underwriter for public issue of securities whereas securities trader (dealer) works as individual portfolio manager. At present, there are 11 sales, issue manager, and 2 dealers (secondary market).

The tenure of the membership is one year. The license should be renewing within 3 months after the closure of the fiscal year. If not, it can be within another three months by paying 25% penalty.

Trading on the NEPSE is restricted to listed corporate securities and Government bonds. 125 companies have listed their securities to make them eligible for trading end of the fiscal year 2062. Besides this, NCM mutual fund enlisted its units to make them eligible to trade in the floor.

The listing fee and the annual fee to be paid by the sated companies are based on the capital of the company. NEPSE has adopted an "Open Out-Cry" system for trading. It means transactions of securities are conducted on the open action principle on the trading floor. The buying broker with the highest bid will

post the price and his code number on the buying column, while the selling broker with the lowest offer will post the price and code number on the selling column on the quotation board. The market maker quotes their bid and offer price on their own board before the floor starts. Once the bid and offer price match, contracts between the buying and selling brokers or between the buying and broker or between the brokers and market makers have concluded on the floor.

NEPSE has fixed the board lot of 10 shares if the face value is Rs.100 or 100 shares if the face value is Rs.10. The transaction on regular trading should do on at least one board lot. The transactions of less than 10 shares have permitted only on odd lot trading hours.

NEPSE has adopted a T+two systems, which mean that settlement of transaction, should be done within 2 working days following the transactions day. Settlement will be carryout based on paper verses payment.

The rate of brokerage on equity transaction ranges from 1 percent to 1.5 percent depending on the traded amount.

To obtain membership of stock exchange corporate bodies wishing to be members they will have to submit application in prescribed format within specified time. Along with certificate of incorporation, tax certificate, Memorandum of Association, Articles of association and Concerned Act, rules and regulations in the case of corporate body other than company after the incorporation and the projected B/S and PL a/c for the next three years, last three years audited financial statement. If the year of incorporation is less than three years B/S and P/L a/c of subsidiary company or investment made in its parent company. Share capital details of share investment in any other company than subsidiary, name, address, numbers of share subscribed and the amount invested by shareholders having more than 5 % of the share capital need to submit.

The Board of Directors of NEPSE consists of 9 (nine) directors in accordance with Securities Exchange Act, 1983. Government of Nepal & different institutional investors nominates six directors. Two from the licensed members & the General Manager of the NEPSE is the Ex-Officio Director of the Board.

An investment is a commitment of money that expects to generate additional money. Regarding investment two terms are mostly used to interpret, they are risk & return. Generally, risk refers to the chance that an unfavorable event will occur. If investment risk is considered, risk can be defined as the chance that an outcome other than expected will occur whereas return is a reward of present sacrifice or uncertain benefit of present sacrifice.

Every investment made for getting some return, in the context of investment made on common stock, "The return is usually as dividend plus any change in market price of share (capital appreciation plus cash receipt). The actual returns of investment in common stock may differ substantially. Since, both capital appreciation and cash (dividends) receipts on common stock are uncertain items. Uncertain in return i.e. variability of return from those that are expected defines as risk. Risk is like pornography. It is hard to define but you know it when you see it."(Van Horne & Wachowicz, 1985:892).

"An investor is risk averse to seek higher return for bearing higher risk. Broadly, speaking an investment decision is a trade off between risk and return. "The tough parts of decision making under uncertainty are deciding how much extra return should be required to accept a measurable risk". (Weston & Copeland, 1990:224)

Risk plays a central role in the analysis of investment. Investors often ask about the total risk they will assume an investment & like to know if risk premium provided is enough but they are also concerned with many other issues. First, it is necessary to see if the total risk associated with a single asset is relevant for them. Second the actual contribution of an asset's risk to portfolio risk.

Risk cannot be avoided if investor is seeking higher rate of return, investor will require different rate of return on various securities since they have risk difference. Higher risk of the security, higher the rate of return demanded by the investor. Since ordinary share is more risky investor, require highest rate of return on their investment in common stock. Preference share is more risky than debt. Therefore, the risk and return relationship for various securities is different.

"Setting investment policy involves determining the investor's objective and the amount of wealth that is going to be invested. However, the study focuses on the securities analysis and portfolio selection. Securities analysis involves examining a number of individual securities (or group of securities) from the variety of financial assets. There are many approaches in the securities analysis. The first approach is known as technical analysis.

The second approach is fundamental analysis. In the simplest form technical analysis involves the study of market prices in an attempt to predict future price movements for the stock of a particular firm. Fundamental analysis begins with assailing that the "line" value of financial asset equals the present value of all cash flows that the owner of the asset expects to receive. Portfolio construction involves identification those specific assets in which to invest, as well as determining the proportion of the investors wealth to put into each one-portfolio revision concern the periodic repetition of the previous three steps. That is overtime the investor may choose his or her investment objective, which means that the currently held portfolio may no longer be optimal. Portfolio performance in terms not only the return but also, the risk experience by the investors. Thus, appropriate measures of return and risk as well as relevant standard are needed". (Francis, 1990.234)

## **1.2 Focus of the Study**

Finance is composed of three functions: investing, financing and dividend. All those having even little knowledge about finance are interested in investment. When the matter arises regarding investment, the stock market definitely drags the attention of everybody. In Nepalese context, stock market was assumes at least understood but widely discussed in society. People think investment on stock market is like ever winning game without knowing the reality. However, investments were following by risk. So, an investor must know about the risk before making an investment. This study focuses on the analysis of risk associated with the shares of some commercial banks listed in NEPSE index. Among the 143 companies (in 2062/063), five commercial banks are selected as sample. Analysis has made regarding the price movement of shares of single stock, risk & return. Associated with them, risk and return on portfolio and movement of market.

### 1.3 Statement of the Problem

Investors should make rational decision. For this purpose, knowledge for analysis of common stock is essential. Investor's attitude & perceptions are also considerable for rational investment decision. Many investors have manipulated & exploited by the financial institution & other market intermediaries. Since, they are unknown about norms of security market & cannot analyze risk & return while making stock investment.

In the context of Nepal, investors are also facing the problem of lack of the institutions of providing adequate information about the investment options. After the emergence of NEPSE, SEBO & other financial instructions, these types of problems are some how solved. But the another problem to the Nepalese people is they feel more risk in stock investment than as its real risk it keeps then in dilemma whether they should invest in stock or not and this all collection makes them to not utilize their funds as a result investors are not benefited.

Further, theory says that the stock price in market is guided by the intrinsic value, which is calculated by aid of company results of financial performance such as dividend-required rate of return and growth. In an efficient market condition, stock price is equal to the intrinsic value since the buyer and the seller are fully aware of the figures of the company. Therefore, one can say that market price and financial performance. In addition, correlated but condition here is very different from that.

It is assumed that all stock remains in securities market line (SML) and if he case is not so they strive towards this line If the required rate of return(RRR)and expected rate of return (ERR) are not equal than the intrinsic value and market value of stock will not be equal. Therefore, location of expected rate of return may be above or under of SML because the stock may be under or over valued. The over and under valued stock attracts investor to hold undervalued stock and to sell overvalued, which removes the disequilibrium stage ERR and RRR will be equal.

Whatever, the theory has depicted is not applicable in our context. Where most of the investor does not to interpret the information and so, they cannot make a rational decision regarding transaction of the stock. Therefore, the stock price in



Nepal is determining more by the other factor rather than the financial performance of the concerned companies. Although, stock price of most of the companies are in decreasing trend now a days because of the various external problems but during the last few years many exceptional cases were seen in Nepalese stock market one of them for instance. Nepal Industrial & commercial Bank issued shares at par & with in six months period the shares price rose to more than 500 % that is not only rare but also virtually impossible in an efficient market condition.

A common stock does not guarantee for annul nor it assure for the return of stock that is why it is considered risky. Thus, in Nepalese context the investment decision is really take after analyzing the performance of the stocks, so this study is carry out to address some problems such as:

- ) What should be the compensation they have to receive for bearing a risk?
- ) Which sector is benefiting for investor to invest?
- ) Which companies is providing highest return and minimum risk?
- ) How can one reduce the risk by investing in portfolio rather than in single stock?
- ) What is the Nepal Stock Exchange and how can operation it?
- ) What is the status of the risk and return of each sector enlisted?

Therefore, analyzing all factors it may be possible to suggest the investors that criteria are follow to assess the stock's performance & portfolio analysis to get more return with lowest risk.

#### **1.4 Objectives of the Study**

The main objective of the study is to analyze the risk and return position of the different listed commercial banks. To achieve this objective the following :

- ) to assess the risk associated with common stock investment of the selected commercial bank of Nepal.

- ) to assess the risk compensating return of listed commercial banks.
- ) to examine market price shares the movement.
- ) to analyze the relationship between risk and return of individual stock with the market.
- ) to determine the price conditions of the stocks of selected banks.
- ) to make suggestions to investors for making rational investment decision.

## 1.5 Importance of the Study

Risk and return are the most important factors to be considered while making a decision relating to trade and investment. Therefore, this study is aimed to help the following groups:

- a) **Shareholders:** This study will be helpful to shareholders to get important information about the financial states and performance of the banks and the comparison will help them to identify productivity of their funds.
- b) **Management:** This study will be also helpful to the management to review their individual and sector wise performance and to go deep into matters as to why the performance of their sector is better or worst.
- c) **Policy maker:** Generally, in Nepal Government and Nepal Rastra Bank are the policy maker of security market and banking sector. It helpful suggests to the policy makers to make necessary policies to attract private sector investment in the productive sector and reforms in policies relating to stock trade. Therefore, the study will also helpful to them while formulating policies regarding NEPSE and banking sector. It will help them to find out the problems and prospects in near future.
- d) **Outsiders:** Among outsiders, the customers, financial agencies, stock exchange and stock traders can identify to which sector they should go. The study will be helpful for them to find out the relative worth of different sector investment.

To analyze risk and return is significant to an investor for a wise investment decision. Consequently, the risk and return analysis influences the market price of the stock. Therefore, before making an investment decision, investors must

analyze the risk and return of stock. The analysis of risk return is also helpful to develop an efficient portfolio. In the context of Nepal, the capital market is growing very slowly, the market is not efficient, there are very few magazines or articles related to capital market and very few studies are made on the topics "risk and return". Because of these all things, most of the investors are investing on capital market is just like "Shooting in the Dark".

This study will give information about Nepalese capital market and provide an insight about risk and return and will definitely contributing to increase the analytical power of the investor in capital market. This study is not only to fulfill the T.U.'s, course of MBS, but also to provide some knowledge about the Nepalese stock market developments.

This study will be beneficial for all people who are directly or indirectly related to capital market and helpful for other researchers in the area of investment as it provides suggestion to some extent. It is hoped that it will also contribute although little to Nepalese stock market development. Apart from all these, this study may be a matter of interest for academicians, students, teachers and practices in field of finance.

## **1.6 Limitations of the Study**

Every research naturally has some limitations, so this research is also not free from such defects. Therefore, some limitations are as under:

- ) This study relies on the secondary data and covers a period from B.S. 056/057 to 064/065.
- ) Out of 14 commercial banks (in 2062) listed in the securities market, only five banks' data have been examined for the purpose of the study.
- ) Analysis is based on the tools developed in the context of efficient market condition.
- ) Variation of data published from different source e.g. figures published by NEPSE and companies differ to some degree.
- ) Time and finance constraints are also the major limitation of the study. The report has to submit in a limited time.

- ) Since, this study aims to examine the financial position of SCBNL, EBL, NBBL, HBL and BOK listed in the securities market only the conclusion drawn may not necessarily represent these sectors at the national level. Because there are many more commercial banks that are not listed in the securities market.
- ) The study is to fulfill the requirements of MBS, so the study cannot cover all the dimensions of the subject matter.

## **1.7 Organization of the Study**

This study is divided into five chapters. Which are as follows:

**Chapter 1** explains the introduction and general background, focus of the study, statement so the problem and objective of the study.

**Chapter 2** includes review of literature: in this chapter the review from books, journals, thesis and independent studies are taken into account.

**Chapter 3** is research methodology: It includes the research design, data collection procedure, tools for analysis and method of analysis and presentation.

**Chapter 4** is data presentation and analyses: core it is the main body of the research; it includes data presentation, interpretation and analysis. In this chapter the risk and return of each selected companies is analyzed. The result obtained is compared with industries and market too.

**Chapter 5** includes the summary, finding, conclusions and recommendations of the research.

# **CHAPTER - II**

## **LITERATURE REVIEW**

Research is a continuous process and never ends. The process and the finding may change but research continues. Therefore, analyzing the data and to find something new a researcher must review and know if there are any studies ahead or not. The purpose of reviewing the literature is to develop some expertise in ones area, to see what new contribution he can make and to receive some ideas for developing a research design. Thus the previous studies cannot he ignored because they provide the foundation to the present study. In other words, there has to be continuity in research. This continuity in research is ensured by linking the present study with the past research studies. This Chapter is related with the review of past research works, conceptual framework and other.

The following basis books, magazines, thesis and journals are reviewed:

### **2.1 Theoretical Review**

#### **2.1.1 The Efficient Set Theorem**

Does the investor need to evaluation all possible portfolios? Fortunately, the answer is no the key to why the investor needs to look at only a subject of the available portfolio lays in the efficient set theorem, which states that:

An investor will choose his or her optional portfolio from the set of portfolio that;

1. Offers maximum expected return for varying levels of expected risk.
2. Offers minimum risk for varying levels of expected return.

The set of portfolio meeting these two conditions is known as the efficient set (also known as the efficient frontier).

### 2.1.2 Capital Assets pricing model (CAPM)

"The relevant risk for an individual asset is systematic risk (or market – related risk) because non-market risk can be eliminated by the diversification. The relationship between an asset's return and its systematic risk can be expressed by the CAMP which is also called the security market line (SML)." (K.Thapa, R.Bhattarai and D.Basnet, 2006:198)

Assumption of Capital Assets Pricing Model are as follows:

1. Investors evaluate portfolios by looking at the expected returns & standard deviation of the portfolios during a one period horizon.
2. Investors are never satisfied, so when given a choice between two portfolios with identical standard deviations, they will choose the one with the higher expected return.
3. Investors are risk averse, so when give a choice between two portfolios with identical expected returns; they will choose the one with the lower standard deviation.
4. Individual assets are infinitely divisible, meaning that an investor can buy a fraction of a share if he or she desires.
5. There is a risk free rate at which an investor may either lend or borrow money.
6. Taxes and transactions cost are irrelevant.
7. All investors have the same on the period horizon.
8. The risk free rate is same for all investors.
9. Information is freely and instantly available to all investors.
10. Investors have homogeneous expectations, meaning that they have the same perception regarding the expected returns, standard deviations and co-variances of securities.

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

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

"CAMP is a model that describes the relationship between risk and required rate of return. In this model, a security's expected return is the risk free rate of and a premium based on the systematic risk of the security. The model is as under:

$$R_j = R_f + (R_m - R_f) S_j$$

Where,

$R_j$  = Required rate of return on stock.

$R_f$  = The normal risk is free rate of return. (The real risk free rate of return and risk premium for inflation)

$R_m$  = The expected rate of return on the market portfolio.

$S_j$  = Beta coefficient of stock j

Here, beta is the index of systematic risk. It measures the sensitivity of a stock return to change in returns on the market portfolio. The beta of portfolio is simply a weighed average of the individual stocks beats in the portfolio." (Van Horne and Wachowicz, 1995:100)

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

"The SML equation shows the relationship between securities risk and rates of returns. The return required for any security is equal to risk free rate plus market risk premium times the securities beta ". (Cheney and Edward, 1988:63)

### **2.1.3 Portfolio Theory**

Normally, almost of the investors are risk averse. They need high or satisfactory level of return bearing risk as low as possible. Portfolio theory gives the concept of investing in a rational way that "Never keeps all the egg in a single

basket" i.e. never invest your entire amount in a single asset investment is one or more than one security means diversification or minimizing risk.

"The portfolio theory provides a normative approach to the investors", decision to investment in assets or securities under risk. It is based on the assumption that investors are risk-averse. This implies that investors hold well – diversified portfolios instead of investing their entire wealth in a single assets or security. A portfolio is a combination of individual assets or securities. If investors hold a well – diversified portfolio, then his concern should be the expected return and the risk of portfolio theory is that returns of securities are normally distributed. This means that the mean (the expected value) and variance (or standard deviation) analysis is the foundation of the portfolio decisions." (I M pandey, 1997:329)

In 1952, Harry M.Markowitz proposed the concept of the portfolio theory. He gave very new concept of invest on more than single assets to minimizing risk and maximize return.

The portfolio theory developed by Markowitz is based on the following assumptions:

1. The expected return from assets is the mean value of a probability distribution of future returns over some holding period.
2. The risk of an individual assets or portfolio is based on the variability of returns (i.e. standard deviations or variance).
3. Investors adhere to the dominance principle i.e. for given level of risk investors prefer assets with a higher expected return to asset with a lower expected return. For asset with the same expected return, investor prefer lower to higher risk.

Following are the basic principle of portfolio selection:

1. Investors like high-expected return and low standard deviation common stock portfolio that offer the highest expected returns for a given standard deviations are known as efficient portfolio.
2. If the investors can lend or borrow at the risk free rate of interest, one efficient portfolio is better than all the others are: the portfolio that



offers the highest ratio of risk premium to standard deviation. A risk adverse investor will put part of his money in this efficient portfolio and part in the risk free assets. A risk tolerant investor may put all her money in this portfolio or she may borrow and put in even more.

3. The composition of this best efficient portfolio depends on the investor's assessments of expected returns, standard deviations and correlations. However, suppose everybody has the same information, each investor should hold the same portfolio as everybody else; in other words, everyone should hold the market portfolio.
4. A stock's sensitivity to changes in the value of the market portfolio is known as beta ( $\beta$ ). Therefore, beta measures the marginal contribution of a stock to the risk of the market portfolio.

#### **2.1.4 Dividend Model**

John Lintner developed the dividend model in 1950. In this model following facts were found:

1. Firms have long run target dividend payout ratio. Mature companies with stable earnings generally have high payout proportion of earnings; growth companies have low payout.
2. Managers focus more on dividend changes than on absolute levels. Thus, paying a \$2.00 dividend is an important financial decision if last year's dividend was \$1.00, but not a big deal if last year's dividend was \$2.00.
3. Dividend changes follow shifts in long run, sustainable earnings. Managers "smooth" dividends, transitory earnings changes are unlikely to affect dividend payouts.
4. Managers are reluctant to make dividend changes that might have to be reversed. They are particularly worried about having to rescind a dividend increase.

Lintner developed a simple model which is consistent with these facts and explains dividend payout well. There it is; suppose that a firm always sticks to its target payout ratio. Then the dividend payment in the coming year ( $DIV_1$ ), would be equal to a constant proportion of earnings per share ( $EPS_1$ ).

$DIV_1 = \text{Target dividend}$

$$= \text{Target ratio} * EPS_1$$

The dividend change would be equal

$DIV_1 - DIV_0 = \text{Target change}$

$$= \text{Target ratio} * EPS_1 - DIV_0$$

A firm that always stuck to its target payout ratio would have to change its dividend whenever earnings changed. However, the managers in Lintner's survey were reluctant to do this. They believed that shareholders prefer a steady progression in dividends. Therefore, even if circumstances appeared to warrant a large increase in their company's dividend, they would move only part way towards their target payment. Their dividends changes therefore seemed conform to the following model:

$DIV_1 - DIV_0 = \text{Adjustment rate} * \text{Target change}$

$$= \text{Adjustment rate} * (\text{Target ratio} * EPS_1 - DIV_0)$$

The more conservative company, more slowly it would move towards its target and therefore, the lower would be its adjustment rate.

Lintner's simple model suggest that the dividend depends in part on the firm's current earnings and in part on the dividend for the previous year, which in turn depends on that year's earnings and the dividend in the year before.

### **2.1.5 Capital Market Theory**

The assumptions underlying capital market theory are as below:

- ) Money can be borrowed and lent at the risk-free rate denoted by  $R$ .
- ) All investors have homogeneous expectations concerning expected returns and risk on securities.
- ) Investments are infinitely divisible.

- ) No taxes or transportations cost exist
- ) No inflation exists.
- ) Capital markets are in equilibrium

When we introduce a risk free asset into Markowitz portfolio analysis, given the above assumption, the efficient frontier is changed from a curve to a straight line. This new efficient frontier is called Capital market line (CML).

## **2.2 Reviewed from Books**

### **2.2.1 Investment**

"When current income exceeds current consumption desires, people tend to save the excess. They can do any of several things with these savings. One possibility is to put the money under a mattress or bury it in the ground (our ancestors used to do) until some future time when consumption desires exceeds current income. When they retrieve their saving from the mattress or ground, they have the same amount they saved because money does not multiply itself. The buried even fails to preserve its value against the on going (Prevailing) inflation. Therefore, the saving can be employed in such way that its value is preserved and some additional income can be generated at the future date. Thus, investment is the current commitment of the saving that compensates for the time involved, the expected rate of inflation and uncertainty involved. To states in other words, an investment is any vehicle into which funds can be placed with expectation that they will generate positive returns and/or their value will be preserved or increased." (K.Thapa, R.Bhattarai and D. Basnet, 2006:1)

"Investment in its broad sense means the sacrifice of dollars for future dollars. Two different attributes are generally involved time and risk. The sacrifice takes place in present and it certain. The reward comes later, if all the magnitudes generally uncertain". (Gordon and Jeffery, 1995:789)

Investment can be made on real states or financial assets. Investment on real assets is known as real investment and on financial assets known as financial investment. Real investment means investment on real assets like lands, buildings,

factory, etc. Financial investment means the investment means the investment on financial assets like shares, debentures, warrants, convertibles etc.

"Real investments generally involve some kinds of tangible assets such as land, machinery or factories. Financial investment involves contracts written on pieces of paper such as common stock and bonds. In the primitive economics most investments is of the real variety, where as in a modern economy much investment is of the financial variety."(Gordon and Jeffery, 1975:789)

"The term risk return is closely associated with investment. Investment simply means sacrificing current funds for future returns, bearing certain risk. The investment may be on fixed asset like land, buildings, vehicles, etc. or on precious metals and collectibles or something else. However, concerned with finance the study has focused the term investment as sacrificing current fund on financial assets like shares, debentures, warrants, convertibles, etc for long-term return.

Investors invest their fund on the securities of certain companies for the long run future returns the return is defined as the reward for bearing the risk. Return is the most important outcome from an investment. It measures the investors rate of wealth accumulation i.e. increase or decrease per period. Return can be different way, like holding period return, return from speculation or short sell, capital gain, dividend gain, yield on investments, yield to maturity, etc. these all types of returns are the rewards to investors for bearing the risk . Risk is defined as the occurrence of unfavorable outcomes, which is ever harmful for the business.

Returns to investors are ever followed by risk. Risk ever creates uncertainty. Some of the factors that create investment uncertainties are rate risk, purchasing power risk. Bull-bear market risk, management risk and so on; risk can be diversifiable or un-diversifiable. The levels of risk depend on the condition of the market. If the market is efficient, there is low risk, but if it is inefficient, definitely there will be higher risk. An efficient market is that market, where the security prices reflect all available information about the economy, about the finance market and about specific company involved. In the market, the price of stock reflects its value.

The investors can invest either in primary or in secondary market, by purchasing the securities of different companies. There are many more financial securities like a common share, preference share, debentures, warrants, convertibles etc for the investors to invest. But in our country, common share, preference share, debentures are in practice."(Khil Dev Shrestha, 2005:16)

### **2.2.1.1 Investment on Securities**

The investments environment encompasses the kinds of marketable securities that exists and where and how they are bought and sold. Securities are normally the shares, debentures, preferred stocks, warrants, convertibles or any other financial certificates issued by the companies to public.

These certificates are issued at certain price called per value and are transferable from one person to another. In simple way securities can be understand as the promissory paper that the company gives to the investors after receiving certain rupees as loan or share.

"When someone borrows money from a pawnbroker he or she must leave some item as value of security. Failure to replay the loan (Plus interest) means that the pawnbroker can sell the pawned items to recover the amount of loan (Plus interest) and perhaps make a profit. The terms of the agreement to buy a car, the lender usually holds formal title to the car until the loan is repaid. In the event of default, the lender can resposses the car and sell it to recover his/her costs. In this case of the official certificate of title is issued by the states servers as security for the loans."(Gorden and Jeffery, 1995:789)

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

There are many more varieties of securities available for investment. Some of them are common stocks, preferred stock, bond, warrant, convertibles, and treasury-bills etc.

"Of all the forms of securities, common stock appears to be the most romantic, while fixed income investment revenue may be more important to most of the investors, equity shares seem to capture their interest most.

The potential rewards and penalties associated with equity shares make them an interesting even exiting proposition no wonder equity investment is a favorite topic for conversation in parties and get-together"(Prasana, 1995:93).

### **2.2.2 Capital Market**

In any markets, there are both the demanders and suppliers. Capital market is place, which brings both financial demanders and suppliers directly or indirectly in touch. Commercial banks, financial institutions, investment companies, and individual investors are the suppliers and business houses, agriculture sectors, and industrial sectors are the demanders. This demand and supply is carried out in capital markets. Capital markets are the market where longer-term financial instruments like equities and bonds are raised and traded.

Capital markets are one of the organs of the security markets; security markets are the mechanism that allows supplier and demanders of fund to make a transaction. Their market plays a key role in purchase and sales activities of investors. According to the nature of capital market, it can be classified into primary and secondary market.

"Capital market refers to the financial market in which long-term securities are traded. Specially speaking, securities having life spans of more than one year are traded in the capital market. Long term financial instruments such as stocks issued by corporation are basically traded in capital market."(K.Thapa, R.Bhattarai and D.Basnet, 2006:4)

"The history of capital market in Nepal dates back to the era of Rana Prime minister Juddha shamsher when Gunjaman Singh, the first secretary at Nepalese

Embassy in England returned back to Kathmandu and set up the "Industrial council". The council drafted company act and Nepal bank. Act for the first time in 1936. Biratnagar Jute Mills Ltd. initiated the first public flotation of shares in the securities market in 1937. In the same year, Nepal Bank Ltd also issued the shares. However, at the time in participation on the ownership structure of the corporate sector was restricted mostly of the Rana Family.

In 1951, the "Company Act 1951" was introduced and first Government Bond in 1964 was other important developments relating to capital markets. The Establishment of Securities Exchange Center (SEC) in 1976 was the first and most important attempt by the Government. After the establishment of SEC, Institutional Development of Securities Market in Nepal was start under Company Act.

The function of SEC was very limited on trading Governments Bonds and national savings certificate only, which had predominantly help by Nepal Rastra Bank SEC started secondary market for the corporate securities in 1984.

Securities Exchange Board of Nepal (SEBON) was established on 26 may 1993 after the first amendment in the Securities Exchange Act 1983 became effective. After eighteen years of incorporation, Nepal Government converted Securities Exchange Center into Nepal Stock exchange (NEPSE) on 16 may 1993, under a programmed initiated to develop a competitive and efficient security market. Thus, NEPSE has the basic objective to impart free marketability and liquidity to Government Bonds and corporate securities by facilitating transaction in the trading floor through market intermediaries such as brokers and market markers. After the conversion of SEC into NEPSE, 25 brokers and 5 market markers were appointed. It started ' Open Cry out System' of trading through broker and market marker on 13 January 1994.

Although the growth of stock market is highly relative to the growth of economy, the contribution of corporate sector in the economy is still low due to negligible size of corporate sectors. Yet, there are some rays of hope for substantial development of capital market by exploring more potentialities in the years to come. There should be automation for the efficient trading of the

securities in the security market; Nepal Stock Exchange should also go towards automation."(K.Thapa, R.Bhattarai & D.Basnet 2006:47)

"Capital markets deals in securities, the securities prices have been observed to move randomly and unpredictably. This randomness of security price may be interpreted to imply that investors in the capital markets take a quick cognizance of all information relating to securities prices, and that the security prices quickly adjust to such information. Thus, the efficiency of security price depends upon the speed of price adjustment to any available information. The more speed of adjustment the more efficient the prices. The capital market efficiency may therefore, be defined as the ability of securities to reflect and incorporate all relevant information in its prices.

If capital markets are efficient, then the current share price of a company is 'fair'. There is no question of the share price being under or over-valued. The phenomenon's of under implication for the financial managers are that the shares price being fair in efficient capital market, the question of timing of issue is not relevant. Further, the security prices reflect all relevant information. Therefore, shares price cannot be influenced by irrelevant information such as earnings enhanced by changing the method of depreciation or inventory valuation. The efficient capital market also implies that the financial manager should maximize the net present value in making financial decisions."(I M Pandey, 1997:887)

### **2.2.2.1 Types of Capital Market**

#### **2.2.2.1.1 Primary Market**

The primary market denotes the markets for the original sales of securities by an underwriter to public. The use of the words original sale may be somewhat misleading the public several years ago (and initial have sold common stock to public company) and has now decided to issue additional shares of common stock. (A secondary offering).

These additional shares will be sold in the market and once the sale is completed, the new shares will be indistinguishable from the shares sold in the initial public offerings.



The issuer receives cash that may then invest in the productive assets or the proceeds from the sale may be used for other purposes. The public receives the newly issued securities for the cash invested. Since, in the primary market stocks are traded at par there is no problem in the price. In context of our country, NIDC, capital market is the authorized agent of most companies for initial public offering.

"Primary market is the market for new securities called primary market. The security market transfers the funds savers to investors throughout the primary market. Hence, the transaction of the securities issued for the first time take place in this market.

The main function of primary market is to make the financial capital available to make a new investment in buildings, equipment and stocks of necessary goods. The investment bankers perform the role of an expert in issuing new securities. These bankers make available advice to the business firms regarding the nature of security; maturity and interest rate and underwrite the issue of securities. The commercial banks are not directly involved in this market. Usually the business firms make private placement of securities. The direct sale of securities by the issue of securities to the buyers without underwriting is called private placement of securities." (K.Thapa, R.Bhattarai and D.Basnet, 2006:20)

#### **2.2.2.1.2 Secondary Market**

After securities have been purchased from the primary market, they can be traded in the secondary market. The secondary market comprises the organized security exchange and a specialist facilitates the transaction. The major of all capital market transactions occur in the secondary markets. The proceeds from sale of securities in the secondary market do not go to the organizational issuer instead to the initial owners (sellers) of the securities.

"Secondary market is the market for the existing securities. Second hand securities are bought and hold in the secondary market. Its main function is to provide liquidity to the purchasers of securities. This market remains a center to convert stocks, bonds and other securities into cash immediately. Since the secondary market provides liquidity to the securities, the investors are encouraged to buy securities in the primary market.

The transactions are more in secondary market than in primary market. But these markets involves in mutually closely related way. For instance, if the interest increases or the price of securities increases in secondary market, the interest and price of primary market also increase because of the investment transfer from one market to another according to price and return." (K. Thapa, R. Bharttarai and D. Basinet, 2006:20)

Different factor in secondary market are explained as follows:

### **A) Trading of Stock**

In Nepalese practice, the trading of corporate securities is done through Nepal Stock Exchange (NEPSE) Ltd., which is non-profit organization, operating under the Securities Exchange Act, in 1983. The basic objective of NEPSE is to impart free marketability and liquidity to the Government Bonds and corporate securities. By facilitating transaction in its trading floor through market intermediaries such as brokers and market makers.

Member of NEPSE are permitted to Act as intermediaries in buying and selling of Government Bonds and listed corporate securities. At present, there are 27 member brokers and 2 market makers who operate in the trading floor as per the Securities Exchange Act, in 1983. Beside this, NEPSE has licensed two dealers.

### **B) Efficient Financial Market**

Efficient market is that market where the market prices of security represent the market's consensus estimate of the value of security. It means in an efficient market price valuable than current market prices. Other who does not purchase the security think the value is less than the current prices.

"An efficient market exists when security prices reflects all available public information about information about the economy and about the specific company involved. The implication is that market prices of individual securities adjust very rapidly to new information. As a result, security prices are said to be fluctuating randomly about their intrinsic values. New information can result in a change in the intrinsic value of a security, but subsequent security prices movement will

follow what is known as random walk (change in price n will not follow any pattern)".(Fama, 1970:387-87)

### **2.2.3 Risk**

Risk is defined as the possibility of meeting danger or suffering harm or loss. Risk in the terms of investment means unexpected and unwanted outcomes, which are harmful for the business. In investment, there is a chance of suffering loss it is the risk. Risk can also be defined as the chance that some unfavorable event will occur.

"Risk is defined in Webster's as a hazard a peril, exposes to loss or injury. Thus, risk refers to the chance that some unfavorable event will occur. If you engaged in sky diving you are taking a chance with your life sky diving in risky. If you bet on the horses, you are risking your money. (If you invest in speculative stocks or any stocks) you are taking a risk in hope making an appreciable return. The greater the chance of loss or negative returns the riskier the investment."(Wetson and Bigham.1922:113)

Investment risk is related to the probability of earning of return less than expected return, the greater the chance of low or negative returns and the riskier the investment. However, risk can be defined more precisely and it is useful to do so.

"Risk is something you encounter everyday. Even crossing a busy street involves some risk. With investments, balancing risk and return can be a tricky operation. All investors want to maximize their return, while minimizing risk. Let us face it; putting your hard-earned dollars on the line can be downright frightening.

Some investments are certainly more "risky" than others are, but no investment is risk free. Trying to avoid risk by not investing at all can be the riskiest move of all. That would be like standing at the curb, never setting foot into the street. You will never be able to get to your destination if you do not accept some risk. In investing, just like crossing that street, you are carefully considering the situation; accept a comfortable level of risk, and proceed to where you are

going. Risk can never eliminate, but it can be managed. Let's take a look at the different types of risk, how different asset categories perform the ways and means to help manage risk". ([www.newyorklife.com](http://www.newyorklife.com))

"According to Webster's, risk is the possibility of loss or injury." In investing, risk is the chance you take that the returns on a particular investment may vary. That is another way of saying that there are no sure things when you are investing.

No matter what to decide to do with your saving and investments, your money will always face some risk. You could stash your dollars under your mattress or in a cookie jar, but then you would face the risk of losing it all if your house burned down. You could keep your money in the bank, but buying power of your dollars would barely keep up with inflation over the years, leaving you with possibly less dollars in real terms than when you started. Investing in stocks, bonds, or mutual funds carries risks of varying degrees.

The second fact you need to face is that in order to receive an increased return from your investment portfolio, you need to accept an increased amount of risk. Keeping your money in a saving account reduces your risk, but also reduces your potential reward.

While risk in your portfolio may be unavoidable, it is manageable. The riddle of controlling risk and return is that you need to maximize the returns and minimize risk. When you do this, you ensure that you will make enough on your investments, with an acceptable amount of risk.

So, what constitutes acceptable risk? It is different for every person. A good rule of thumb followed by many investors is that you should not wake up in the middle of the night worrying about your portfolio. If your investments are causing you too much anxiety, it is time to reconsider how you are investing, and bail out of those securities that are giving you insomnia in favor of investments that are a little less painful. When you find your own comfort zone, you will know your personal risk tolerance. The amount of risk you are willing to tolerate in order to achieve your financial goals.

When it comes to your long term financial future though, the biggest risk of all may simply be to nothing, if you don't invest for retirement, or for the college education of your children, or to help meet your personal financial goals then you're most likely guaranteed a future of just scraping by." ([www.biz.yahoo.com](http://www.biz.yahoo.com))

"Risk is generally equated with potential of an investment to generate financial loss; return is the usual measure of performance. As investments that offer higher potential for total return generally carry a higher potential for risk, informed investors do not simply seek to maximize returns. Instead they focus on risk adjusted returns that is the potential returns that correspond to level of the risk with which they are comfortable." ([www.financialservicesic.ubs.com](http://www.financialservicesic.ubs.com))

### **2.2.3.1 Types and Sources of Risk**

The risk is the total that arises on the business. Any type of business, whatever that may of large or small scale suffers risk is because investment is a part of economics and the economical cycle changes frequently. When the market is bullish, there is low risk and when starts declining i.e. bearish there may be high risk. The risk that is talk may by systematic risk or unsystematic risk with investment. Hence, the risk can be classified as diversifiable and un-diversifiable risk.

Diversifiable risk is also known as unsystematic risk and un-diversifiable risk is the systematic risk which is neither avoidable nor be quit. The combination of these two risks is the total risk.

Systematic risk is also known as non-diversifiable risk. This risk arises due to changes in the economic state or due to the changes made by government in fiscal or monetary policies. Some examples of systematic risk are change in interest rate policy by government, increase in corporate tax rate, interest in inflation rate etc.

Unsystematic risk arises due to the many more reasons, like labor strike, entry of formidable competitor in the market, loss on big contract bid, company not being able to manage or obtain adequate raw material on time etc. These types

of risks are normally minor one can be handled by the management, that is why this type of risk is called diversifiable risk. Risk can be measured by using different statistical tools. The most tools in practice are the standard deviation (S.D.)

The standard deviation denoted by is known as specific firms risk and is unsystematic risk, which can be minimized or avoided totally by well diversification. However, the S.D sometimes can mislead for the proper measurement. So, coefficient of variation (C.V.) is also used to measure risk. Coefficient of variation is the unitary risk measure that predicts how much risk is to bear for earning 1 extra unit return. As standard deviation is used to find out unsystematic risk, beta is used for the analysis of systematic risk; logically of the systematic risk is the covariance between the return of individual assets or portfolio and the returns of market portfolio, which is represented by beta.

#### **2.2.4 Return**

Return is the reward to the investors for bearing certain risk is the main target of investment. It can be defined as the after tax increase in the value of investment.

##### **2.2.4.1 Factors Affecting Return**

If you invest at different times, as most people do you also need to know your investments annual percent return to measure one performance against other. To find that figure, you divide the total return from the date of purchase by the amount you invested, to calculate the percentage return returns. Then you divide the percentage return by the number of years you owned the investment. If you invested \$10,000 three years ago, and total return to date is \$2,650, your annualized percent return is 8.83. ( $\$2,650 + \$10,000 = 0.2649 \div 3 = 0.0883$ )

When you buy and sell, also affect your return. If you buy a stock just before its price jumps, the total return will be stronger than if you bought after the price stabilized or before it began to drop. That is one reason your results on a manual find investment may be different from the total return reported for that fund in the financial press or in fund materials.

Taxes also affect return. The total return on a municipal bond may be lower than the total return on a corporate bond, but if you owe no tax on the municipal bond income, it may end up making you more money.

#### **2.2.4.2 Real Return**

The return on we investment portfolio helps to evaluate the progress we making toward we financial goals. For example, if the long-term projections require to we achieve an 8% annual return, we may have to reallocate we assets if we return falls below that mark over a period.

What complicate the picture is that inflation reduces the buying power of your investment return, as well we investment income. If the inflation rate is 3% in a year that your investment provides an 8% return, we real return, or return after correcting for inflation, are 5%. The greater we real return, the larger our account value grows.

Real return is the primary reason that emphasizing capital preservation to the exclusion of growth can leave you short financially over the long term. That is because your return on the most conservative investments rarely exceeds the rate of inflation by a full percentage point and is frequently less. If we are earning 1.75% on an insured money market account when inflation is 2%, we have a negative real return of 0.25%.

Long-term investors are interested in total return, which is the amount we investment increases or decreases, plus any income you received. Using the same example, if we sold a stock investment for a \$2,500 gain after you had collected \$150 in dividends; your total return would be \$2,650.

If we want to compare total return on two or more investments that we bought at different prices, we need to figure percent return. You do that by dividing the total return by purchase price. For example, a \$2,650 total return on an investment of \$20,000 is 0.1325, or a 13.25% return. In contrast, a \$2,650 total return on an investment of \$30,000 is an 8.84% return. Therefore, while each investment has increased you wealth by the same amount, the performance of the

first is more than twice as strong as the performance of the second.  
"(www.pathoinvesting.org)

### 2.2.5 Holding Period Return

If an investor, purchase a stock of any companies and holds it for a certain period. She/he can get return in two ways: one in increase in the value of that stock as compared to initial one. Another is direct cash payment. The increase in the value is called capital gain and direct cash payment is called dividend gain.

"The term from holding an investment over some period is simplifying a cash payment received due to ownership, plus the change in market price, derived by the beginning price. For common stock, we can define one period return as:

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

Where R is the actual return when it refers to a particular times period in the past (future). D is the cash dividend at the end of period. P<sub>t</sub> is the stock price at the time period t; p<sub>t-1</sub> is the stock price at time period t-1. Notice that this formula can be used to determine both actual one period returns (when based on historical figures) as well as expected one period returns. (When based on expected dividends and prices)" (Van Horn and Wachowichz, 1995; 90)

Above explanation is based on the ex–post (historical) data predict the future result. The return can also be defined based on portability of distribution.

"In the financial market, many outcomes are possible. The dominant influence on financial events is the general state of the economy. For illustration regarding the annual regarding the reports of business, we will often find statements such as the general state of economy was depressed last years, causing our company's decline.

The relationship between the expected future state of the economy and the performance of individual firms enables a relationship to be set forth between the state of the economy and the returns from investments in firms. The relationship



between different levels of returns and their relative frequency is called probability distribution. We could formulate a probability distribution for the relative frequency of a firm's annual returns by analyzing its historical returns over the previous year. However, we know that history never repeats itself exactly. Hence, after analyzing relative of frequencies of historical return for the individual company we can form a probability distribution based on historical data plus our analysis for the economy, the outlook for the firm in it industry and any other factors we deem relevant as inputs for our judgment. "(Weston and Brigham, 1992:98-94)

However, this study has limitation that it cannot analyze the overall due to many constraints. The mean of historical returns is used for this measure.

### **2.2.6 Required Rate of Return**

Required rate of return is the minimum return that an investor expects at least not to suffer from loss. If an investor gets below the required rate him definitely, suffer from loss.

"While suffering form loss of return an investor must consider the real rate of return, expected inflation and risk, because consumption is forgone today, the investor is entitled to a rate of return that compensates for this deferred consumption. Since, the investor expects to receive an increase in that real goods purchased later and assuming for the moment zero expected inflation and risk, the required rate of return equal the real rate of return, in which case it would represent the pure time value of money.

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

### **2.2.7 Expected Rate of Return**

The return than investor expects form his investment in the forthcoming future is called rate of return. An investor normally estimates his expected rate return by analysis the trend of return of previously period. (Years)

"If an investment is to be made, then expected rate of return or expected holding period return should be equal or great than required rate of return for that investment. The expected rate of return is based upon the expected cash receipts (e.g. dividend or interest) over the holding period and the expected ending or selling price.

The expected rate of return is an ex-ante or unknown future return. Unless the real rate of return is guaranteed, most investor recognizes this possible rate of returns into a single number called the expected rate of return."(Cheney and Moses, 1996; 33)

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

### **2.2.8 Portfolio Theory**

Normally, almost the investors are risk averse. They need high or satisfactory level of return bearing risk as low as possible. Portfolio theory gives the concept of invest in a very good way that "never keeps all the eggs in a single basket" i.e. never invest your entire amount in a single asset investment on ore than one security means diversification or minimizing risk.

In 1952, Harry M.Markowitz proposed the concept of the portfolio theory. He gave a very new concept of invest on more than single assets to minimizing risk and maximize return.

### **2.2.9 Efficient Set Theorem**

The efficient frontier is the combination of all portfolios called the attainable set of investment opportunities. The efficient frontier is the locus of investment graphed in risk return space, which have the maximum expected rate of return in their risk class or the minimum risk at whatever rate of return is selected. Investors can gain highest level of return without any given of risk. According to Markowitz an investor should seek a portfolio of securities that lies on the efficient frontier set.

"A portfolio is not efficient if there is another portfolio with a higher expected return and the same deviation. If your portfolio is not efficient you can increase the expected return without increasing the risk, decrease the risk without decreasing the expected return or some combination of increase expected return and decreasing the risk by switching to a portfolio on the efficient frontier".(Van Horne,1997:60)

### **2.3 Reviews from Journals**

In context of Nepal, there are very few financial research based journals. There are very limited business magazines, which hardly publish to topic related to the risk and return. Therefore, some foreign journals are taken into account to review the risk and return topics.

The journal of finance, published bimonthly by American Finance Association for many decades is considered in august 1990, an article entitled "Local Returns Factors and Turnover in Emerging stock Markets", by Greet Rouwenhorst was published which is review here:

"There is growing empirical evidence that multiple factors are cross-sectional correlated with average returns than large stock (Bang 1981) Fama and French (1992/1996) and Lakosniskok, Shleifer and Vishny (1994) show that the value/stock with book to market B/M, E/P or C/P outperform growth stock with low B/M, E/P or C/P. Moreover, stocks with high return over the past three months

to one year continue to outperform stocks with poor performance (Jagadeesan and Titman 1993.) The evidence that beta is also compensated for is average returns is weaker". (Hama and Frence 1992)

The interpretation of the evidence is strongly debated. Some believe that premiums are a compensation for pervasive risk factors; other attributes them to firm characteristics or inefficiency in the way market incorporate information into prices. Yet others argue that survivorship or data snooping may bias the premiums.

This paper examines the sources of returns variation in emerging stocks market from the perspective of collecting independent samples, emerging market countries are particularly interesting because of their relative isolation from the capital market of other countries. Compared to developed markets, the correlation between most emerging markets and stocks markets has historically been low, (Harvey 1995) and until recently many emerging countries restricted investment by foreign investors. Interestingly Bekaert and Harvey (1995) find that despite the recent trend toward abolition of these restrictions and the substantial inflows of foreign capital markets have actually become more segmented from world capital of emerging economies are held by local investors, who are likely to evaluate their portfolio in light of local market condition. (Bekaert and Harvey 1997)

On the above background, Rouwenhorst attempts to answer two sets of questions. "The first set of three questions concerns the existence of returns premiums:

- ) Do the factors that explain expected returns difference in developed equity markets also describe the cross section of expected return of emerging market firms?
- ) Are the return factors in emerging market primarily local or they having global components as well?
- ) How does the emerging market evidence factor are present in markets around the world?

The second set of question paper includes:

- ) Is there a cross sectional relationship between liquidity and average returns in emerging markets?
- ) Is the return factor in emerging markets cross section-ally correlated with liquidity?

About the data, Rowenhorst stated that: as April 1997, the emerging market database (FMDI1) of the IFC contains data on more than 2500 firms in 31 emerging markets, but not all are included in the sample eleven countries are excluded because of insufficient returns histories, which leave 1705 firms in the 20 countries that the IFC tracks for at least seven years. For some firm's monthly closing price and dividends is available dating back to 1975. Starting at various points during 1980s the IFC expanded its reporting to include monthly time series for price to book ratios, price earning ratios, market capitalization, trading volume and the number of days per month that stock is traded.

Total return is calculated as the sum of dividend return and price appreciation, using price scaled by a capital adjustment factor, which the IFC computes to correct for the effects associated with stock dividends and right issues, many emerging markets have firms with multiple class of shares carrying different ownership restrictions. Firms with multiple share classes are treated as value weighted portfolio of the outstanding equity securities."(Rouwenhorst, 1991, 1442-43)

"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 markets stocks exhibit momentum. There is no evidence that local market returns betas are associated with average returns. The correlation between the country return factors suggest that premium have a strong local character. Furthermore, global exposure cannot explain the average factor returns of emerging markets.

There is the little evidence that correlation between the local factor portfolios have increase, which suggests that the factors are responsible for the increase of emerging market, country correlation are separate from those that drive the difference between expected return within the markets. A Bayesian analysis of

premiums in developed and emerging markets shows that unless one has strong prior beliefs to the country, the empirical evidence favors the hypothesis that size, momentum and value strategies are compensated for in expected returns around the world. Finally, the paper documents the relationship between expected returns and share turnover examines the turnover characteristics of local returns factor portfolios. There is no evidence of a 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 the return premium do not simply reflect a compensation for liquidity". (Rouwenhorst, 1998:1462)

This study has analyzed the return factors in worldwide stocks markets. However, it concentrates in the various emerging stock, materials. Hence, the article contributes in the area of risk and analysis in common stock investment.

Radhe Shyam Pradhan, in 1993 carried out a study entitled "Stock Market Behavior on small capital Market: A case study in Nepal "(Pradhan, 1993:23-24)

The objective of the study was to assets the stock market behavior and seven commercial banks were taken as a simple for the study. The following were the finding of the study:

- ) Dividend per share and market per share was positively correlated
- ) There is positive relationship between dividend payout and liquidity.
- ) Higher the earnings on stocks, larger the ratio of dividends per share to the market price per share.

This study shows the behavior of stocks price and it shows that price of stocks in volatile in Nepal, so the capital return form these stocks also changes with price of the stock and this will affect the total return generation form the stock.

Mr. Narayan Poudel (April 2002) in his study "Investing in Commercial Banks in Nepal: An assessment of Risk and Return elements" has come up with conclusion that the risk and return characteristics do not seen to be the same for all the shares review. He further adds the shares with larger standard deviations seem

to be able to produce higher rates of return. This portion of unsystematic risk is very high with the shares having negative beta coefficient. The risk unit of return, as measured by coefficient of variation, is less than of the market as whole for the individual shares, most of the shares fall under the category of defensive stocks, (having beta coefficients less than 1)

Mr. Timilsina (2001) in an article capital market development and stock price behavior in Nepal comes up with the conclusion that the market prices of per share depends on EPS as well as on DPS but DPS is more price sensitive and it will have direct and immediate response in the market. However, market values of share computed based on EPS are near to the observed market price of equity share reveal than the stock market.

Nawaraj Pokhrel (1999) in an article "stock market is doing pretty well, ". Explained that the investment made in the shares of Himalayan Bank Ltd. In October last year before Dashain has fetched twice as returns now. If I had invested the same capital on the shares of Bank of Katmandu Ltd., the returns would have been three times as much.

If the investment were on the shares on Nepal Lever Ltd. or Bottlers Nepal (Terai), the capital appreciation would be more attractive than that. This is how a stock investor shared his feeling has deposited his saving into attractive scheme of a finance company that would get him 14% interest per annum."

Mr. Pokhrel in this topic "was it better to invest in common stocks or not found that the shares of individual company showed very good performance. Even the market price of nearly dead MCM, Mutual fund has been doubled in the year. NEPSE index showed upward trend for all shares in this period.

Mr. Pokharel gave following reasons behind the appreciation of shares price.

- ) Reasonably same companies have rewarded the shareholders overtime.
- ) Reduction on interest rate of money market diverted saving toward stock investment.
- ) Financial institutions and co-operative have provided loan to the stock investors taking their shares as collateral. At the time, healthy speculation is making the market interesting.

- ) Investors are being aware about the system. They tend to analyze the fundamentals of companies and are appearing more rational in their investments decision than they were before.
- ) Regulating authority is enforcing the required reform measure to maintain transparency.
- ) Continuity maintained in the government policy is an added advantage the market.

Finally, Mr. Pokhrel suggested that the capital market needs more of infrastructures investment than institutional 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 Governmental Bonds. The institutional investors will then automatically pour in.

Mr. Ghimire (2001) in a topic share market an investor prospective has pointed out some important trends in our capital market. He has concluded that the Nepalese shares prices are decreasing because of many more unbalanced factors. He has given such a lovely and realistic logics about our market.

"Currently share price are on the decline. On the March 3<sup>rd</sup> 1999 index was 178081(base feb.1994-100), it was the highest on December 2000 at 545025 and then within five months on May 17, 2001 it plunged to 334.29. The major reason behind the movement in the index is the domination of banking sector scrip in Nepali stock exchanges transaction. The price changes in bank shares have mostly no justifications. When they increased, it was after declaration of bonus dividend or interim dividend i.e. after the confirmation that return is imminent.

When we analyze the Nepali share we find that all the components of this market are lame and weak and perhaps for stake. The Securities Board the supreme body of this market gave the permissions to Taragon Regency hotel to increase the number of shares issued from 8 millions to 12 millions units. After the public oversubscribed the initial offer, despite the advice from experts not to do repeat the mistake, the board gave almost similar permissions to Hotel Radison and now public investors are again cheated. The Board has thus repeatedly supported companies in their activities that lead to cheating the investors.



The components in the market are Nepal Stock Exchange Ltd. The primary requirement now is to privatize this institution immediately to abstain the interest of the public in capital market and for its healthy growth. Its work is primitive.

Weak practices are seen in its management. It seems to be without any regulatory function when judged by its dealing towards listed companies. Even the share registrant and market maker (NIDC capital market) have not held its AGN for fiscal year 1999/2000. Still, the board has not been able to take any action. There are no set rules (or they are not implemented) for transaction processing and certificate delivery. It could take months for the certificate to arrive from the companies. These mismanagement practices cannot help the growth of share market.

The broker organizations are very private, and run a one – man show. Most of them do not have real education and knowledge about the market. They do not have analysis to make suggestions to the investors. Their primary motto is to make transactions and earn commission. They have not paid a single rupee from the earning they have made from this market for its promotion. They have not even spent on their basic office automation and systematic transactions recording. One of the reasons for such aloofness is the security provided by NEPSE and board hakims, denying other qualified institutions a free entry into the market.

The public has invested risk less, they just believe what one broker or the investor says about scrip. They must study (be informed) about the company before making the investment. One of the prime motives for the investment is to earn return on it. Capital market is a long-term concept. The investment on secure and good company dose yield good return in the long run". (Ghimire, 2001)

Finally, he concluded that the general investor should be alter and aware to these situations. They must receive the financial information before they investment and rationally.

Next, here is an article in the “Stock Review” Shrawan 2061, entitled “Study and Experience less Investment” by Bishnu Balbase. He concludes that the investor should properly analyze the company’s performance on which stock he is going to invest.

Mr. Belbase in his article has started the actual behavior of Nepali investor towards the investment decision. According to Mr. Belbase, "If there is no long term thinking and preparation certainly it will be bad business. Today's business is changing faster than information and technology, because of this repaid change, it is hard to find the person who knows much more about the business. In this context, it is really challenging for those who know very little about profit/ loss book value and tried to be shareholder.

Share market is only the market that is affected by Nepal's Peace and security, political condition, change of the Government and the change occurred in the world stock market.

In such condition, how investment made on the share can be made secure? The profit and loss of the company should be watched by the efficient person or by the experts. However, wrong information should not be realized. The most important thing is to make own inquiry about the companies and investment on them. For example, we find many frauds in the stock markets that used to say this is Mount Everest by showing the Fishtail (Machhapuchhre). The cleaver man is that who save himself from such persons." (Balbase, 2061)

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

## **2.4 Review of Past Researches**

However, risk and return is not a new concepts for financial analysts, in context of Nepal and its very show growing capital market, very little studies are made regarding this topic. Some studies are made as a thesis for the partial fulfillment of Master Degree in T. U., which are reviewed here.

Mr. Gopal Bhatta (1995) has conducted a study entitled "Assessment of performance of listed companies in Nepal. Mr. Bhatta conducted the study on 10 listed companies including data from 1990 to 1995. The major of the study was to

objective “To Analyze the Performance of Listed Companies in terms of Risk and Return”.

From the study, Mr. Bhatta address the following regarding the risk and return analysis of different stocks.

“A highly significance positive correlation- ship has been addressed between risk and return character of the company. Investors generally accept higher return from those stocks, which associates higher risk. Nepalese capital market is not efficient one so the stock price does not contain all the information related to market and the company. Neither investor analyzes the overall relevant information relating to the market company itself, nor do the members of the stocks exchange try to disseminate the information. Therefore, the market return and risk both may not represent reality.

Investors in Nepal have not yet practiced to invest in portfolio of securities. An analysis of the two securities portfolio shows that the risk can be totally minimized if the correlation is perfectly negative.

In this situation, the risk can totally be diversified, but when there is perfectly positive correlation between the returns of the two securities, the risk is un-diversifiable. The analysis shows some has negative correlation and has positive one. Negative correlation between securities return is performed for diversification of risk.”

Based on finding, Mr. Bhatta concluded, “Analysis of risk and return shows that many companies have higher un-systematic or specific risk. There is a need of expert institution, which will provide consultancy service to the investor to maximize their wealth through rational investment decision.” (Bhatta, 1995, 172)

Lastly, Mr. Bhatta has recommended the following points to improve the market efficiency.

- ) Develop the institutions that consult investors for risk minimization.
- ) Establish an information channel on NEPSE and
- ) Make proper amendment on trading rules.

To some extent Bhatta focused in the analysis of risk and return in common stock investment. However, due to some other aspects of analysis investor cannot easily assess the result. Indeed study did not focus the viewpoint of investors rather it concentrates the companies and stock market. However, this study also explores some dimension for further researcher in this subject.

Mr. Jeet Bahadur Spokota (2000), entitled return analysis in common stock investment” is a very closely related to this study. In this study, he has included eight commercial banks.

Mr. Sapkota in his study has concluded that “commercial banks stocks is the most risky security and life blood of stock market because of the higher expected return, CS attracts more investor. Private CS holders are the passive owners of the company. However, the private investor plays a vital role in economic development of the nation by mobilizing the dispersed capital remained in different from in the society. As overall economy, Nepalese stocks market is in emerging state. Its development is accelerating since the political change in 1990 in effect of openness and liberalization in national economy. But lack of information and poor knowledge, Nepalese private investors can not analyze the securities as well as market properly”. (Sapkota, 2000: 89)

Still most of the Nepalese private investor invests in single security. Some of the investors use their fund on two or more securities but they do not make any analyze of portfolio. Some of his recommendations are reviewed below:

To private investor

- ) Stocks market investment is a risky job. Although, there is a chance of more return than of accepted, there is also a chance heavy loss. So, it should really only investment money in the stocks market that it need not for other communities. The stock market is undoubtedly risk in the short term and investor needs to be repaired for it.
- ) Private investor should try to work out their attitude towards the risk of various investments strategies.
- ) Investor needs to diversify their fund to reduce risk. Proper construction of portfolio never takes any considerable loss.

- J) However, portfolio construction is a dynamic job because efficient portfolio depends on market movement or sociopolitical change. For the portfolio construction select the stocks that have similar stocks can not diversify risk properly, in this context select the CS of banking industry and the CS trading industry.

To Government of Nepal

- J) GN needs to manage the trading of government securities in NEPSE in spite of NRB. Government securities are assumed as risk free security and trading of these securities at the same place to investor so that they can diversify their fund properly to construct optimal portfolio. This will also increase the strength of stock market and more specifically, NEPSE as well.
- J) Government needs to amendment of rules and regulation regarding stock market in time to time. Without implementation of rules and regulations, it is meaning less to do any thing. There are serious problem in implementation hence GN needs to monitor to make active to all the components of stocks as well as capital market properly.

Mrs. Pramina Pandey (2000), in her entitled “Risk and return of common stock investment” of six insurance companies concluded that," on the basis of market capitalization of NIC is the biggest one, expected return on the common stock of NIC is maximum 65.39%. This high rate of expected return is due to unrealistic annual return in 2050/051. Expected return of common stock of HG1 and ELC is lowest with negative value. In overall industries sector expected of finance and insurance sectors are unexpectedly high return is over 50%. Annual realized return is unexpectedly high in the F/Y 2050/051 and then declines in the preceding years”.

About risk, she had concluded, “NIC is regarded as the most risky security. As we know higher the risk higher return, NIC expected return is highest which ultimate the standards deviation to be highest and return is lowest one. Standard deviation to be highest and ELC’s risk and return are lowest one. Standard deviation is not only a single measure coefficient of variation also, measure risk is known as relative measure of risk. Minimum CV is the best for investment in

single security. NIC can be taken as a best for investment as per minimum CV and its return is also quite high, more than 50%.”

Stocks have drop dramatically when the market falls are those with high beats. The goods news is that these same high beta stocks recover more quickly when the market changes from bear to bull.

She has recommended the following points:

- ) Administration should be made further efficiency to check the performance of individual companies. Flow of information should be more regular.
- ) There is complete absence of sensitive index of stock prices and government is not much concerned to conduct a survey of investor in Nepal. Whatever is the drawback, stock?

Market investment is important to improve the lives of people and push the economic state of the country. So, long with government should understand their respective roles and should give proper attention to play their roles with sincerity.

Mr. Khill Dev Shrestha (2005), entitled “risk and return analysis of listed companies” is a very closely related to this study. In this study, he has included five commercial banks and data from five years.

Mr. Shrestha in his study has concluded, “Price of the stocks of selected companies are under priced which indicates that the investor should select these security and implement the buy and hold strategy. With the principals of finance these stock should shoe upward price movement but the actual market condition does not seems so due to the present economic and political condition.

In the regard of industry wise market capitalization; banking sector has the highest market capitalization, it means there is maximum total market value of banking sector at specific point of time.

The Nepalese stock market is small and growing slowly, so there is a need of efforts to be made from various sectors like Government Companies and NEPSE itself. Present law and other situation have badly hampered the economy

of Nepal and ultimately this has affected the Nepal Stock Market so Government has a leading role for solving crisis of the country. Government should make reforms in the policies related to economic development as per the need of the situation. Like wise the companies should disclose their actual financial condition so that insisted investor may analyze their performance and then only make a decision whether to invest on their stock or not.

In addition, NEPSE needs to make and strictly follow some standards for enlisting a company in the stock exchange. So that, investors may feel secure viewing that the listed companies have passed some criteria for enlisting in the NEPSE”.

As the entire thesis reviewed above the thesis of Gopal Pd.Bhatta has focused his study especially on the analysis of the performance of listed companies. The thesis of Jeet Bahadur Sapkota is focused on the analysis of risk and return of joint venture commercial banks. The thesis of Mrs. Pramina Pandey is focused on the analysis of risk and return of insurance companies listed in NEPSE index. In addition, the last on thesis of Mr. Khil Dev Shrestha is focused on the analysis of risk and return of commercial banks listed in NEPSE index.

Hence, from above review it is found that Nepalese capital market is just growing up and all related sector, personnel, organization have to work hard honesty for its development.

In this study, the performances of shares of five commercial banks are analyzed, which are listed in the NEPSE index. The data is taken from 056/057/ to 2064/065 and the analysis is made of individual stocks, portfolio of different stocks and their relation with the entire market.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

“Research means to research the problems again and to find out something more about the problem.” (Kothari, 1999: 10)

“Research methodology refers to the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind it. Thus, his research methodology is a way to systematically analyze so that we can solve the research problem.” (Howard K. Wolf and P.R. Pant, 1999:203)

"Research methodology states the systematic procedure and process applied in entire study, it refers the various sequential steps to be taken into consideration by a research in studying a problem with a certain objectives in mind".

The research methodology is the systematic way of solving research problem. It refers to the overall research processes, which a researcher conducts during his/her study. It includes all the procedures from theoretical underpinning to the collection and analysis of the data. For the research, both the descriptive and analytical types of research are employed. A descriptive analysis is used because the secondary sources of empirical data have been employed to analysis the variable, which is related to performance, growth, and prospects of secondary market.

As most of data are quantitative, the research is based on the scientific models. It is composed of both parts of technical aspect and logical aspect, based on historical data. Research is systematic and organized effort to investigate a specific problem that needs a solution. The process of investigation involves a series of well thought out activities of gathering recording analyzing and interpreting the data with the purpose of finding answer to the problem. Thus, the entire process by which we attempt to solve problem is called research.

Researcher can be concluded based on primary and secondary data. Here in the study all, the data are secondary and observed data is analyzed with using



appropriate financial and statistical tools. Outcomes are presented in simple way. In this study, the research design, data collection procedure and analysis are described serially.

### **3.1 Research Design**

The research is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. This study aims at analyzing risk and return of selected listed commercial banks and their relationship with market. Different statistical tool have been used for the purpose of this study.

### **3.2 Population and Sample**

#### **3.2.1 Population**

Population of the study consists of all the commercial banks listed in the securities market during nine-year period from 056/07 to 064/065. A total number of 14 listed commercial banks thus constitute the population of the study.

#### **3.2.2 Sample**

Out of 14 listed commercial banks, only five listed commercial banks are consists sample of this study.

### **3.3 Data Collection Procedures**

All the data necessary for the research is collected from secondary sources. Data related market prices of shares, market capitalization and movement of NEPSE index etc. are taken from the Trading Report Published on NEPSE. Other data of related companies are taken from their Web Sites.

The collection procedure is summarized below:

- ) Financial documents provided by companies.
- ) Trading Report published by Stock Exchange Limited.
- ) Other related web sites.
- ) Materials Published in paper and magazines.
- ) Other related books.

### **3.4 Tools for Analysis**

Before analysis, data are presented systematically in the formats of tables, charts and graphs. For analysis, following factors and statistical or financial tools are used:

#### **3.4.1 Market Price of Stock (MPS)**

If the market prices of share of companies are followed then it can be found that there are three types of price high, low and closing. For the analysis, single one is needed, so average price (that of high and low) or closing price approaches can be used. Here. In this study, the closing price is taken as the market price of the stock, which has specific time of 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 each transaction in the whole year are essential. This is tedious and impossible too, considering the data availability and maintenance. Hence, the closing price is used as the market price of stock, which has a specific time spend of one year and the study has focused in annual basis.

#### **3.4.2 Dividend Per Share (DPS)**

Dividend is relevant during the computation of rate of return, which is a reward to the shareholders for their investment. If a company declares only the cash dividend, there are no problems to take the dividend amount. However, if the company declares stock dividend, 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 because of increased number of stocks. To get a real amount of dividend following models have been used:

Total dividend amount = Cash dividend + stock dividend% × next year's MPS

### 3.4.3 Holding Period Return (HPR)

Return is the income received on an investment and any change in market price, usually expected as a percent of the beginning market price of the investment.

Symbolically,

$$\text{HPR or R} = \frac{D_t + P_t - P_{t-1}}{P_{t-1}}$$

Where,

$P_t$  = Ending price of the stock (price at time t)

$P_{t-1}$  = Beginning price of the stock (price at time t-1)

$D_t$  = Dividend received at time t

### 3.4.4 Expected Rate of Return $\bar{R}_j$

One of the main objectives of the study is to determine the expected return on the investment in common stock. Generally, this rate is obtained by of year. It can be calculated it using following formula.

Symbolically,

$$\bar{R}_j = \sum_{j=1}^n P_j R_j$$

Where,

$\Sigma$  = Sign of Summation

$\bar{R}_j$  = Expected rate of return of stock j

$P_j$  = Probability distribution of security j

$R_j$  = Returns on stock j

In other way, when time series data are given, it can be calculated expected return as:

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

Where,

n= number of year

### 3.4.5 Measures of Investment Risk

However, risk is defined simply as unfavorable outcomes the investors perceive risk in many different ways. A stockholder seeks risk if company's yield is below his expectations and below the required rate. A bank may suffer risk if the lending is not recovered. A creditor may suffer from risk if their investment changes to bad debt and so on. However, normally in calculation a traditional approach is used to calculate risk, which is standard deviation. The standard deviation is the square root of the variance of the returns around the mean. The variance of a distribution of holding period return is calculated by using following formula.

$$\sigma_j^2 = \sum P_j (R_j - \overline{R}_j)^2$$

Where,

$P_j$  = Probability distribution of the observation (returns)

$R_j$  = The holding period return on stock j

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

$\sigma_j$  = The standard deviation that measures risk

### Procedure of Calculating Standard Deviation

#### When probability distribution is given

a. Calculate the expected rate of return

$$\overline{R}_j = \sum_{j=1}^n P_j R_j$$

b. Calculate the deviation between required and expected return

$$\text{Deviation } (\dagger) = R_j - \bar{R}_j$$

- c. Calculate variance by multiplying the probability with the square of deviation and make the summation.
- d. Finally, calculate standard deviation by making the square root of variance.

**When time series data are given**

A.  $\bar{R}_j \times \frac{1}{n} \sum R_j$

B. Deviation =  $R_j - \bar{R}_j$

C. Variance =  $\sum R_j \times \bar{R}_j \div n$

D. Standard deviation  $(\dagger_j) \times \sqrt{\frac{\text{Variance}}{n}}$

**3.4.6 Coefficient of Variation**

"It is the ratio of standard deviation of returns to the mean of that distribution. it is a measure of relative risk".(Van Horn and Wachowicz p. 94) .  
 "The higher the coefficient of variation, the higher the relative risk of investment."(Gitman, p. 167)

Symbolically,

$$CV_j = \frac{\dagger_j}{R_j}$$

Where,

$CV_j =$  Coefficient of variation of stock j

Coefficient of variation is the unitary risk measure. It gives the result regarding the unit of risk to bear for earning 1 unit or return.

### 3.4.7 Beta

"It is an index of systematic risk. The measures the sensitivity of a stock's return on the market portfolio". ( Van Horn and Wachowicz p. 94)

The standard deviation is a measure of the total risk of the assets, i.e. it measures the dispersion of returns around the mean return. Earlier it was suggested that rational investors should expect higher returns at higher level of investment risk. Does it mean that the higher the standard deviation of assets returns the higher the required return? The CAPM suggest that the total risk as measured by standard deviation contain two parts: diversifiable and non-diversifiable risk the total risk are equal to the sum of its parts.

$$\text{Total risk} = \text{Unsystematic risk} + \text{Systematic risk}$$

Logically the systematic risk is covariance between the return of an individual asset or portfolio and the returns of market portfolio. The measure of systematic risk is represented by beta and can be calculated by following formula:

Symbolically,

$$S_j \times \frac{\text{Cov}(R_j R_m)}{\sigma_m^2}$$

Where,

$S_j$  = Beta Coefficient of stock j

$\sigma_m^2$  = Variance of the market return

$\text{Cov}(R_j R_m)$  = Covariance between returns on stock j i.e.( $R_j$ ) and return market i.e.( $R_m$ ) and is calculated as:

$$\text{Cov}(R_j R_m) = \frac{(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1}$$

This beta coefficient is a measure of non-diversifiable or systematic risk. An asset or a portfolio with a beta greater than 1 is considered aggressive (more

risky than the market). An asset or portfolio with a beta less than 1 is considered to be defensive (less risky than the market).

### 3.4.8 Market Return ( $R_m$ )

Market return is the return in overall portfolio, which can be obtained by talking different between the market indexes (i.e. NEPSE index). Here, market dividend is ignored.

Symbolically,

$$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$$

Where,

$R_m$  = Return on market

$NI_t$  X NEPSE index, at time t period.

$NI_{t-1}$  = NEPSE index, at time t-1 period.

### 3.4.9 Portfolio and Return

A portfolio is a collection of investment securities. Portfolio deals with the selection of optimal i.e. portfolio that provide the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return.

Calculating and analyzing portfolio risk is not straight forward as calculating portfolio expected return. It required a long process for its calculating and analysis.

### 3.4.10 Portfolio Risk

The portfolio risk respected by  $\sigma_p$  is the standard deviation associated with the alternative on which the investment is made. The formula for the calculating of portfolio risk for two assets case is given by:

$$\sigma_p = \sqrt{w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + 2w_A w_B \text{Cov}_{AB}}$$

Where,

- $\sigma_p$  = Standard deviation of portfolio A and B
- $\sigma_A^2$  = Variance of asset A, i.e. risk of assets A
- $\sigma_B^2$  = Variance of assets B, i.e. risk of asset A
- $w_A$  = Weight of assets B, i.e. investment on asset B
- $\text{Cov}_{AB}$  = co variation between assets A and B

The formula for the n asset case is given by:

$$\sigma_p^2 = \sum_{i=1}^N w_i^2 \sigma_i^2 + \sum_{i \neq j} w_i w_j \text{Cov}_{ij}$$

The formula for the calculation of variance for assets case is given by:

The portfolio risk is given as;

$$\begin{aligned} \sigma_p^2 = & w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + w_C^2 \sigma_C^2 + w_D^2 \sigma_D^2 \\ & + 2w_A w_B \text{Cov}_{AB} + 2w_A w_C \text{Cov}_{AC} + 2w_A w_D \text{Cov}_{AD} \\ & + 2w_B w_C \text{Cov}_{BC} + 2w_B w_D \text{Cov}_{BD} + 2w_C w_D \text{Cov}_{CD} \\ & + 2w_C w_E \text{Cov}_{CE} + 2w_D w_E \text{Cov}_{DE} \end{aligned}$$

And, the variance is given as;

$$\sigma_p = \sqrt{\text{variation of portfolio}}$$

### 3.4.11 Portfolio Return

While the portfolio returns, is straightforward weighted average return of individual securities standard deviation. To take a weighted average of individual security standard deviation would be to ignore the relationship, or correlation between the returns of the two securities.



This correction as an effect on the portfolio expected return complicates our calculation of portfolio standard deviation by forcing us to calculate the covariance between returns for every possible pair wise combination of securities in the portfolio. However, this dark could of mathematical complication of contains a positive aspect correlation between security provides for the possibilities of eliminating some risk without reducing securities potential returns.

Portfolio return is the total return gained from investment on different assets. The return on certain portfolio is calculated by using following formula:

$$R_p = XW_A R_A + \Gamma W_B R_B + \Gamma \dots \Gamma W_N R_N$$

Where,

$R_p$  = Expected return on portfolio

$R_A$  = Expected return on asset A

$R_B$  = Expected return on asset B

$R_N$  = Expected return on asset N

$W_A$  = Weight of investment on assets A

$W_B$  = Weight of investment on assets B

$W_N$  = Weight of investment on assets N

### 3.4.12 Capital Assets Pricing Models (CAPM)

CAPM is the model, which gives the required rate of return of common stock, comparison of required rate of return and expected rate of return gives the result whatever the stock is over priced or under priced. For the analysis, Risk Free Rate of return is needed i.e.  $R_f$ . For the study the return on Treasury bill issued by Nepal Rastra Bank is taken as risk free return which approximately 6%.

$$R_j = X R_j + \Gamma R_m + \Gamma R_f + \beta_j$$

Where,

$R_j$  = Required rate of return on stock j

$R_m$  = Return on market

$R_f$  = Risk free rate of return

$S_j$  = Beta coefficient of stock j

### 3.4.13 Hypothesis

From the theoretical framework discussed earlier, the following hypothesis has been developed and tested.

**Null Hypothesis  $H_0$ :** There is no significant difference between the average return of the selected common stock and overall market portfolio return.

**Alternative Hypothesis  $H_1$ :** There is significant difference between the average return of the selected common stock and overall market portfolio return.

## **CHAPTER - IV**

### **PRESENTATION AND ANALYSIS OF DATA**

In the previous chapter: introduction, review of literature and research methodology is discussed. This chapter explains the presentation of data and their analysis. In this study, the data of market price of the shares of selected companies, risk and return of their, cash dividend paid and market return, NEPSE index, present condition of the many market sector and many related terms are presented and analyzed. Tables and diagrams are used to make the result more simple and clear wherever necessary.

#### **4.1 Risk and Return of Selected Banks**

With a view to analyzing the risk and return, the realized rate of return, expected return, standard deviation as well as coefficient of variation of each selected commercial bank listed in the securities market have been on the data ranging from the year 056/057 to 064/065 pertaining to the selected companies listed in each sector. The end price and the dividend of the basic data for the listed companies thus, constitute the basic data for the analysis of the risk and return of each bank.

##### **4.1.1 Bank of Katmandu Limited**

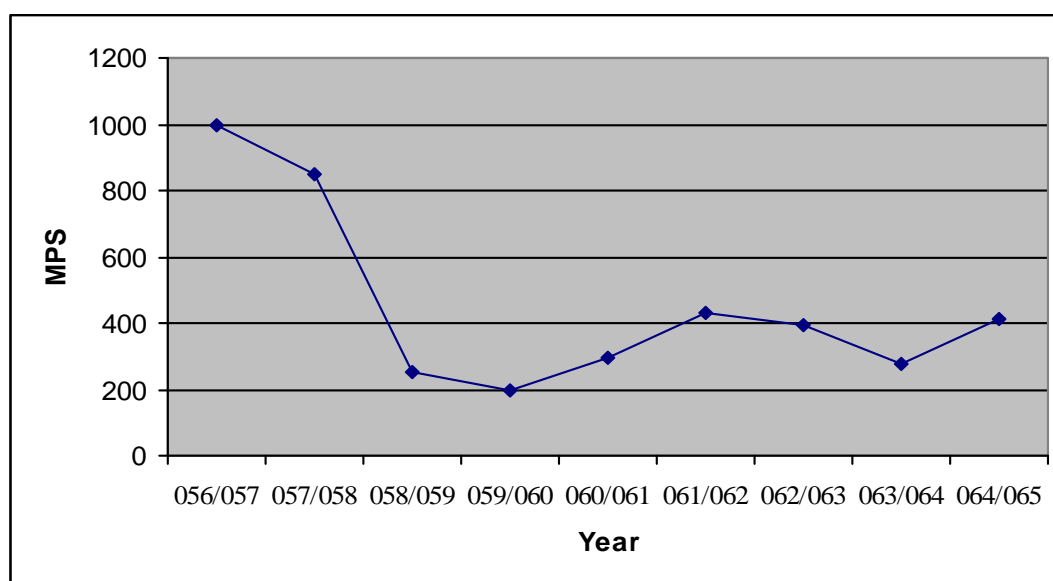
BOK is private commercial bank established under company act of Nepal. The bank was incorporated in 1994 AD (2050 B.S.) and was listed in the NEPSE in 1998 (2054/04/02 B.S.). Its authorized capital is Rs. 1000000000; issued capital is Rs. 500000000 and paid up capital is Rs. 463580900. Both the par value and paid up value per share is Rs. 100. It is a first private commercial bank with totally Nepalese shareholders. The central office at Kamaladi, the main theme of the bank is "we make your life easier".

**Table - 4.1**  
**MPS and DPS of BOK**

Year	Market Price per Share in Rs.			Dividend per Share (DPS)	Stock Dividend	Total Dividend
	High	Low	Closing			
056/057	1000	261	998	31.58	-	31.58
057/058	1800	740	850	0	-	0
058/059	850	225	254	20	-	20
059/060	300	195	198	5	-	5
060/061	310	175	295	10	-	10
061/062	472	280	430	15	-	15
062/063	420	150	395	15	-	15
063/064	350	190	280	14	-	14
064/065	450	290	410	20	-	20

Source: NEPSE

**Figure - 4.1**  
**Year-end Market Price Movement of the Common Stock of BOK**



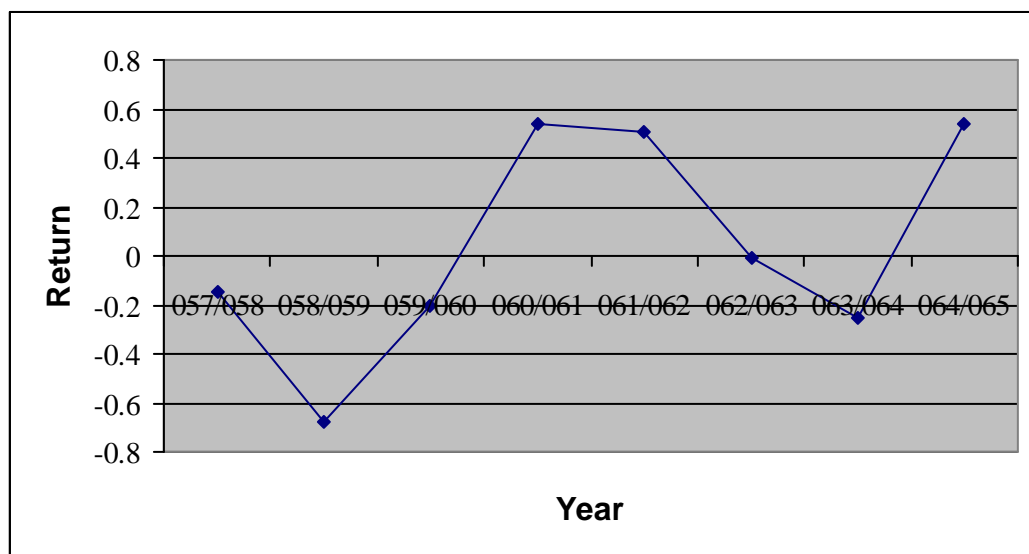
From the above trend, that the price of share is highest in the year 2056/057 while it is lowest in the year 2059/060. The trend of the share price decreasing to the year 2059/060 and then after it seems to be in increasing trend. In the year 2061/062, it raised up to 430. Letter the trend of the share price decreasing to the year 063/064 and then after it seems to be in increasing in the year 064/065, it raised up to 410.

**Table – 4.2**  
**Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\sigma$ ), and**  
**Coefficient of Variance (C.V.) of BOK**

<i>Year</i>	<i>Year end price (P)</i>	<i>Dividend (D<sub>1</sub>)</i>	$R = \frac{P_1 + P_0 + D_1}{P_0} - 1$	$R - \bar{R}$	$\frac{(R - \bar{R})^2}{\bar{R}}$	<i>Remarks</i>
056/057	998	31.58	-	-	-	Base year
057/058	85	0.00	-0.1483	-0.1803	0.0325	
058/059	254	20.00	-0.6776	-0.1096	0.0120	
059/060	198	5.00	-0.2008	-0.2328	0.0542	
060/061	295	10.00	0.5404	0.5084	0.2585	
061/062	430	15.00	0.5085	0.4765	0.2271	
062/063	395	15.00	-0.00465	-0.0785	0.0616	
063/064	280	14.00	-0.2557	-0.2877	0.0828	
064/065	410	20.00	0.5357	0.5037	0.2537	
<b>Total</b>			<b>0.2557</b>			

Here from the calculation [In appendix – 4(A)], it is found that expected return of the stock of BOK is 3.2% and risk is 37.46%. The coefficient of variance is 11.71, which means for earning one unit of return the investor have bear 11.71 unit of risk.

**Figure - 4.2**  
**Annual Rate of Return of Common Stock of BOK**



Above figure is showing the trend of annual rate of return of common stock of BOK. From the above bar diagram we found that the annual rate of return in

057/058, 058/059,059/060,062/063 and 063/064 is negative and the return is in 060/061,061/062 and 064/065 is positive and in the year 064/065, it is highest.

#### 4.1.1 Everest Bank Limited

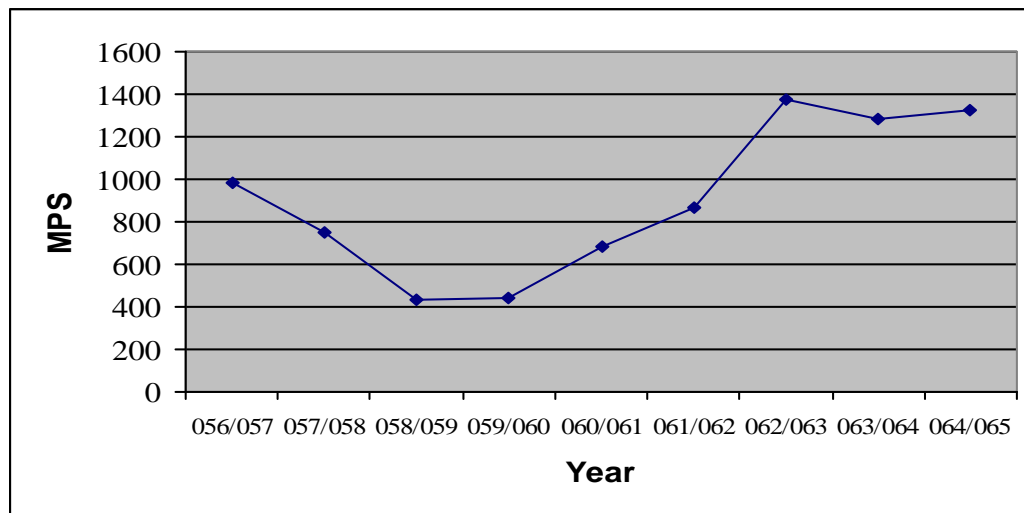
EBL is a joint venture bank established under company act of Nepal. This established under collaboration between Nepalese shareholder and an Indian reputed and, Punjab national bank of India. The bank was incorporated in 1993 AD (2049 B.S.) and was listed in the NEPSE in 1995 (2052/15/25 B.S.). The central office of this organization is situated in Everest building, Lazimpat, Katmandu. Its authorized capital is Rs. 750000000 with issued capital Rs. 466800000 and paid up capital is Rs.455000000. both the par value and paid up value per share is Rs. 100.

**Table 4.3**  
**MPS and DPS of EBL**

<i>Year</i>	<i>Market Price per Share in Rs.</i>			<i>Dividend per Share (DPS)</i>	<i>Stock Dividend</i>	<i>Total Dividend</i>
	<i>High</i>	<i>Low</i>	<i>Closing</i>			
056/057	980	400	980	0	-	0
057/058	1850	670	750	0	-	0
058/059	740	325	430	20	-	20
059/060	490	349	445	0	-	0
060/061	723	400	680	20	-	20
061/062	905	625	870	40	-	40
062/063	1410	800	1379	0	-	0
063/064	1390	850	1281	10	-	10
064/065	1520	910	1326	25	-	25

**Source: NEPSE**

**Figure: 4.3**  
**Year end Market Price of the Common Stock of EBL**



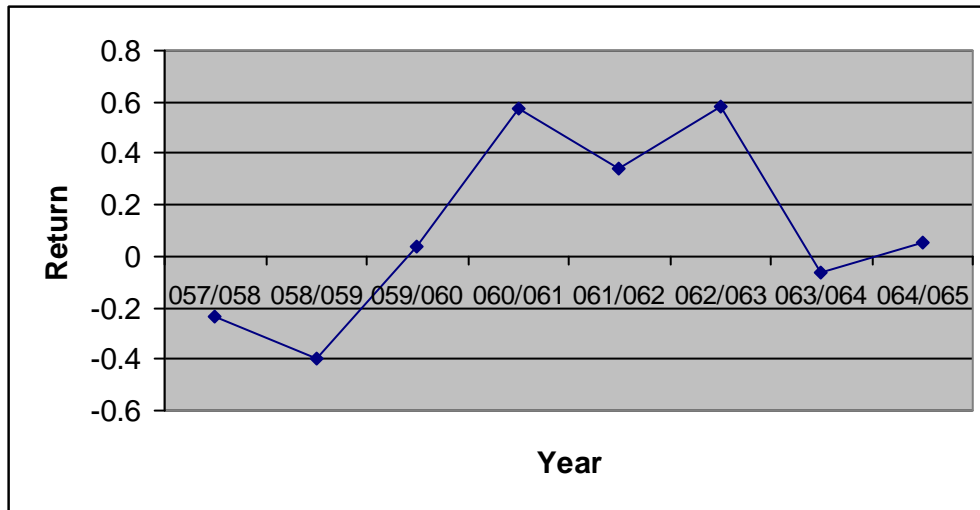
Here, the market price of the share of EBL maximum in the fiscal year 062/063 the market price of the bank is decreasing trend the fiscal year 2058/059 and in the year 2059/060 it slowly recovered. After that, the market price of the stock recovered its position and the trend is in increasing order. The trend is continues until the fiscal year 2061/062 and found the point of 870. After that the market price of the stock is decrease in 063/064 hen the market price of the stock recovered 064/065 and found the point of 1326.

**Table – 4.4**  
**Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\sigma$ ), and Coefficient of Variance (C.V.) of EBL**

<i>Year</i>	<i>Year end price (P)</i>	<i>Dividend (D<sub>1</sub>)</i>	$R = \frac{P_1 + P_0 + D_1}{P_0}$	$R - \bar{R}$	$\frac{R - \bar{R}}{\sigma}$	<i>Remarks</i>
056/057	980	0	-	-	-	Base year
057/058	750	0	-0.2347	-0.3456	0.1194	
058/059	430	20	-0.4000	-0.5109	0.2610	
059/060	445	0	0.0349	-0.076	0.0576	
060/061	680	20	0.5730	0.4621	0.2135	
061/062	870	40	0.3382	0.2273	0.0517	
062/063	1379	0	0.5851	0.4742	0.2249	
063/064	1281	10	-0.0638	-0.1742	0.0305	
064/065	1326	25	0.0546	-0.0563	0.0317	
<b>Total</b>			<b>0.8873</b>		<b>0.9903</b>	

Here from the calculation [In appendix – 4(B)], it is found that expected return of the stock of EBL is 11.09% and risk is 37.61%. The coefficient of variance is 3.392, which means for earning one unit of return the investor have bear 3.392 unit of risk.

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



From the above figure, the annual return of the company is negative in the year 057/058, 058/059 and 063/064. And positive in the year 059/060, 060/061, 061/062, 062/063 and 064/065. The maximum return in the year 062/063 but in the fiscal year the annual return is again decrease.

#### **4.1.3 Nepal Bangladesh Bank Limited**

NBBL is another joint venture bank established under company act of Nepal. The bank was incorporated in 1994 AD (2051 B.S.) and was listed in the NEPSE in 1995 (2052/09/09 B.S.). Its authorized capital is 1500000000; issued capital is 1000000000 and paid up capital is 359924500. Both per value and paid up value per share is Rs.100. the central office of the bank is in Bijuli Bazaar Katmandu.

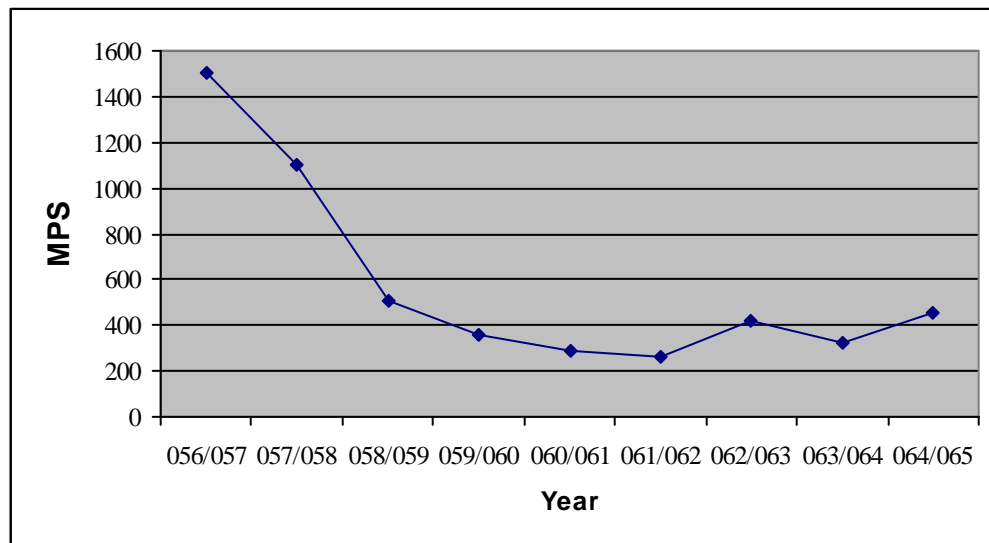


**Table 4.5**  
**MPS and DPS of NBBL**

<i>Year</i>	<i>Market Price per Share in Rs.</i> <i>(MPS)</i>			<i>Dividend</i> <i>per Share</i> <i>(DPS)</i>	<i>Stock</i> <i>Dividend</i>	<i>Total</i> <i>Dividend</i>
	<b>High</b>	<b>Low</b>	<b>Closing</b>			
056/057	1505	800	1502	0	-	0
057/058	3430	950	1100	5.04	-	5.04
058/059	1200	340	510	0	-	0
059/060	535	341	360	0	-	0
060/061	477	290	290	0	-	0
061/062	324	214	265	0	-	0
062/063	510	380	420	0	-	0
063/064	425	185	325	10	-	10
064/065	605	291	453	5	-	5

**Source: NEPSE**

**Figure: 4.5**  
**Year-end Market Price of The Common Stock of NBBL**



From above figure, we found that the trend of market price of the bank is in the decreasing order rapidly to the year 2058/059 and thereafter it is decreasing slowly. However, it does not recover in any year. After that, its trend is positive in 062/063 but market price is again negative in 063/064. Letter market price of this bank is positive in 064/065.

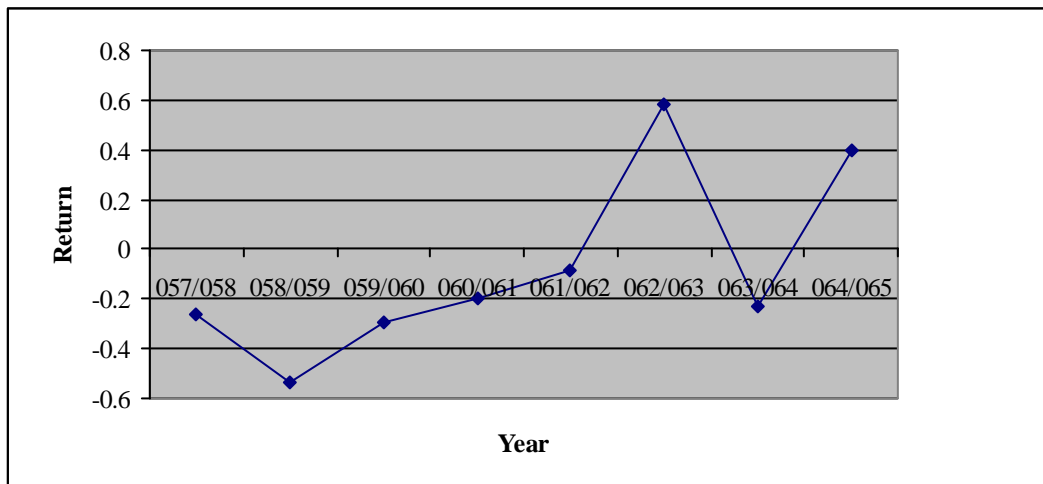
**Table – 4.6**

**Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\sigma$ ), and Coefficient of Variance (C.V.) of NB Bbank**

Year	Year end price (P)	Dividend ( $D_1$ )	$R = \frac{P_1 + D_1 - P_0}{P_0}$	$ZR$	$\frac{R - \bar{R}}{\sigma}$	Remarks
056/057	1502	0	-	-	-	Base year
057/058	1100	5.004	-0.2643	-0.1866	0.0348	
058/059	510	0	-0.5364	-0.4587	0.2104	
059/060	360	0	-0.2941	-0.2164	0.0468	
060/061	290	0	-0.1941	-0.1164	0.0135	
061/062	265	0	-0.0847	-0.07	0.049	
062/063	420	0	0.5849	0.6626	0.4390	
063/064	325	10	-0.2262	-0.1485	0.0220	
064/065	453	6.10	0.3988	0.4715	0.2223	
<b>Total</b>			<b>-0.6214</b>		<b>1.0378</b>	

Here from the calculation [ In appendix- 4(C)], it is found that expected return of the stock of NB bank is -7.77% and risk is 38.50%. The coefficient of variance is -4.955, which means for earning one unit of return the investor have bear -4.955 unit of risk.

**Figure 4.6:  
Annual Rate of Return of Common Stock of NB bank**



Here above figure show that the trend of annual rate of return of the NB bank ltd. Due to the regular falls of market price of the stock the year 061/062. Letter annual return is positive in 062/063 after that return is also negative in the

year 063/064. But in the year 064/065 annual return is positive. In the fiscal year 062/063 the annual rate of return is maximum, and in the fiscal year 058/059 it is minimum.

#### 4.1.4 Standard Chartered Bank Nepal Limited

Standard Chartered Bank Nepal Limited is a joint venture bank with world wide banking system. Standard Chartered Bank Nepal Limited established in 1985 AD (2042 B.S.) under the company act of Nepal. The authorized capital is Rs. 1000000000; issue capital is Rs.500000000 and paid up capital is Rs. 374640400. Per value shares is Rs. 100. Its central office is at Naya Baneshwar, Katmandu. This company was listed in NEPSE in 1988 (2045/03/21 B.S.).

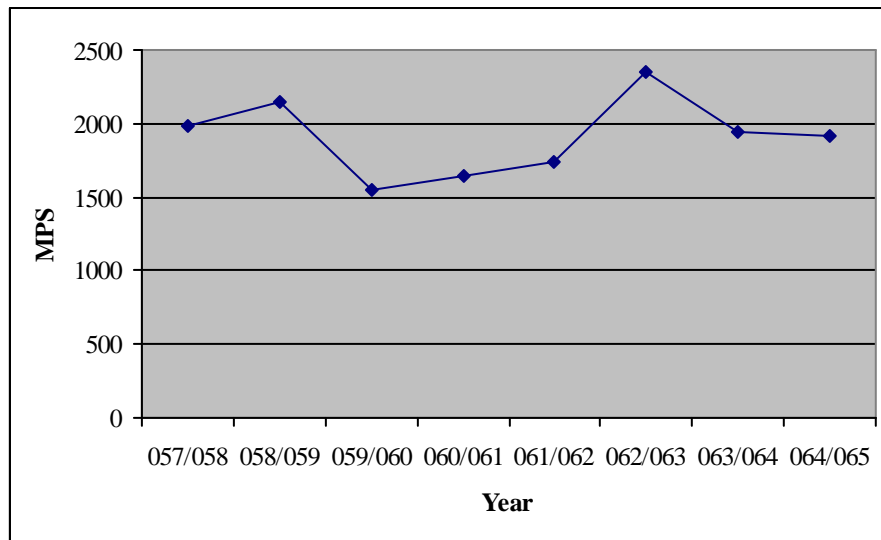
**Table 4.7**  
**MPS and DPS of SCBNL**

<i>Year</i>	<i>Market Price per Share in Rs.</i>			<i>Dividend per Share (DPS)</i>	<i>Stock Dividend</i>	<i>Total Dividend</i>
	<i>High</i>	<i>Low</i>	<i>Closing</i>			
056/057	2050	1181	1985	100	-	100
057/058	3111	1860	2144	200	-	200
058/059	2100	1000	1550	200	-	200
059/060	1750	1380	1640	230	-	230
060/061	1800	1520	1745	220	-	220
061/062	2350	1553	2345	240	-	240
062/063	2190	1749	1945	240	-	240
063/064	2010	1354	1915	260	-	260
064/065	2524	1817	2310	270	-	270

**Source: NEPSE**

**Figure: 4.7**

### Year-end Market Price Movement of the Common Stock of SBNL



Here, from above figure we found the trend of MPS is in increasing order, in the year 056/057 it increase but in the year 058/059 it decreased and reached its lowest MPS i.e. 1550 and there after in the year 059/060 it again increases slowly. The increasing trend is continuous in the year 061/062. Letter the MPS is decreasing in the year 062/063 to 063/064. But after that this year (063/064) the trend is increase in the year 064/065.

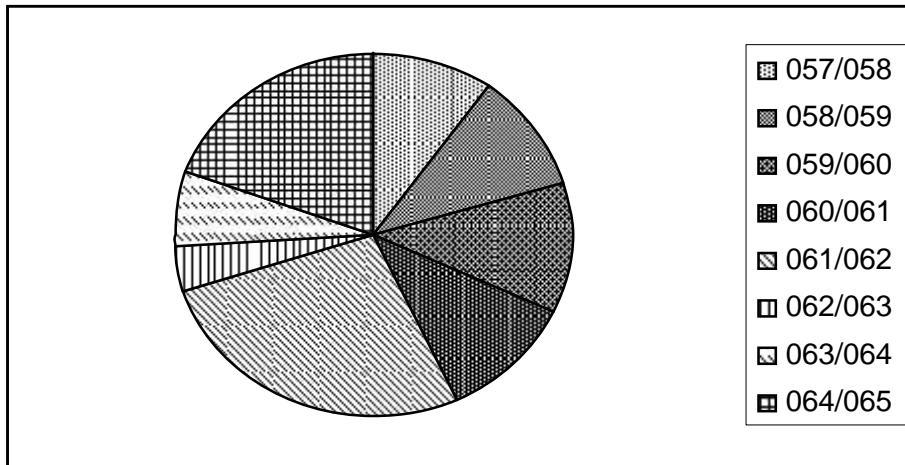
**Table – 4.8**

**Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\sigma$ ), and Coefficient of Variance (C.V.) of SCBNL**

<i>Year</i>	<i>Year end price (P)</i>	<i>Dividend (<math>D_1</math>)</i>	$R = \frac{P_1 + D_1 - P_0}{P_0}$	$R - \bar{R}$	$(R - \bar{R})^2$	<i>Remarks</i>
056/057	1985	100	-	-	-	Base year
057/058	2144	200	0.1809	0.0208	0.0043	
058/059	1550	200	-0.1838	-0.3439	0.1183	
059/060	1640	230	0.2065	0.0464	0.0215	
060/061	1745	220	0.1982	0.3583	0.1284	
061/062	2345	240	0.4814	0.3213	0.1032	
062/063	1945	240	-0.0682	-0.2283	0.052	
063/064	1915	260	0.1183	-0.0418	0.0175	
064/065	2310	270	0.3473	0.1872	0.0350	
<b>Total</b>			<b>1.2806</b>		<b>0.4802</b>	

Here from the calculation [In appendix- 4(D)], it is found that expected return of the stock of SCBNL is 16.01% and risk is 26.19%. The coefficient of variance is 1.6360, which means for earning one unit of return the investor have bear 1.6360 unit of risk.

**Figure 4.8:**  
**Annual Rate of return of common stock of SCBNL**



Here, above figure shows that the trend of annual rate of return of SCBNL, from the figure we found that in the fiscal that in that in the fiscal year 057/058 the annual return is positive but in the fiscal year 058/059 it decreased and the annual return is negative. Again, after this year the annual return is positive in the fiscal year 059/060,060/061 the annual return negative in the 062/063. Letter annual return is positive in the year 063/064 and 064/065, which the annual return is highest in the year 061/062.

#### **4.1.5Himalayan Bank Limited**

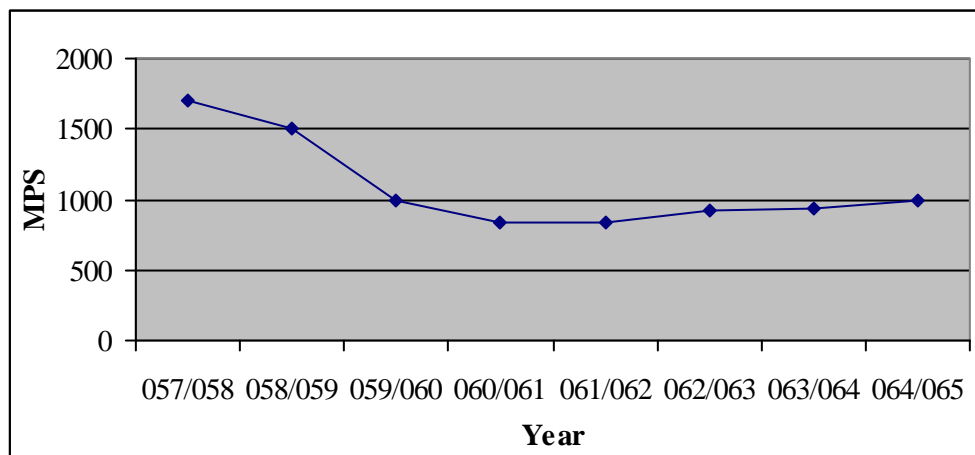
Himalayan Bank Limited is another joint venture bank established under act of Nepal. The bank is established under collaboration between the Nepalese shareholder and Habib Bank Limited of Pakistan. The bank was incorporated in 1992 AD (2048 B.S.) and was listed in the NEPSE in 1993 (2050/03/21 B.S.). The central office of this organization is in Sanchayakosh building, Thanel. Its authorized capital is Rs. 1000000000; issued capital is Rs. 650000000 and paid up capital is Rs. 536250000. Both the par value and paid up value per share is Rs. 100.

**Table 4.9**  
**MPS and DPS of HBL**

<i>Year</i>	<i>Market Price per Share in Rs.</i>			<i>Dividend per Share (DPS)</i>	<i>Stock Dividend</i>	<i>Total Dividend</i>
	<b>High</b>	<b>Low</b>	<b>Closing</b>			
056/057	1780	1000	1700	75	-	75
057/058	2726	1325	1500	85	-	85
058/059	1530	610	1000	60	-	60
059/060	950	750	836	26.32	-	26.32
060/061	1010	600	840	20	-	20
061/062	1181	855	920	43.16	-	43.16
062/063	1292	785	939	45.23	-	45.23
063/064	1151	831	995	39.10	-	39.10
064/065	1361	910	1051	60	-	60

**Source: NEPSE**

**Figure: 4.9**  
**Year end Market Price Movement of the Common Stock of HBL**



Above figure shown that the trend line o market price per share of the Himalayan Bank Ltd. In the year 056/057 the MPS is highest thereafter it decreased and in the year 059/060, it is lowest but after it is in increasing order until these days.

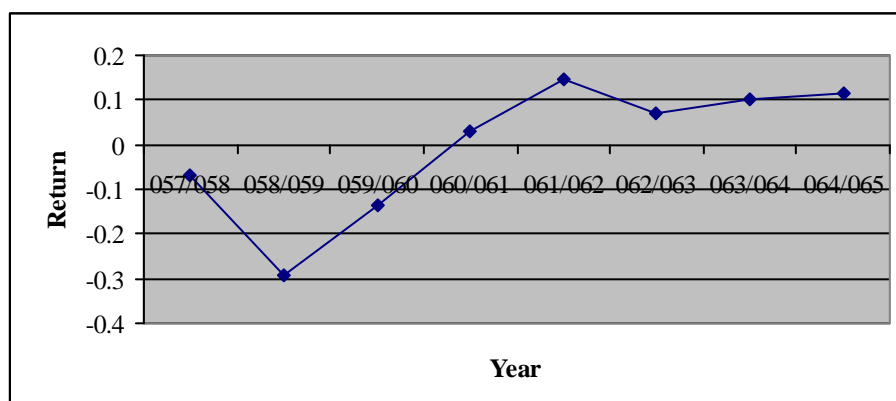
**Table: 4.10**  
**Realized Return, Expected Return, Standard Deviation and Coefficient of**  
**Variance of HBL**

<i>year</i>	<i>Year end price (P)</i>	<i>Dividend (D<sub>1</sub>)</i>	$R = \frac{P_1 + P_0 + D_1}{P_0}$	$R - \bar{R}$	$(R - \bar{R})^2$	<i>Remarks</i>
056/057	1700	75	-	-	-	Base year
057/058	1500	85	-0.0676	-0.0631	0.00398	
058/059	1000	60	-0.2933	-0.2888	0.0834	
059/060	836	26.32	-0.1337	-0.1322	0.0177	
060/061	840	20	0.0287	0.0332	0.00110	
061/062	920	43.16	0.1466	0.1511	0.0229	
062/063	939	45.23	0.0698	0.0743	0.00552	
063/064	995	39.10	0.1013	0.1058	0.0112	
064/065	1051	60	0.116	0.1211	0.00147	
<b>Total</b>			<b>-0.0356</b>		<b>0.1605</b>	

Here from the calculation [In appendix- 4(E)], it is found that expected return of the stock of HBL is -0.45% and risk is 2.3%. The coefficient of variance is -5.1, which means for earning one unit of return the investor have bear -5.1 unit of risk.

**Figure 4.10:**

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



From above figure the annual return of first three fiscal year (i.e. 057/058, 058/059 and 059/060) is negative. After that, it is slowly increasing and the return after that year being positive. In the fiscal year 061/062, the annual return is maximum but in the fiscal year 058/059, the annual return is negative.

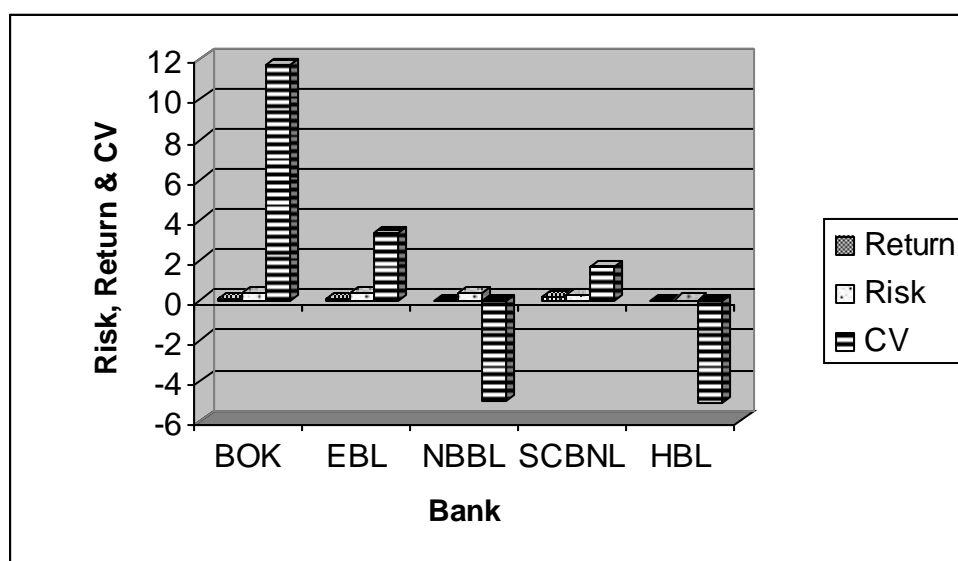
## 4.2 Analysis of Comparative Risk and Return of Selected Banks

Following table and figure show the return, risk and coefficient of variation of selected companies for comparison.

**Table: 4.11**  
**Selected Bank Expected Return, Standard Deviation and Coefficient of Variation**

<i>SN</i>	<i>Companies</i>	<i>Return</i>	<i>Risk</i>	<i>CV</i>	<i>Remarks</i>
1	BOK	0.0320	0.3746	11.71	
2	EBL	0.1109	0.3761	3.392	
3	NBBL	-0.0777	0.3850	-4.955	
4	SCBNL	0.1601	0.2619	1.6360	
5	HBL	-0.0045	0.023	-5.1	

**Figure: 4.11**  
**Selected Bank expected return, standard deviation and coefficient of variation**



In above table and diagram shows that SCBNL is highest return, NBBL is highest risk and Highest CV of BOK.

Based on the market capitalization at the end of 007/008, size of each bank is presented in the table below. Market capitalization is the total market value at specific time of the company, industry and market as whole. Standard chartered bank ltd has highest market capitalization among listed bank at July 16, 007 to July 15, and 008.

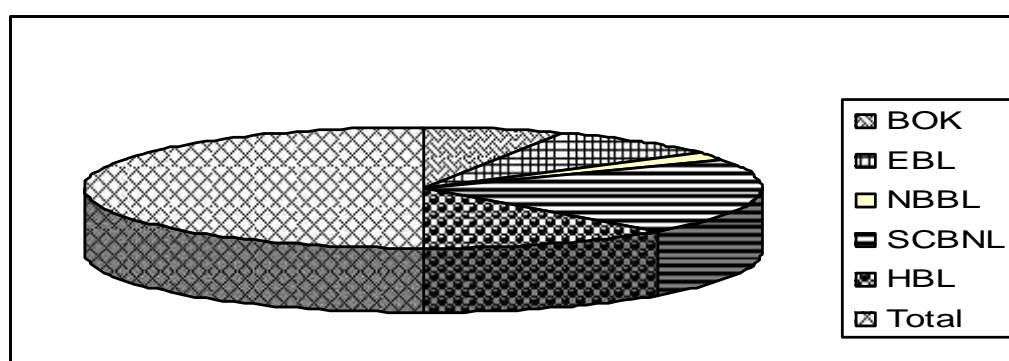


**Table: 4.12**  
**Market Capitalization of Selected Banks as 16 July 2008**

<i>Companies</i>	<i>Market capitalization (Rs. In million)</i>	<i>Percentage of Market</i>	<i>Remarks</i>
BOK	5213.42	13.20%	
EBL	6921.80	17.52%	
NBBL	1532.86	3.88%	Smallest
SCBNL	16248.68	41.13%	Biggest
HBL	9582.32	24.26%	
Total	39497.99	100	

**Source: NEPSE**

**Figure: 4.12**  
**Showing Inter Banking Capitalization of Market Capitalization**



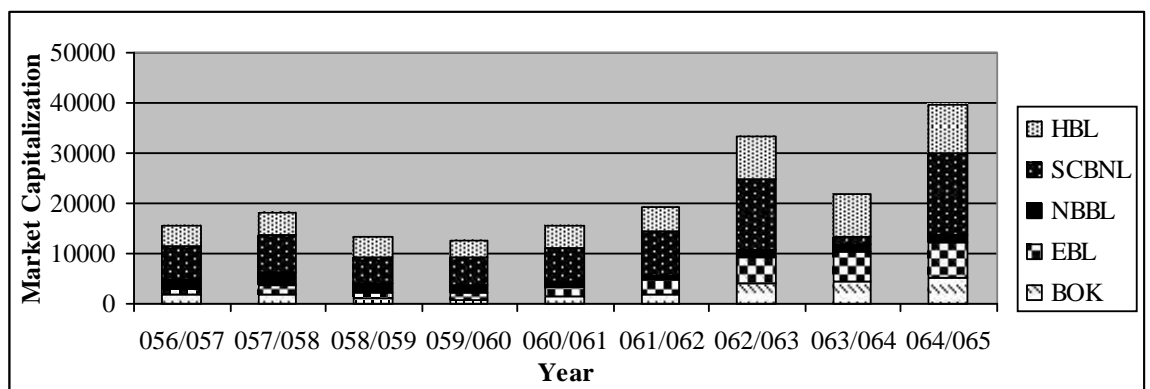
From above pie chart, standard chartered bank has highest market capitalization among selected listed commercial banks. It occupied 41.13% of the market among selected bank. Similarly, a comparison is made on the movement of market capitalization.

**Table: 4.13**  
**Year Wise Comparative Movement Of Market Capitalization**

<i>Year</i>	<i>BOK</i>	<i>EBL</i>	<i>NBBL</i>	<i>SCBNL</i>	<i>HBL</i>
056/057	1732.73	1160.52	1768.91	6740.77	4080
057/058	1986.03	1656.045	2619.78	7279.95	4500
058/059	1177.49	1115.08	1821.98	5263.03	3900
059/060	917.89	1401.75	1295.71	5568.62	3586.00
060/061	1367.56	2142.00	1043.77	6537.47	4504.50
061/062	1933.40	2740.50	954.50	8785.32	4830.00
062/063	3940.44	5212.62	1432.66	14142.20	8494.20
063/064	4320.83	5872.45	1510.27	1513.1	8751.63
064/065	5213.42	6921.80	1531.86	16248.68	9582.23

**Source: NEPSE**

**Figure: 4.13**  
**Year Wise Comparative Movement of Market Capitalization**



Here, from the above figure it seems that the highest market capitalization of SCBNL and it has highest market capitalization in the year 064/065 although its market capitalization has been low in the past year.

Second largest bank in market capitalization is HBL; however, movement of its share is continuous and highest in the year 064/065. Moreover, left three banks have some market capitalization. BOK is highest in the year 064/065. EBL is highest in the year 064/065 although its market capitalization has been decreases in past year. Moreover, in the last NBBL has highest in the year 057/058 and thereafter it has been decreased its market capitalization is notable but in the year 064/065 its shares is slowly increased. Among three banks, the market capitalization of BOK and EBL is slowly growing up in the fiscal year 061/062 but the NBBL bank cannot recover its capitalization in of the any given fiscal year.

### 4.3 Inter Industry Comparison

Industry is the combination or group of many more forms doing similarly business. Here comparison of industry is, made based on market capitalization. Market capitalization represents the size of an industry. It observed that the banking industry has majority value of total market share (i.e. more than 75%) as compared to other sectors and trading industry has lower value of market share (i.e. less than 2%).

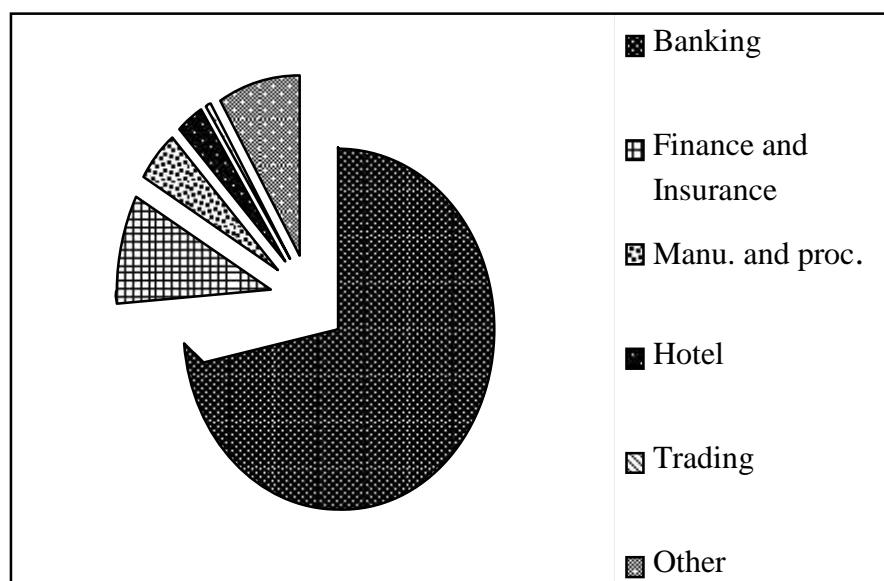
Here, blew in the market capitalization of each industry at the end of 16<sup>th</sup> July 2007.

**Table: 4.14**  
**Market Capitalization of Each Industry**

<i>Industry</i>	<i>Market capitalization</i>	<i>Percentages (%)</i>
Banking	78210.83	73.60%
Finance and Insurance	10281.40	9.67%
Manu. and proc.	5210.61	4.9%
Hotel	2823.47	2.66%
Trading	784.09	0.74%
Other	9012.20	8.48%
Total	106322.6	100%

**Source: NEPSE**

**Figure: 4.14**  
**Market Capitalization of Each Industry**



From above figure we found that banking sector has highest value of total market share i.e.73.60%, second highest market capitalization of finance and insurance i.e.9.67%, the third is other sector i.e. 8.48% and trading sector has lowest market capitalization i.e. 0.74% only.

**Table: 4.15**

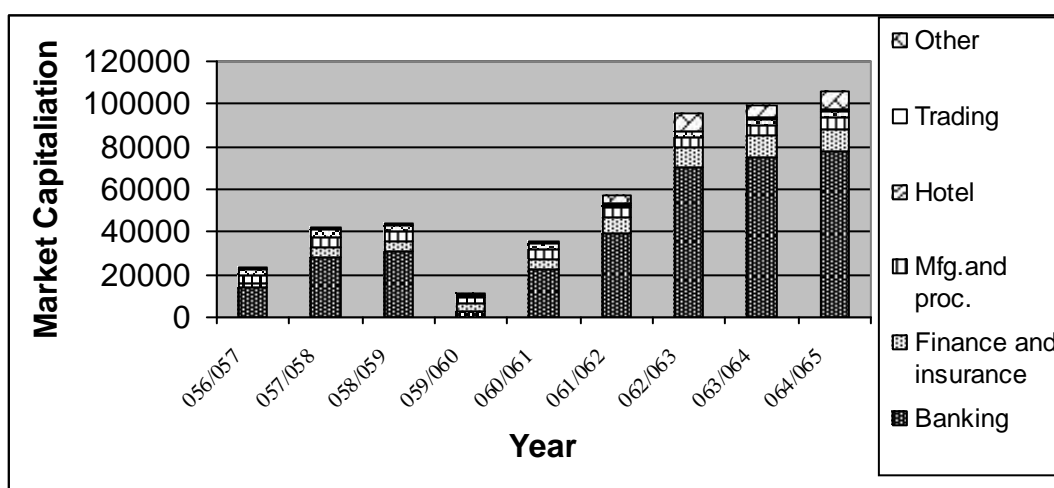
**Inter Industry Comparison of Market Capitalization (Rs 4.14. In million)**

<i>Year</i>	<i>Banking</i>	<i>Finance and insurance</i>	<i>Mfg.and proc.</i>	<i>Hotel</i>	<i>Trading</i>	<i>Other</i>
056/057	13632.42	2557.10	3925.81	2309.90	642.04	420.29
057/058	28391.09	4235.61	5201.56	3528.55	602.29	434.46
058/059	31235.21	4484.22	4657.29	2904.62	552.36	249.88
059/060	2586.89	4328.55	2807.74	107.12	527.48	1071.09
060/061	22453.49	4949.72	4731.30	2550.61	488.02	67.26
061/062	39596.17	7137.36	4585.66	1016.45	802.04	4187.73
062/063	70068.73	9782.82	4619.20	2393.09	737.39	8012.20
063/064	75387.19	10012.11	4812.18	2615.14	751.10	6121.17
064/065	78210.83	10281.40	5210.61	2823.47	784.09	9012.20

**Source: NEPSE**

**Figure: 4.15**

**Inter Industry Comparison of Market Capitalization (Rs 4.14. In million)**



The market capitalization of entire market including each industry shows that banking industry has been a biggest share in capitalization in the contest of Nepal and it is growing.

**Table: 4.16**  
**Sector Wise NEPSE Index**

<i>Year</i>	<i>Banking</i>	<i>Finance and insurance</i>	<i>Mfg.and proc.</i>	<i>Hotel</i>	<i>Trading</i>	<i>Other</i>	<i>Market</i>
056/057	219.44	195.68	229.83	242.52	123.09	316.10	216.92
057/058	397.17	346.15	340.59	123.74	305.98	308.46	360.70
058/059	379.33	318.67	349.31	291.34	155.55	190.90	348.43
059/060	482.29	577.51	216.51	216.51	102.20	77.34	227.54
060/061	446.62	448.78	250.58	196.68	94.56	48.56	204.86
061/062	422.90	433.71	255.58	184.98	95.01	142.65	286.67
062/063	731.89	642.62	301.11	180.77	148.11	410	368.83
063/064	921.10	513.10	410.15	175.18	132.15	520	429.08
064/065	1052.23	825.12	520.19	312.09	152.10	801.13	461.04

**Source: NEPSE**

**Table 4.17**  
**Calculation of Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\sigma$ ), of Banking Industry.**

<i>Year</i>	<i>Banking Index (BI)</i>	$R \times \frac{BI_1 - ZBI_0}{BI_0}$	$R \times \bar{R}$	$\int R \times \bar{R} \times \Delta$	<i>Remarks</i>
056/057	219.44	-	-	-	
057/058	397.17	0.8099	0.5548	0.3078	
058/059	379.33	-0.0449	-0.3	0.09	
059/060	482.29	0.2714	0.0163	0.000266	
060/061	446.62	-0.0739	-0.329	0.1082	
061/062	422.90	-0.0531	-0.3082	0.045	
062/063	731.89	0.7306	0.4755	0.2261	
063/064	921.10	0.2585	0.0034	0.0001156	
064/065	1052.23	0.1424	-0.1127	0.0127	
<b>Total</b>		<b>2.0409</b>		<b>0.79</b>	

Now,

$$\text{Expected return } \bar{R} = \frac{R}{n} = \frac{2.0409}{8} = 0.2551$$

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum R^2 - \frac{(\sum R)^2}{n}}{n-1}} = \sqrt{\frac{0.79}{8}} = 0.3360$$

$$\text{Coefficient of variance (CV)} = \frac{\sigma}{\bar{R}} = \frac{0.3360}{0.2551} = 1.317$$

Here from the above analysis it is found that expected return of banking industry is 25.51%, the risk is 33.60%, and the coefficient of variance is 1.317. So, if any investor wants to earn extra unit of return from banking sector he/she has to bear risk of 1.317.

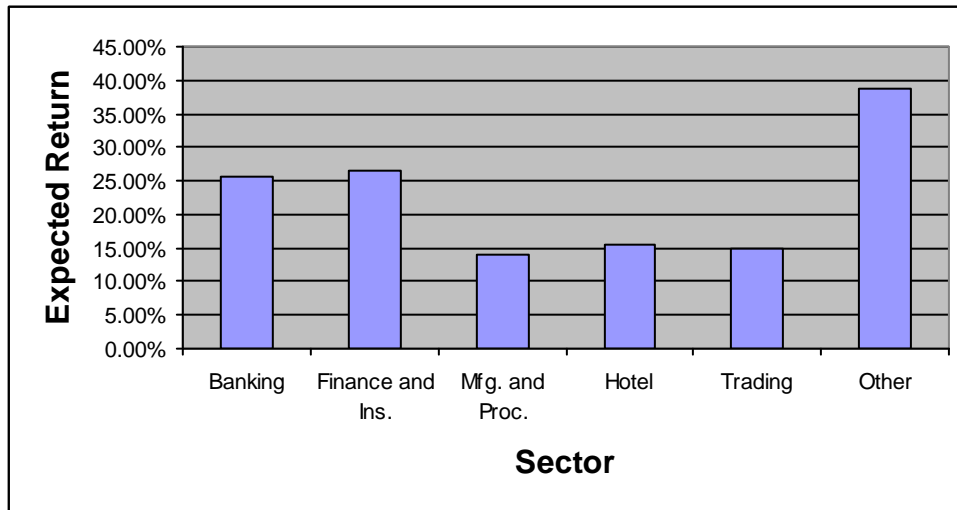
The focus of the study is risk and return. Risk and return of banking industry is calculated. Industry wise comparison of risk and return is made here based on year-end NEPSE index year-end NEPSE index is given in the table 4.15. Annual realized return, expected return, standard deviation and coefficient of variance of banking sector industry is calculated above table 4.16 shows these variables of each industry. A detail of calculation is made on appendix table 1 (A-E).

**Table: 4.18**  
**Industry Wise Expected Return, Standard Deviation and Coefficient of Variance:**

<i>SN</i>	<i>Industry</i>	<i>Expected return</i>	<i>Standard deviation</i>	<i>CV</i>	<i>Remarks</i>
1	Banking	25.51%	33.60%	1.317	Best as per CV
2	Finance and Ins.	26.67%	44.43%	1.666	
3	Mfg. and Proc.	13.91%	26.23%	1.8866	
4	Hotel	15.44%	60.58%	3.924	
5	Trading	14.79%	62.61%	4.233	
6	Other	38.66%	100.7%	2.61	

From the above table it is found that CV of banking industry sector is 1.317, which is minimum as compared with other industry. Therefore, it is most suitable for investment. And the CV of trading industry is highest of 4.233 compared with other industry. Therefore, it is most risk sector for investment.

**Figure 4.16**  
**Industry Wise Expected Return**



Above shows, that other sector has highest return of 38.66%, second and third highest returns are from finance/insurance and banking sector with 26.67% and 25.51%, respectively. Moreover, lowest return from manufacturing and processing sector i.e. 13.91%.

#### **4.4 Comparison Risk and Return of Selected Banks with the Market**

When talking about the stock market in Nepal, there is only one and that is NEPSE. Countries overall market movement is represented by market index (i.e. NEPSE index).

The market return, its SD and CV is calculated below:

**Table: 4.19**  
**Calculated of Market Return, its SD and CV of the NEPSE Index.**

<i>Year</i>	<i>NEPSE index (NI)</i>	$R_m \times \frac{NI_t - NI_{t-1}}{NI_{t-1}}$	$R_m - \bar{R}_m$	$\frac{\sum (R_m - \bar{R}_m)^2}{n}$	<i>Remarks</i>
056/057	216.92	-	-	-	Base year
057/058	360.70	0.6628	0.5245	0.2751	
058/059	348.43	-0.0340	-0.1723	0.0297	
059/060	227.54	-0.03470	-0.4853	0.2355	
060/061	204.86	-0.0997	-0.238	0.0566	
061/062	286.86	0.3993	0.261	0.0681	
062/063	268.83	0.2866	0.1483	0.0219	
063/064	429.08	0.1634	0.0251	0.00063	
064/065	461.04	0.0745	-0.0641	0.0041	
<b>Total</b>		<b>1.1059</b>		<b>0.6916</b>	

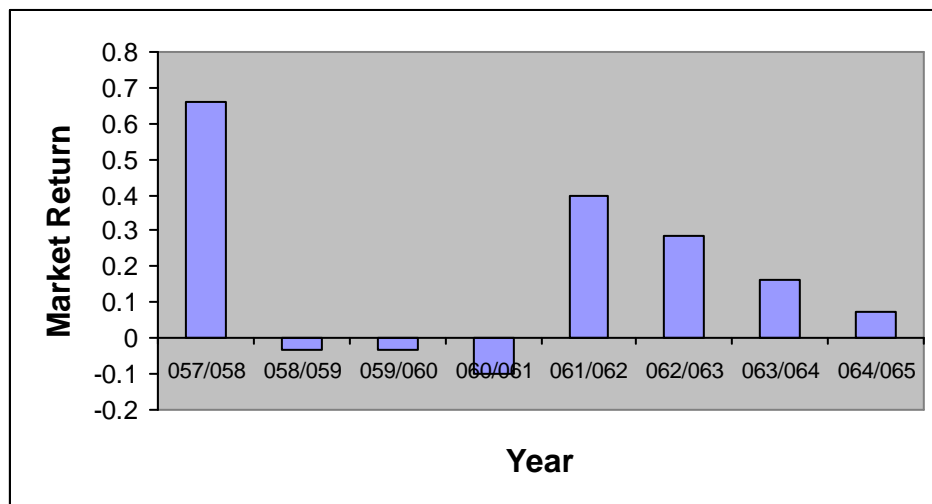
Now,

$$\text{Expected return } \bar{R}_m = \frac{R_m}{n} = \frac{1.1059}{8} = 0.1383$$

$$\text{Standard deviation } (\dagger) = \sqrt{\frac{\sum (R_m - \bar{R}_m)^2}{n}} = \sqrt{\frac{0.6916}{8}} = 0.3143$$

$$\text{Coefficient of variance (CV)} = \frac{\dagger}{\bar{R}_m} = \frac{0.3143}{0.1383} = 2.273$$

**Figure: 4.17 Market Return Movement**



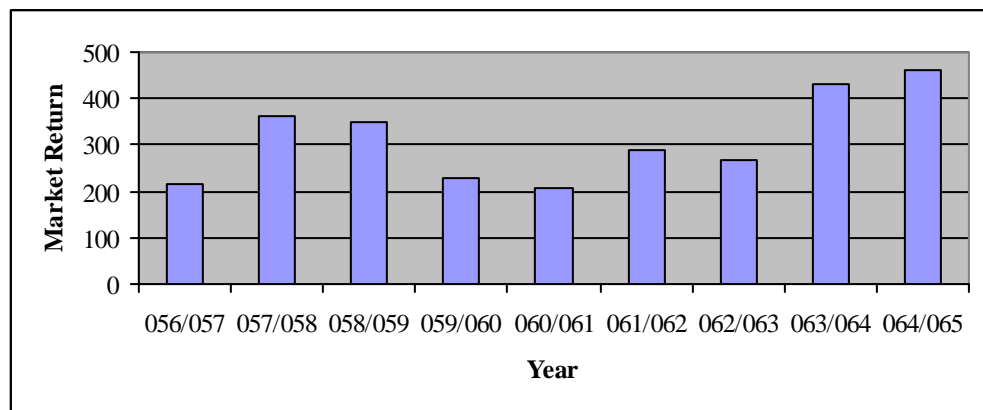


From above diagram, it seems that the market return is high in that the market return is high in the year 057/058 and reached 66.28%. However, the following year it is in decreasing order and reached up to the negative figure in the year 059/060 it decreased up to -34.70%. Although in the year 060/061, it is negative thereafter it improved and reached in positive, in the year 061/062, 062/063, 063/064 and 064/065 its return is 39.93%, 28.66%, 16.34% and 7.45% respectively.

#### 4.5 Analysis of NEPSE Movement

From the following diagram, it seems that the movement of NEPSE index is in bullish trend from the fiscal year 056/057 to 058/059 and then it turned be a risk in the following year. However, after the year 060/061 it improvement and reached in the peak in the fiscal year 064/065.

**Figure: 4.18**  
**NEPSE Index Movements**



#### 4.6 Result of Hypothesis Test

The hypothesis is based on the test of significance of mean (T- test). For this expected return of selected companies is calculated in the following table.

**Table: 4.20**  
**Expected Return, Standard Deviation and CV of Selected Banks.**

<i>Companies</i>	$R_s$	$R_s - \bar{R}_s$	$\sum (R_s - \bar{R}_s)^2$
BOK	0.0320	-0.0122	0.000148
EBL	0.1109	0.0667	0.00445
NBBL	-0.0777	-0.1219	0.0149
SCBNL	0.1601	0.1159	0.0139
HBL	-0.0045	-0.0487	0.00237
<b>Total</b>	<b>0.2208</b>		<b>0.0353</b>

Now,

$$\text{Expected return } \bar{R}_s = \frac{\sum R_s}{n} = \frac{0.2208}{5} = 0.0442$$

(Where, n = no. of selected banks)

$$\text{Standard deviation } (s) = \sqrt{\frac{\sum (R_s - \bar{R}_s)^2}{n - 1}} = \sqrt{\frac{0.0353}{5 - 1}} = 0.094$$

$$\text{Coefficient of variance (CV)} = \frac{s}{\bar{R}_s} = \frac{0.094}{0.0442} = 2.125$$

Null Hypothesis  $H_0$  :  $\bar{R}_s = \bar{R}_m$  i.e. there is no significance different between the average return of selected companies and overall market return.

Alternative Hypothesis  $H_1$  :  $\bar{R}_s \neq \bar{R}_m$  i.e. there is significance different between the average return of selected companies and overall market return.

Test Statistic:

Under  $H_0$

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

Where,

$\bar{R}_s$  = Average return of the portfolio of common stock companies = 0.0442

$\bar{R}_m$  = Average return of market = 0.1383

$n_1 \times n_2$  = Number of observation = 8

$t^2$  = Estimated standard deviation of population

$$\begin{aligned} t^2 &= \frac{n_1 t_1^2 + n_2 t_2^2}{n_1 + n_2} \\ &= \frac{8 * 0.094^2 + 8 * 0.3143^2}{8 + 8} \\ &= 0.062 \end{aligned}$$

$t_1^2$  = SD of return of common stock of selected companies = 0.094

$t_2^2$  = SD of market return = 0.3143

Degree of freedom (d f) = 8+8-2 = 14

Hence,

$$t = \frac{0.0442 - 0.1383}{\sqrt{0.062 * \frac{1}{8}}} = \frac{-0.0941}{\sqrt{0.00775}} = \frac{-0.0941}{0.088} = -1.07$$

The tabulated value of t for 14 degree of freedom at 5% level of significance is 2.145.

Decision: Since,  $t_{cal} < t_{tab}$  (0.756 < 2.145)

The null hypothesis is accepted i.e. there is no significant difference between the average return of the selected common stock and overall market return.

#### 4.7 Analysis of Market Sensitivity

Market sensitivity of stock is explained by its beta coefficient. Beta is known as systematic risk measure. The beta of market is always one. Therefore, beta of any stock more than 1 is known as more risky or aggressive investment and beta of stock less than 1 is known as less risky or defensive investment.

$$S_j \times \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{\rho_{jm} \sigma_j \sigma_m}{\sigma_m^2}$$

Where,

$\rho_{jm}$  = Correlation between market return and stock return.

$$S_m \times \frac{\text{Cov}(R_m, R_m)}{\sigma_m^2} = \frac{\sigma_m^2}{\sigma_m^2} = 1.00$$

**Table: 4.21**

**Beta Coefficient of Each Company (Appendices no. 2 A – E)**

<i>SN</i>	<i>Company</i>	<i>Beta</i>	<i>Remarks</i>
1	BOK	-0.0055	Least aggressive
2	EBL	-0.0536	
3	NBBL	0.2312	Most aggressive
4	SCBNL	-0.0079	
5	HBL	0.1710	

Required rate of return, expected rate of return and price evaluation analysis.

Comparison of required rate of return and expected rate of return gives the result whether the stock is under priced or overpriced. If the required rate of return is less than expected rate of return, the stock is said to be under priced and investor trend to buy these types of stock and vice versa. For this analysis the risk free rate of return is needed, which is taken for the interest rate of Treasury – Bill ( T- Bill) issued by Nepal Rasta Bank ( NRB). NRB issues T – Bill in each Tuesday and it has different rate set up as the bidder bids section of NRB issue T – Bill of 91 days to 364days durations. As suggested by the T- Bill section of NRB, the interest of T – Bill i.e. of 364 days duration is taken as risk free rate, which is approximately 6%.

$$\overline{R}_j = \text{Risk Free Rate of Return} = 6\%$$

$$\overline{R}_m = \text{Market Rate of Return} = 13.83\%$$

**Table: 4.22**  
**Required Rate of Return, Expected Rate of Return and Price Evaluation**  
**of Stocks.**

<i>Company</i>	<i>Beta</i>	$R_j - X R_f - \Gamma_j (R_m - Z R_f) - \Delta_j$	<i>Expected rate of return</i>	<i>Market price position</i>
BOK	-0.0055	0.060	0.0320	Over priced
EBL	-0.0536	0.056	0.1109	Under priced
NBBL	0.2312	0.078	-0.0777	Over priced
SCBNL	-0.00079	0.060	0.1601	Under priced
HBL	0.1710	0.073	-0.0045	Over priced

The stock of BOK, NBBL and HBL are overpriced and the stocks of EBL and SCBNL are under priced and these under priced stocks are in demand.

#### 4.8 Analysis of Portfolio Risk and Return

Portfolio theory was proposed by Harry M. Markowitz, which gives the concept of diversification of risk by investing total funds in more than a single assets or single stock. Markowitz diversification helps the investor attain a higher level of expected utility than with any risk reduction techniques. In a very simple way, it can be understand as not keeping all eggs in a single basket. By diversifying total funds in different securities, the risk of individual security can be reduced without loosing considerable return. The main aim of portfolio is reduction of unsystematic risk, from which investor can take more benefit by making efficient portfolio.

The portfolio expected return is a forward weighted average of return on the individual securities.

The analysis is based on five assets portfolio and the tools for analysis are presented in chapter 3 i.e. in Research Methodology.

Lets the return on common stock of BOK be denoted by 'A', common stock of EBL be denoted by 'B', common stock of NBBL be denoted by 'C', common stock of SCBNL be denoted by 'D', common stock of HBL be denoted by 'E'.

**Table: 4.23****Co variation Between Stocks of Selected Companies [Appendices 3 (A – J)]**

<i>SN</i>	<i>Stocks</i>	<i>Co variation</i>
1	Stock of BOK and EBL = $Cov_{AB}$	0.066
2	Stock of BOK and NBBL = $Cov_{AC}$	0.0386
3	Stock of BOK and SCBNL = $Cov_{AD}$	0.0689
4	Stocks of BOK and HBL = $Cov_{AE}$	0.0298
5	Stocks of EBL and NBBL = $Cov_{BC}$	0.0562
6	Stocks of EBL and SCBNL = $Cov_{BD}$	0.024
7	Stocks of EBL and HBL = $Cov_{BE}$	0.027
8	Stocks of NBBL and SCBNL = $Cov_{CD}$	0.0033
9	Stocks of NBBL and HBL = $Cov_{CE}$	0.0373
10	Stocks of SCBNL and HBL = $Cov_{DE}$	0.0235

Here, weighted is not available, so the equal weight is considered among five banks i.e. 20% for each.

Weight of common stock of BOK = 20%

Weight of common stock of EBL = 20%

Weight of common stock of NBBL = 20%

Weight of common stock of SCBNL = 20%

Weight of common stock of HBL = 20%

Hence, the portfolio return is given as:

$$R_p = XW_A R_A + \Gamma W_B R_B + \Gamma W_C R_C + \Gamma W_D R_D + \Gamma W_E R_E$$

$$= 0.20*0.0320+0.20*0.1109+0.20*(-0.0777) +0.20*0.1601+0.20*(- 0.0045)$$

$$= 0.04416$$

Therefore, the return of portfolio is 0.0416 or 4.416%.

And the variance is given as  $(\sigma_p^2) =$

$$\begin{aligned}
 & \sigma_A^2 W_A^2 + \sigma_B^2 W_B^2 + \sigma_C^2 W_C^2 + \sigma_D^2 W_D^2 + \sigma_E^2 W_E^2 + \Gamma_{AB} 2\sigma_A \sigma_B W_A W_B \\
 & + \Gamma_{AC} 2\sigma_A \sigma_C W_A W_C + \Gamma_{AD} 2\sigma_A \sigma_D W_A W_D + \Gamma_{AE} 2\sigma_A \sigma_E W_A W_E \\
 & + \Gamma_{BC} 2\sigma_B \sigma_C W_B W_C + \Gamma_{BD} 2\sigma_B \sigma_D W_B W_D + \Gamma_{BE} 2\sigma_B \sigma_E W_B W_E \\
 & + \Gamma_{CD} 2\sigma_C \sigma_D W_C W_D + \Gamma_{CE} 2\sigma_C \sigma_E W_C W_E + \Gamma_{DE} 2\sigma_D \sigma_E W_D W_E \\
 & = 0.0056 + 0.00566 + 0.0059 + 0.109 + 0.000021 + 0.0186 + 0.011 + 0.0135 \\
 & \quad + 0.000514 + 0.0163 + 0.00473 + 0.00047 + 0.00067 + 0.0075 + 0.00028 \\
 & = 0.1997
 \end{aligned}$$

The portfolio risk is given as:

$$\begin{aligned}
 \sigma_p &= \sqrt{\text{Variance of portfolio}} \\
 &= \sqrt{0.1997} = 0.4468
 \end{aligned}$$

Therefore, the portfolio risk = 0.4468 or 44.68%

**Table: 4.24**  
**Analysis of Return and Risk of Selected Individual Banks and the Portfolio Investments**

<i>SN</i>	<i>Companies</i>	<i>Return</i>	<i>Risk</i>	<i>Portfolio return</i>	<i>Portfolio risk</i>
1	BOK	0.0320	0.3746	0.04416	0.4468
2	EBL	0.1109	0.3761	0.04416	0.4468
3	NBBL	-0.0777	0.3850	0.04416	0.4468
4	SCBNL	0.1601	0.2619	0.04416	0.4468
5	HBL	-0.0045	0.023	0.04416	0.4468

Analyzing the portfolio risk and return with the individual bank's risk and return, it comes in knowledge that among selected commercial banks portfolio investment cannot reduce risk totally comprising with of every selected individual banks. From the analysis of the outcomes, it seems that BOK, EBL, NBBL, SCBNL, and HBL has lower risk than the portfolio risk. So, if the investor is risk averter than its better to invest in any of these five stocks.



## **CHAPTER-V**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter presents summary, conclusion and recommendations derived from the analysis and finding of the study. Summary of the study has been presented in the first section of the chapter and the second section includes the conclusion drawn from the study. Finally, recommendations derived from this study have been presented in the third section of this chapter.

#### **5.1 Summary**

Nepal is on the way passing through the threshold of a great transformation. The responsibility to materialize the people's aspiration expressed through the historical people's movement accomplished by unprecedented people's participation has stood as powerful challenges before the prominent political parties. Likewise, there is additional responsibility for political transformation of the armed rebellion launched by the NCP (Maoist) for the last 12 years. Besides the incessant internal dissensions and external conflict between the Nepalese people and the monarchy ever since the NCP armed rebellion have propelled ahead several internal. Strife and evils existing in the Nepalese society towards a new dimension.

Economic reform measures undertaken in Nepal since the sector of the economy including trade, investment, fiscal and monetary policies, financial and capital markets. These measures aimed at promoting liberal and market economic policies, encouraging under private sector participation and attracting and enhancing foreign investment included significant measures to reform capital market.

Securities market in Nepal began with the flotation of shares in Biratnagar Jute Mill and Nepal Bank Ltd. in 1937. However, a very little market activities occurred after that. The securities exchange ltd was established in 1973, which was designed as a government broker and underwriter for government bond. The Nepal stock exchange was established in 1993 A.D. as a non-profit organization operating under the securities exchange act. The Nepal stock exchange opened its trading floor on Jan 13, 1994. The establishment of NEPSE plays important role in mobilizing resources. Nepalese securities market today covers different important

sector, such as banking sector, finance sector, insurance sector, manufacturing sector, hotel sector, trading sector and other sector.

Well-developed capital market and the securities market in particulars are necessary for the survival and development of these important sectors as well as for the foreign investment in the country. The securities market therefore, provides an important input for the further development of securities market. Against this background, the present study has been conducted with specific objectives to analyze the risk associated with common stock investment of the selected commercial banks, the movement of market price of share, and relation between risk and return of individual stock with that market.

Review of literature is very important in preparing research reports. It is necessary to develop concepts and ideas about the selected topic by reviewing all the relevant documents. Literature survey is simply a summary of the writing of recognized authors and of provide evidence that the researcher is familiar with what is already known and untested. Since effective research is based upon past knowledge, this step helps to eliminate the duplication of what has been done and provides useful hypothesis and useful suggestions for significant investigation.

Similarly, this report has also been prepared through the review of some basic academic course books, journals, articles and previous research etc. scientific methods are useful in data analysis. Tables, diagrams are used to present the data and results. So, the data calculation can be understood easily. Systematic research study requires a proper methodology to achieve the set objectives. Research methodology is the systematic method of finding solutions to a problem i.e. systematic collection, recording, analysis, interpretation and reporting of information. Both quantitative and qualitative analysis has been performed by using both description as well as analytical methods of research. Data are gathered from secondary sources. The secondary sources of data collection are website of NEPSE, website of Security Board of Nepal and website of selected banks.

Other subjective types of information are collected through different banks, previous thesis and various journals and annual reports of related subjects. Financial as well as statistical tools are used to analyze the data. The report includes the data collected from fiscal year 056/057 B.S. to 064/065. Various statistical tools like HPR, expected rate of return, standard deviation, coefficient of variance, beta, market return, portfolio return/ risk and CAPM are used in this study.

## 5.2 Major Findings of the Study

### 5.2.1 Finding Regarding the Individual Companies and their Stocks

- ) The movement of share price of BOK is in decreasing trend until the fiscal year 059/060 and in the following year 062/063, it has increasing trend. After that, these years share price is decreased in the year 063/064 letter in the fiscal year 064/065 it is also increased. The share price is highest in the fiscal year 059/060. annual return is maximum in the fiscal year 060/061 and minimum in the fiscal year 063/064.the beta coefficient of BOK is -0.0055 EBL is decline trend till the fiscal year 058/059 and it started to increase from the fiscal year 058/059 the price of share is enhancing to some extent there after. Since, the price is an increment in price comparing to the some previous year but the price is highest in the fiscal year 062/063 and minimum in the fiscal year 058/059.The annual rate of return is positive in the fiscal year 062/063 and 064/065 only. The beta coefficient of NBBL is 0.2312.
- ) The movement of the share price of SCBNL is in decreasing trend until the fiscal year 058/059. It improves the price of share is increase start from 058/059 to 061/062. After that, the price of share is also decreasing until in the fiscal year 063/064. Letter it improves the price of share is increase in 064/065. The share price is maximum in the fiscal year 061/062 and minimum in the fiscal year 058/059.Annual rate of return is maximum in the fiscal year 060/061 and negative in the year 058/059. The beta coefficient of the SCBNL is -0.00079.
- ) The movement of annual share price of HBL is decreasing trend till 059/060 and thereafter it started to increase and the tendency is continuous till the year 064/065. The maximum share price is in the fiscal year 056/057 and minimum in the year 059/060. Annual rate of return is maximum in the year 061/062 and minimum in the 058/059. The beta coefficient of the bank is 0.1710.

## **5.2.2 Finding Regarding the Banking Industry and Other Sectors**

- ) The banking sector has the expected return of 25.51% risk 33.60% and co-efficient of variation is 1.317.
- ) The finance and insurance sector has expected return of 26.67%, Risk of 44.43% and co-efficient of variation is 1.666.
- ) The expected rate of return of manufacturing and processing sector is 13.91%, risk is 26.23% and co-efficient of variation is 1.886.
- ) The hotel sector has expected return of 15.44%, risk is 60.58% and co-efficient of variation is 3.924.
- ) The trading sector has 12.61%, risk to earn 14.79% return and coefficient of variance is 4.233.
- ) Other sector has the expected return of 38.66% with risk 100.7% and 2.61 co-efficient of variation.

## **5.2.3 Finding Regarding the Stock Market**

- ) The market has expected return of 13.83%, risk of 31.43% and co-efficient of variation of 2.273.
- ) Regarding the market capitalization of selected companies, SCBNL has the maximum market capitalization and NBBL has the minimum market capitalization.
- ) Regarding to the market capitalization of the inter industry; banking sector has 73.60%, finance and insurance has 9.67, manufacturing and processing sector has 4.9%, other has 8.48% and trading and hotel sector has negligible proportion of share in overall market capitalization.

## **5.3 Conclusion**

The Nepalese stock market has short history from 1937 with the flotation of equity share of Biratnager Jute Mills limited and Nepal bank limited. It is small and slowly growing up. The rules and regulation are not sufficient to improve stock market. It needs effort from various stakeholders like regulation are not sufficient to regulate the economy of Nepal. Present law and rules affected the

economy of Nepal and stock market is not far from it. Therefore, Government should make reforms in the policies related to stock market development i.e. overall economy development as per the need of situation of market.

NEPSE also help to improve itself. It needs to make some standards for enlisting a company in the stock exchange. Therefore, the investor may feel his investment secure and ready for invest in any securities. At this time NEPSE develop some criteria for enlisting in the NEPSE and NEPESE has shown careful in updating the criteria as per the need of the time and situation.

Considering the trend of the price movement of the share of the price movement of the shares of selected banks, it reveals that the share price of almost all banks is increasing when return is considering the return of SCBNL is highest but its risk is lowest. It has 16.01% return and risk of 26.19%.

If risk is taken, into account for consideration, HBL has the minimum risk of 2.3% but its return is negative, so in such a condition of dilemma for which stock is selected, the best way of analysis is coefficient of variation. As the coefficient of variation is a unitary risk measure CV is measures risk per unit of return. CV is useful when two or more investment have different level of risk and different level of return CV of SCBNL 1.6360 is lowest CV comparisons with other stock, the stock of SCBNL is best for invest. It means for earning one extra unit of return an investor has to bear only 0.6360 unit of risk.

In industry wise analysis, the expected return on other sector has a maximum of expected return of 38.66% while mfg. and proc. Sector has minimum return of 13.91%. But other sector has maximum risk of 100.7% and mfg. and proc. Sector has minimum risk of 26.23%. If the stocks are assessed, in terms of CV, banking sector has minimum CV of 1.317 and that of trading sector has maximum CV of 4.233. Therefore, it is better to invest on shares of banking sector.

The expected return of overall market is 13.83% and risk is 31.43% with CV 2.273; it means the market itself is aggressive for earning 1 unit of return on market portfolio; an investor has to bear a risk of 2.273 units.

In the regard of industry wise market capitalization; trading sector has lowest capitalization of 0.74%, and banking sector has the highest capitalization of 73.60%, it means there is maximum total market value of banking sector at specific point of time.

Market sensitivity of stock is explained by its beta coefficient. Beta is the systematic risk measure. Beta explains the sensitivity or volatility of the stock with market is always 1. Therefore, beta of any stock greater than 1 is known as more aggressive while beta of stock lesser than 1 is known as defensive. Analyzing the stock from the point of beta coefficient, all the stock of selected banks have beta greater than 1. Among the selected bank of SCBNL has lowest beta coefficient i.e. -0.0079, therefore invest on these stock is better although the stock of SCBNL are aggressive but the rate of return is highest and unsystematic risk is also not very highest. The beta coefficient is highest of NBBL i.e. 0.2312.

Under the CAPM, prices of the stocks are analyzed and this fact indicates that the price of the stock of BOK, NBBL and HBL are overpriced and other bank's stocks are under priced. It indicates that the investor should select under priced securities, implement the buy, and hold strategy. If investors have overpriced securities investor, implement sell strategy. With the principles of finance under priced stock should show upward price movement and overpriced stock should show downward price movement but the actual market conditions does not seem so due to the economic and political condition of market.

From the testing of hypothesis null hypothesis is selected, it is concluded that the average return on the common stock of selected companies and that of market are equal at 5% level of significance.

From the portfolio analysis based one five assets portfolio; portfolio return and risk are 4.416% and 44.68% respectively.

### 5.3 Recommendations

Based on the analysis of data and major findings of this research, following recommendations and suggestion are prescribed:

- ) Based on the finding and conclusion of study, it is recommended to the investor that if they wish to generate higher return they should invest in the share of SCBNL.
- ) Investment in common stock is risky and as it does not guarantee the return of initial investment. Although there is, a chance of more return than that is expected there is also a chance of heavy loss; the stock market is undoubtedly risky in the short-term. Therefore, it is necessary for the investor to be mentally prepared for long run investment and they should try to work out their attitude toward the risk ness of various investment strategy.
- ) Investors have to focus their mind on both risk and return. Before thanking about higher return, they also have to think about the risk associated with the return. Therefore, risk averter investor can invest on the moderate type share having low risk and high return.
- ) Normally, investor think investment on stock market is ever beneficial. They think that the price of shares always increases and there is every time benefit. However, in reality it is not true. The price of the share may decrease due to many reasons and factor affecting the stock market. Especially, the political factors influence the price of the share in Nepal. Therefore, before investing the fund on stock of any companies, investors must to think about the condition of market and the economic and non- economic factors affecting the market.
- ) Besides investing the fund in single stock, it is better to invest making portfolio of more than single assets. Portfolio investment gives maximum return at minimum risk or increase the return keeping the risk in a constant way.
- ) Before making an investment decision in stock market, assessment of personal risk attitude, needs and requirements will always be

helpful. To make several discussions with stockbroker before reaching at the decision based on reliable information rather than rumor and imagination will ultimately favor the investor. Investors should make their investment decision based on financial parameters of the company. They should not rush over the rumors.

- ) It is recommended that investor should not invest their fund on portfolio because the portfolio return is less than other selected banks and risk is high. That should invest only one single asset of EBL and SCBNL and BOK, HBL and NBBL have negative return. Therefore, they are not suitable for investment.
- ) It is recommend to the selected commercial banks that they should try to minimize the risks associate with the return of stock by maintaining the EPS and DPS.



## BIBLIOGRAPHY

Annual report publication of selected banks.

Bellase, bishnu ( 2004 ), “study and experience less investment” stock review.

Chandra, parsana ( 1995 ), “The investment Game” Tata Mc Graw Hill, India.

Francis, Jack Clark ( 1990 ) “ Investment analysis and management”

Ghimire, Atma Ram ( June 2001 ), “Nepal share market and investor prospective”  
Business Age.

Joshi, Padam Raj ( 2063 ), “principle of Investment” Asmita Books Publisher and  
Distributers, Kathmandu, 2<sup>nd</sup> edition.

James C. Vanhorne and John M. Wachowicz, JR (2000): Fundamentals of  
Financial Management, Prentice Hall of India, New Delhi, 10<sup>th</sup> ed.

J. Fred Weston and Eugen F. Brigham (1982): Managerial finance, The Dryden  
Press Holt Saunders, Japan, 7<sup>th</sup> ed.

K. Thapa, R. Bhattarai and D. Basnet ( 2007 ), “Investment Theory nad Solution”  
Asmita Books Publisher and Distributers, Kathmandu, 2<sup>nd</sup> edition.

Lawerence J. Gitman (1991): Principle of Managerial Finance, Harper Colins,  
New York, USA.

Pandey, IM ( 1997 ), “financial Management” Vikash Publishing House Pvt. Ltd.  
New Delhi.

Pradhan, Radhe Shyam (2004) "Research in Nepalese Finance" Buddha Academic  
Publication and Distrobution, Kathmandu, 2<sup>nd</sup> edition.

Paudel, Narayan ( 2002 ), “An assessment of risk and return elements” Economic  
Review .

Pradhan, Radhe Shyam ( 2004 ), “Research in Nepalese Finance” Buddha Academic Publication and Distribution, Kathmandu, 2<sup>nd</sup> edition.

Rechar A. Brealy and Steward C. Myers (2001) "Principle of corporate finance", Pata MC Graw Hill, India, 7<sup>th</sup> edition.

Shrestha, Khil Dev ( 2003 ), “Risk and return analysis of listed companies,” Unpublished master Dgree Thesis, Deparement of management, shanker Dev Cmpus, T.U.

Van Horne, Jamesc and Wachowicz John M. (1990), “Fundamental of Financial Management” Prentice Hall Inc. U.S.A.

[www.nepalstock.com](http://www.nepalstock.com)

[www.sharemarket.com](http://www.sharemarket.com)

[www.nepalsharemarket.com](http://www.nepalsharemarket.com)

## **APPENDIX**

### **Appendix – 1**

**Calculation of Realized Return, Standard Deviation, Expected Return and Coefficient of Variance Different Industries.**

**A) Calculation of Realized Return, Standard Deviation, Expected Return and Coefficient of Variance of Finance and Insurance Industry.**

Year	Finance/ Insurance Index (F1)	$R \times \frac{FI_t - ZFI_{tZ1}}{FI_{tZ1}}$	$R - \bar{R}$	$fR Z \bar{R} \hat{A}$	Remarks
056/057	195.68	-	-	-	Base Year
057/058	346.15	0.7689	0.5022	0.2522	
058/059	318.67	-0.0794	-0.3461	0.1198	
059/060	577.51	0.8122	0.5455	0.2976	
060/061	448.78	-0.2229	-0.4896	0.2398	
061/062	433.71	0.0336	-0.3003	0.0902	
062/063	642.62	0.4817	0.215	0.0462	
063/064	513.10	-0.2015	-0.4682	0.2192	
064/065	825.12	0.6081	0.3414	0.1166	
<b>Total</b>		<b>2.1335</b>		<b>1.3816</b>	

$$\text{Expected return } \frac{fR \hat{A} X}{n} \frac{R}{n} = \frac{2.1335}{8} = 0.2667$$

$$\text{SD } f \hat{A} X \sqrt{\frac{fR Z \bar{R} \hat{A}}{n Z 1}} = \sqrt{\frac{1.3816}{8 Z 1}} = 0.4443$$

$$\text{CV} = \frac{\dagger}{R} = \frac{0.4443}{0.2667} = 1.666$$

**B) Calculation of Realized Returns, Expected Returns and CV of Manufacturing and Processing Industry.**

Year	Mfg.and Proc.	$R \times \frac{MI_t - ZMI_{tZ1}}{MI_{tZ1}}$	$R - \bar{R}$	$fR Z \bar{R} \hat{A}$	Remarks
056/057	229.83	-	-	-	Base Year
057/058	340.50	0.4819	0.3428	0.1175	
058/059	349.31	0.0256	-0.1135	0.0129	
059/060	216.51	-0.3802	-0.5193	0.2697	
060/061	250.13	0.1553	0.0162	0.000262	

061/062	255.58	0.0218	-0.1173	0.0136	
062/063	301.11	0.1781	0.039	0.00152	
063/064	410.15	0.3621	0.223	0.0497	
064/065	520.19	0.2683	0.1292	0.0167	
<b>Total</b>		<b>1.1129</b>		<b>0.4819</b>	

$$\begin{aligned}
 \text{Expected Return } \bar{R} &= \frac{\sum R_i}{n} \\
 &= \frac{1.1129}{8} \\
 &= 0.1391
 \end{aligned}$$

$$\begin{aligned}
 \text{SD } \sigma &= \sqrt{\frac{\sum R_i^2}{n} - \bar{R}^2} \\
 &= \sqrt{\frac{0.4819}{8} - (0.1391)^2} \\
 &= 0.2623
 \end{aligned}$$

$$\begin{aligned}
 \text{CV} &= \frac{\sigma}{\bar{R}} \\
 &= \frac{0.2623}{0.1391} \\
 &= 1.886
 \end{aligned}$$

**C) Calculation of Realized Returns, SD, Expected Returns and CV of Hotel Industry.**

Year	Hotel Index	$R = \frac{HI_t - HI_{t-1}}{HI_{t-1}}$	$\bar{R}$	$\sum R_i^2$	Remarks
056/057	242.52	-	-	-	Base Year
057/058	123.74	-0.4898	0.6442	0.4149	
058/059	291.34	1.3544	1.2	1.44	
059/060	216.51	-0.2568	-0.4112	0.169	
060/061	196.68	-0.0916	-0.246	0.0605	
061/062	184.98	-0.0086	-0.163	0.0266	
062/063	180.77	-0.0227	-0.1771	0.0314	
063/064	175.18	-0.0309	-0.1853	0.0343	

064/065	312.09	0.7815	0.6271	0.3923	
<b>Total</b>		<b>1.2355</b>		<b>2.569</b>	

$$\begin{aligned} \text{Expected Return } \bar{R} &= \frac{\sum R_i}{n} \\ &= \frac{1.2355}{8} \\ &= 0.1544 \end{aligned}$$

$$\begin{aligned} \text{SD } \sigma &= \sqrt{\frac{\sum (R_i - \bar{R})^2}{n-1}} \\ &= \sqrt{\frac{2.569}{8-1}} \\ &= 0.6058 \end{aligned}$$

$$\begin{aligned} \text{CV} &= \frac{\sigma}{\bar{R}} \\ &= \frac{0.6058}{0.1544} \\ &= 3.924 \end{aligned}$$

#### D) Calculation of Realized Return, Expected Return and CV of Trading Industry

Year	Trading Index (TI)	$R = \frac{TI_t - TI_{t-1}}{TI_{t-1}}$	$\bar{R}$	$\sum (R_i - \bar{R})^2$	Remarks
056/057	123.09	-	-	-	Base Year
057/058	305.98	1.4858	1.3379	1.7899	
058/059	155.55	-0.4916	-0.6395	0.4089	
059/060	102.20	-0.3429	-0.4908	0.2409	
060/061	94.56	-0.0747	-0.2226	0.0495	
061/062	95.01	0.0047	-0.1432	0.0205	
062/063	148.11	0.5589	0.411	0.1689	
063/064	132.15	-0.1078	-0.2557	0.0654	
064/065	152.10	0.1510	0.0031	0.0000096	
<b>Total</b>		<b>1.1834</b>		<b>2.7441</b>	

$$\begin{aligned} \text{Expected Return } \bar{R} &= \frac{1.1834}{8} \\ &= 0.1479 \end{aligned}$$

$$\begin{aligned} \text{SD } \sigma &= \sqrt{\frac{2.7441}{8}} \\ &= 0.6261 \end{aligned}$$

$$\begin{aligned} \text{CV} &= \frac{\sigma}{\bar{R}} \\ &= \frac{0.6261}{0.1479} \\ &= 4.233 \end{aligned}$$

**E) Calculation of Realized Return, SD, Expected Return and CV of Other Industry.**

Year	Other Index (OI)	$R \times \frac{OI_t - OI_{t-1}}{OI_{t-1}}$	$R - \bar{R}$	$\frac{(R - \bar{R})^2}{n}$	Remarks
056/057	376.10	-	-	-	Base Year
057/058	308.46	-0.1798	-0.5664	0.3208	
058/059	190.90	-0.3811	-0.7677	0.5894	
059/060	77.34	-0.5948	-0.9814	0.9631	
060/061	48.56	-0.3721	-0.7587	0.5756	
061/062	142.65	1.9376	-1.551	2.4056	
062/063	410.00	1.8742	1.4876	2.213	
063/064	520.01	0.2683	-0.1183	0.0139	
064/065	801.13	0.5406	0.154	0.0237	
<b>Total</b>		<b>3.0929</b>		<b>7.1051</b>	

$$\begin{aligned} \text{Expected Return } \bar{R}_A &= \frac{R}{n} \\ &= \frac{3.0929}{8} \\ &= 0.3866 \end{aligned}$$

$$\begin{aligned} \text{SD } \sigma_A &= \sqrt{\frac{\sum R_j^2 Z_j^2}{n}} \\ &= \sqrt{\frac{7.1051}{8}} \\ &= 1.007 \end{aligned}$$

$$\begin{aligned} \text{CV} &= \frac{\sigma}{R} \\ &= \frac{1.007}{0.3866} \\ &= 2.61 \end{aligned}$$

## APPENDIX – 2

### Calculation of Beta Coefficient of Selected Commercial Bank.

A) Calculation of Beta Coefficient of common source of Katmandu ltd.

Year	$\sum R_j Z_j^2$	$R_m Z_{R_m}$	$\sum R_j Z_j^2$ ( $R_m Z_{R_m}$ )	Remarks
057/058	-0.1803	0.5245	-0.0946	
058/059	-0.1096	-0.1723	0.0189	
059/060	-0.2328	-0.4853	0.1130	
060/061	0.5084	-0.238	-0.1209	
061/062	0.4765	0.261	0.1244	
062/063	-0.785	0.1483	-0.0116	
063/064	-0.2877	0.0251	-0.00072	
064/065	0.5037	-0.0641	-0.0323	
<b>Total</b>			<b>-0.00382</b>	

We have,

$$\begin{aligned} \text{Cov } \overline{R_j R_m} &= \frac{\sum R_j \overline{R_j} \sum R_m \overline{R_m}}{n \sum 1} \\ &= \frac{0.00382}{8 \sum 1} \\ &= 0.000546 \end{aligned}$$

$$\begin{aligned} S_j &= \frac{\text{Cov}(R_j R_m)}{\sigma_m^2} \\ &= \frac{0.000546}{0.0988} \\ &= -0.0055 \end{aligned}$$

#### B) Calculation of Beta Coefficient of Everest Bank ltd.

Year	$\overline{R_j R_j}$	$\overline{R_m R_m}$	$\overline{R_j R_m}$	Remarks
057/058	-0.3456	0.5245	-0.1813	
058/059	-0.5109	-0.1723	0.0880	
059/060	-0.076	-0.4853	0.0369	
060/061	0.4621	-0.238	-0.1099	
061/062	0.2273	0.261	0.0593	
062/063	0.4742	0.1483	0.0703	
063/064	-0.1797	0.0251	-0.0043	
064/065	-0.0563	-0.0641	0.0036	
<b>Total</b>			<b>-0.0374</b>	

We have

$$\begin{aligned} \text{Cov } \overline{R_j R_m} &= \frac{\sum R_j \overline{R_j} \sum R_m \overline{R_m}}{n \sum 1} \\ &= \frac{0.0374}{8 \sum 1} \\ &= -0.0053 \end{aligned}$$



$$\begin{aligned}
S_j & \times \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} \\
& = \frac{0.0053}{0.0988} \\
& = -0.0536
\end{aligned}$$

**C) Calculation of Beta Coefficient of Common Stock of Nepal Bangladesh Bank Ltd.**

Year	$\sum (R_j - \bar{R}_j)$	$\sum (R_m - \bar{R}_m)$	$\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)$	Remarks
057/058	-0.1866	0.5245	-0.0979	
058/059	-0.4587	-0.1723	0.0790	
059/060	-0.2164	-0.4853	0.1050	
060/061	-0.1164	-0.238	-0.0277	
061/062	-0.07	0.261	-0.0183	
062/063	0.6626	0.1483	0.0983	
063/064	-0.1485	0.0251	-0.00373	
064/065	0.4715	-0.0641	-0.0302	
<b>Total</b>			<b>0.15987</b>	

We have,

$$\begin{aligned}
\text{Cov}(R_j, R_m) & = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} \\
& = \frac{0.15987}{8} \\
& = 0.023
\end{aligned}$$

$$S_j \times \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2}$$

$$\begin{aligned}
&= \frac{0.023}{0.0988} \\
&= -0.02312
\end{aligned}$$

**D) Calculation of Beta Coefficient of Common Stock of Standard Chartered Bank Nepal Ltd.**

Year	$\sum (R_j - \bar{R}_j)^2$	$\sum (R_m - \bar{R}_m)^2$	$\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)$	Remarks
057/058	0.0208	0.5245	0.0109	
058/059	-0.3439	-0.1723	0.0593	
059/060	0.0464	-0.4853	-0.0225	
060/061	0.3583	-0.238	-0.0853	
061/062	0.3213	0.261	0.0839	
062/063	-0.2283	0.1483	-0.0338	
063/064	-0.0418	0.0251	-0.00105	
064/065	0.1872	-0.0641	-0.012	
<b>Total</b>			<b>-0.00055</b>	

We have,

$$\begin{aligned}
\text{Cov}(R_j, R_m) &= \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} \\
&= \frac{-0.00055}{8} \\
&= -0.000078
\end{aligned}$$

$$\begin{aligned}
S_j \times \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} \\
&= \frac{-0.000078}{0.0988} \\
&= -0.00079
\end{aligned}$$

**E) Calculation of Beta Coefficient of Common Stock of Himalayan Bank Ltd.**

Year	$\sum R_j \bar{Z} \bar{R}_j$	$R_m \bar{Z} \bar{R}_m$	$\sum R_j \bar{Z} \bar{R}_j \cdot R_m \bar{Z} \bar{R}_m$	Remarks
057/058	-0.0631	0.5245	-0.0331	
058/059	-0.2888	-0.1723	0.0498	
059/060	-0.1322	-0.4853	0.0642	
060/061	0.0332	-0.238	-0.0079	
061/062	0.1511	0.261	0.0394	
062/063	0.0743	0.1483	0.0110	
063/064	0.1058	0.0251	0.0027	
064/065	0.1211	-0.0641	-0.0078	
<b>Total</b>			<b>0.1183</b>	

We have,

$$\begin{aligned} \text{Cov}(R_j R_m) &= \frac{\sum R_j \bar{Z} \bar{R}_j \cdot R_m \bar{Z} \bar{R}_m}{n \bar{Z} \bar{1}} \\ &= \frac{0.1183}{8 \bar{Z} \bar{1}} \\ &= 0.0169 \end{aligned}$$

$$\begin{aligned} S_j \times \frac{\text{Cov}(R_j R_m)}{\sigma_m^2} \\ &= \frac{0.0169}{0.0988} \\ &= 0.1710 \end{aligned}$$

### Appendix = 3

#### A) Calculation of Co-variation Between BOK(A) and EBL(B)

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$	Remarks
057/058	-0.1803	-0.3456	0.0623	
058/059	-0.1096	-0.5109	0.056	
059/060	-0.2328	-0.076	0.0177	
060/061	0.5084	0.4621	0.2349	
061/062	0.4765	0.2273	0.1083	
062/063	-0.0785	0.4742	-0.0372	
063/064	-0.2877	-0.1747	0.050	
064/065	0.5037	-0.0563	-0.0284	
<b>Total</b>			<b>0.4636</b>	

$$\begin{aligned} \text{Cov}_{AB} &= \frac{\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n} \\ &= \frac{0.4636}{8} \\ &= 0.05795 \end{aligned}$$

#### B) Calculation of Co-variation Between BOK(A) and NBBL(C)

Year	$(R_A - \bar{R}_A)$	$(R_C - \bar{R}_C)$	$(R_A - \bar{R}_A)(R_C - \bar{R}_C)$	Remarks
057/058	-0.1803	-0.1866	0.0336	
058/059	-0.1096	-0.4587	0.0503	
059/060	-0.2328	-0.2164	0.0504	
060/061	0.5084	-0.1164	-0.0592	
061/062	0.4765	-0.07	-0.0333	
062/063	-0.0785	0.6626	-0.0520	
063/064	-0.2877	-0.1485	0.043	
064/065	0.5037	0.4715	0.2375	
<b>Total</b>			<b>0.2703</b>	

$$\text{Cov}_{AC} = \frac{\sum (R_A - \bar{R}_A)(R_C - \bar{R}_C)}{n} = \frac{0.2703}{8} = 0.0337875$$

$$\begin{aligned}
&= \frac{0.2703}{8 Z1} \\
&= 0.0386
\end{aligned}$$

**C) Calculation of Co-variation Between BOK(A) and SCBNL(D)**

Year	$(R_A - \bar{R}_A)$	$(R_D - \bar{R}_D)$	$(R_A - \bar{R}_A)(R_D - \bar{R}_D)$	Remarks
057/058	-0.1803	0.0208	-0.00375	
058/059	-0.1096	-0.3439	0.0377	
059/060	-0.2328	0.0464	-0.0108	
060/061	0.5084	0.3583	0.1822	
061/062	0.4765	0.3213	0.1531	
062/063	-0.0785	-0.2283	0.0179	
063/064	-0.2877	-0.0418	0.0120	
064/065	0.5037	0.1872	0.0943	
<b>Total</b>			<b>0.48265</b>	

$$\begin{aligned}
\text{Cov}_{AD} &= \frac{\sum (R_A - \bar{R}_A)(R_D - \bar{R}_D)}{n Z1} \\
&= \frac{0.48265}{8 Z1} \\
&= 0.0689
\end{aligned}$$

**D) Calculation of Co-variation Between BOK(A) and HBL(E)**

Year	$(R_A - \bar{R}_A)$	$(R_E - \bar{R}_E)$	$(R_A - \bar{R}_A)(R_E - \bar{R}_E)$	Remarks
057/058	-0.1803	-0.0631	0.0114	
058/059	-0.1096	-0.2888	0.0317	
059/060	-0.2328	-0.1332	0.0310	
060/061	0.5084	0.1511	0.0769	
061/062	0.4765	0.0743	0.0354	
062/063	-0.0785	0.1043	-0.00819	
063/064	-0.2877	0.1058	-0.0304	
064/065	0.5037	0.1211	0.061	
<b>Total</b>			<b>0.2087</b>	

$$\begin{aligned}
\text{Cov}_{AE} &= \frac{\sum (R_A - \bar{R}_A)(R_E - \bar{R}_E)}{n Z1} \\
&= \frac{0.2087}{8 Z1}
\end{aligned}$$

$$= 0.0298$$

**E) Calculation of Co-variation Between EBL(B) and NBBL(C)**

Year	$(R_B \overline{ZR_B})$	$(R_C \overline{ZR_C})$	$(R_B \overline{ZR_B})(R_C \overline{ZR_C})$	Remarks
057/058	-0.3456	-0.1866	0.0645	
058/059	-0.5109	-0.4587	0.0692	
059/060	-0.076	-0.2164	0.0164	
060/061	0.4621	-0.1164	-0.054	
061/062	0.2273	-0.07	-0.0159	
062/063	0.4742	0.6626	0.3142	
063/064	-0.1747	-0.1485	0.0259	
064/065	-0.0563	0.4715	-0.027	
<b>Total</b>			<b>0.3933</b>	

$$\begin{aligned} \text{Cov}_{BC} &= \frac{\sum R_B \overline{ZR_B} \sum R_C \overline{ZR_C}}{n \sum Z1} \\ &= \frac{0.3933}{8 \sum Z1} \\ &= 0.0562 \end{aligned}$$

**F) Calculation of Co-variation Between EBL(B) and SCBNL(D)**

Year	$(R_B \overline{ZR_B})$	$(R_D \overline{ZR_D})$	$(R_B \overline{ZR_B})(R_D \overline{ZR_D})$	Remarks
057/058	-0.3456	0.0208	-0.00719	
058/059	-0.5109	-0.3439	0.0519	
059/060	-0.076	0.0464	-0.0035	
060/061	0.4621	0.3583	0.1656	
061/062	0.2273	0.3213	0.073	

062/063	0.4742	-0.2283	-0.1083	
063/064	-0.1747	-0.0418	0.0073	
064/065	-0.0563	0.1872	-0.0105	
<b>Total</b>			<b>0.16831</b>	

$$\begin{aligned} \text{Cov}_{BD} &= \frac{\sum R_B Z \overline{R_B} \sum R_D Z \overline{R_D}}{n Z1} \\ &= \frac{0.16831}{8 Z1} \\ &= 0.024 \end{aligned}$$

**G) Calculation of Co-variation Between EBL(B) and HBL(E)**

Year	$(R_B Z \overline{R_B})$	$(R_E Z \overline{R_E})$	$(R_B Z \overline{R_B})(R_E Z \overline{R_E})$	Remarks
057/058	-0.3456	-0.0631	0.0218	
058/059	-0.5109	-0.2888	0.0436	
059/060	-0.076	-0.1332	0.0101	
060/061	0.4621	0.1511	0.0698	
061/062	0.2273	0.0743	0.0169	
062/063	0.4742	0.1043	0.0495	
063/064	-0.1747	0.1058	-0.0185	
064/065	-0.0563	0.1211	-0.0068	
<b>Total</b>			<b>0.1864</b>	

$$\begin{aligned} \text{Cov}_{BD} &= \frac{\sum R_B Z \overline{R_B} \sum R_E Z \overline{R_E}}{n Z1} \\ &= \frac{0.1864}{8 Z1} \\ &= 0.027 \end{aligned}$$

**H) Calculation of Co-variation Between NBBL(C) and SCBNL(D)**

Year	$(R_C Z \overline{R_C})$	$(R_D Z \overline{R_D})$	$(R_C Z \overline{R_C})(R_D Z \overline{R_D})$	Remarks
057/058	-0.1866	0.0208	-0.00389	
058/059	-0.4587	-0.3439	0.1578	
059/060	-0.2164	0.0464	-0.0100	
060/061	-0.1164	0.3583	-0.0417	

061/062	-0.07	0.3213	-0.0225	
062/063	0.6626	-0.2283	-0.1513	
063/064	-0.1485	-0.0418	0.0062	
064/065	0.4715	0.1872	0.0883	
<b>Total</b>			<b>0.0229</b>	

$$\begin{aligned} \text{Cov}_{CD} &= \frac{\sum R_C Z \overline{R_C} \sum R_D Z \overline{R_D}}{n Z1} \\ &= \frac{0.0229}{8 Z1} \\ &= 0.0033 \end{aligned}$$

#### I) Calculation of Co-variation Between NBBL(C) and HBL(E)

Year	$(R_C Z \overline{R_C})$	$(R_E Z \overline{R_E})$	$(R_C Z \overline{R_C})(R_E Z \overline{R_E})$	Remarks
057/058	-0.1866	-0.0631	0.0118	
058/059	-0.4587	-0.2888	0.1325	
059/060	-0.2164	-0.1332	0.0288	
060/061	-0.1164	0.1511	-0.0176	
061/062	-0.07	0.0743	-0.0052	
062/063	0.6626	0.1043	0.0691	
063/064	-0.1485	0.1058	-0.0157	
064/065	0.4715	0.1211	0.0571	
<b>Total</b>			<b>0.2608</b>	

$$\begin{aligned} \text{Cov}_{CE} &= \frac{\sum R_C Z \overline{R_C} \sum R_E Z \overline{R_E}}{n Z1} \\ &= \frac{0.2608}{8 Z1} \\ &= 0.0373 \end{aligned}$$

#### J) Calculation of Co-variation Between SCBNL(D) and HBL(E)

Year	$(R_D Z \overline{R_D})$	$(R_E Z \overline{R_E})$	$(R_D Z \overline{R_D})(R_E Z \overline{R_E})$	Remarks
057/058	0.0208	-0.0631	0.0118	
058/059	-0.3439	-0.2888	0.1325	
059/060	0.0464	-0.1332	0.0288	
060/061	0.3583	0.1511	-0.0176	



061/062	0.3213	0.0743	-0.0052	
062/063	-0.2283	0.1043	0.0691	
063/064	-0.0418	0.1058	-0.0157	
064/065	0.1872	0.1211	0.0571	
<b>Total</b>			<b>0.2608</b>	

$$\begin{aligned}
\text{Cov}_{DE} &= \frac{\sum R_D Z_{R_D} \sum R_E Z_{R_E}}{n Z_1} \\
&= \frac{0.16431}{8 Z_1} \\
&= 0.0235
\end{aligned}$$

## Appendix – 4

### (A) Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\dagger$ ), and Coefficient of Variance (C.V.) of BOK

$$\begin{aligned}\text{Expected return } \bar{R} &= \frac{R}{n} \\ &= \frac{0.2557}{8} \\ &= 0.0320\end{aligned}$$

$$\begin{aligned}\text{Standard deviation } (\dagger) &= \sqrt{\frac{\sum R^2 - \frac{(\sum R)^2}{n}}{n-1}} \\ &= \sqrt{\frac{0.9824}{7}} \\ &= 0.3746\end{aligned}$$

$$\begin{aligned}\text{Coefficient of variance (CV)} &= \frac{\dagger}{\bar{R}} \\ &= \frac{0.3746}{0.0320} \\ &= 11.71\end{aligned}$$

### (B) Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\dagger$ ), and Coefficient of Variance (C.V.) of EBL

$$\begin{aligned}\text{Expected return } \bar{R} &= \frac{R}{n} \\ &= \frac{0.8873}{8} \\ &= 0.1109\end{aligned}$$

$$\begin{aligned}\text{Standard deviation } (\dagger) &= \sqrt{\frac{\sum R^2 - \frac{(\sum R)^2}{n}}{n-1}} \\ &= \sqrt{\frac{0.9903}{7}} \\ &= 0.3761\end{aligned}$$

$$\begin{aligned}\text{Coefficient of variance (CV)} &= \frac{\dagger}{\bar{R}} \\ &= \frac{0.3761}{0.1109} \\ &= 3.392\end{aligned}$$

**(C) Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\dagger$ ), and Coefficient of Variance (C.V.) of NB bank**

$$\begin{aligned}\text{Expected return } \bar{R} &= \frac{\sum R}{n} \\ &= \frac{Z0.6214}{8} \\ &= Z0.0777\end{aligned}$$

$$\begin{aligned}\text{Standard deviation } (\dagger) &= \sqrt{\frac{\sum R^2 - \frac{(\sum R)^2}{n}}{n-1}} \\ &= \sqrt{\frac{1.0378}{8-1}} \\ &= 0.3850\end{aligned}$$

$$\begin{aligned}\text{Coefficient of variance (CV)} &= \frac{\dagger}{\bar{R}} \\ &= \frac{0.3850}{Z0.0777} \\ &= Z4.955\end{aligned}$$

**(D) Realized Return(R), Expected Return ( $\bar{R}$ ), Standard Deviation ( $\dagger$ ), and Coefficient of Variance (C.V.) of SCBNL**

$$\begin{aligned}\text{Expected return } \bar{R} &= \frac{\sum R}{n} \\ &= \frac{1.2806}{8} \\ &= 0.1601\end{aligned}$$

$$\begin{aligned}\text{Standard deviation } (\dagger) &= \sqrt{\frac{\sum R^2 - \frac{(\sum R)^2}{n}}{n-1}} \\ &= \sqrt{\frac{0.4802}{8-1}} \\ &= 0.2619\end{aligned}$$

$$\begin{aligned}
\text{Coefficient of variance (CV)} &= \frac{\dagger}{R} \\
&= \frac{0.2619}{0.1601} \\
&= 1.6360
\end{aligned}$$

**(E) Realized Return, Expected Return, Standard Deviation and Coefficient of Variance of HBL**

$$\begin{aligned}
\text{Expected return } \bar{R} &= \frac{R}{n} \\
&= \frac{Z0.0356}{8} \\
&= Z0.0045
\end{aligned}$$

$$\begin{aligned}
\text{Standard deviation } (\dagger) &= \sqrt{\frac{\sum R^2 - \frac{(\sum R)^2}{n}}{n-1}} \\
&= \sqrt{\frac{0.1605}{8-1}} \\
&= 0.023
\end{aligned}$$

$$\begin{aligned}
\text{Coefficient of variance (CV)} &= \frac{\dagger}{R} \\
&= \frac{0.023}{Z0.0045} \\
&= Z5.1
\end{aligned}$$