

# CHAPTER – 1

## INTRODUCTION

### 1.1 background information

Nepal is a small country with a very unique physical setting, surrounded by fast economically growing countries like India in south, east and west and china in north. It is a landlocked country with 800km long open border with India. Physically, it can be divided into four main regions but with wide variations altitude and climate. They are:-

- i. The Himalayan region and inner Himalayas.
- ii. Sub Himalayan or the mountainous region.
- iii. Valley basic or inner terai and
- iv. The terai region.

Nepal lies one of the least developed countries of the world with about \$ 220 per capital income. Agriculture is the economic backbone. It covers 80% of Nepalese source of income.

The banking history of Nepal is no more than seven decades. After restoration of democracy in Nepal in 2046 B.S. the government followed the tools of economic liberalization policy, which has attempted and motivated golden environment for foreign investments in Nepal. The democratic government issued "Foreign investment and Open Door Policy 2049", which opened the door for foreign investment.

The financial infrastructures of an economy consists of financial inter mediator, commercial banks and financial market. Commercial banks play the role of catalyst in the process of economic growth of the country. The modern financial development system of the world characteristically falls into the following categories.

- a. The central bank
- b. The commercial bank

- c. The other financial institutions: as Development Banks, Investment Banks, Financial company, Merchant Banks, Pension Funds, Trust Fund etc.

The commercial banks is established with the objective of providing loan to agriculture, trade & commerce and industry or any other specific economic sector, or of accepting deposits from public. Modern banks perform many other varieties of functions. Therefore, it is difficult to define the functions of modern banks because of their complexities and versatility in operation. They render a wide range of services to people in different walks of life. They have become an essential part of modern society. Thus, bank is a financial institution, which accepts deposits from public and in turn advances loans by creation credit.

Commercial banks provide services to the investors, entrepreneurs, businessmen, government and other individuals. Banks are those financial institutions that offer the widest range of financial services especially saving, credit and payment services. Receiving deposits of various kinds, lending money issuing Cheque and collecting Cheque etc. are the essential functions of bank. Bank motivates the people to mobilize saving, for economic development. Bank promotes the investment and capital formulation for safety of wealth, transfer of money. Bank is a very important institution because it acts several roles such as inter-mediator role, payment role guarantor role, agency role etc.

Since the implementation of the open door policy, numerous financial institutions and some joint venture, commercial banks have been established. In banking sector, three commercial banks (NABIL, SCBN, NIBL ) were reputed as the investors of foreign investment during B.S.2041-2043.therefore, the historical development of banking in Nepal is not very long. However it makes up more than two thirds of the country's economy. But being a developing country, there are not sufficient joint venture banks and commercial banks in Nepal.

Although, there are various types of banks, joint venture banks are considered for the purpose of the study. Te joint venture banks are heart of modern financial system. They provides large portion of the medium of exchange, and they are media through which monetary policy is imposed and implemented by the Central Bank.

Thus, Joint Venture Banks are important vehicles to the smooth functioning of the economy.

### **1.1.1 History of Banking in Nepal**

In the context of Nepal, the history of banking is not as long as financial institutions. In the 8<sup>th</sup> century, they were placed for borrowing or loan lending transactions. In 780 B.S. King Gunakam Dev looked loans from merchants to rebuild the Kathmandu city and later on in 937 B.S. Shankhadhar Shakhwa, who was a famous merchant, paid the loan of people and started "Nepal Shambat". But later on, in the 14<sup>th</sup> century, the famous Malla king Jyasthiti Malla divided people into 64 castes on the basis of their profession. Among the different castes there formed a group whose job was borrowing and lending money at that time. This group was known as 'Tankadhari'. However, the installation of "Kausi Tosha Khana" as a banking agency during the regime of King Prithvi Narayan Shah is regarded as the first step towards initiating banking development in Nepal.

In the 19<sup>th</sup> century, then the Prime Minister, Ranodeep Singh established "Tejarath Adda" at Kathmandu. The main purpose of setting up of this "Tejarath Adda" was to provide loan for government officers, members of staff and also for the general public under the collateral of silver and gold at 5% p.a. interest rate. During the period of Chandra Shumser the "Tejarath Adda" was established which is regarded as the premier foundation of modern banking in Nepal.

Due to the increasing banking transactions, modern bank and institution began to be established. Nepal Bank Limited was the first modern bank, which was established in 1994 B.S. under the Nepal Bank Act with one crore rupees of authorized capital. To further develop and control banking management and monetary system, Central Bank felt necessary to issue Nepal Bank Act 2012. Then Nepal Rastra Bank was established systematically under Act with 1 crore capital.

Later on in 2022 B.S. under the ownership of Government, Rastriya Banijya Bank was established with authorized capital of 1 rupees of crore. Then

after some years, the government felt the need of economic liberalization policy for the development of commercial banks. The government adopted economic liberalization policy. As the result, it became successful to attract or motivate foreign investors. So, Nepal Arab Bank ( NABIL 1984) was established as the first Joint Venture Bank in Nepal. Similarly, Standard Chartered Bank Ltd.(Former Nepal Grind lays Bank Ltd.1987) and Nepal investment bank Ltd. (Former Nepal Indosuez Bank Ltd.) started their operation in the 1980s. The speed opening up of private commercial bank didn't stop and expected to enhance the inflow of foreign capital, technical knowledge, experiences and concept of healthy competition. As a result, more and more joint venture have been increased rapidly in Nepal. According to the latest report of NRB there are 17 commercial banks are operating in Nepal, 24 Development Bank,4 Regional Rural Development Bank, 59 Financial Companies, 21 Co-operative (with limited banking transaction ) and 45 NGO's (Micro financing transaction )

The foreign commercial banks play the vital role to manage the Joint Venture Bank in Nepal. All Joint Venture Banks are established and operated under rules and regulation on NRB.

### **1.1.2 Concept & Evaluation of Joint Venture Bank**

"A joint venture is joining of forces force between two or more enterprises for the purpose of carrying out a specific operation, such as industrial, commercial, trade investment and production"<sup>1</sup>

By nature, Nepalese commercial banks can be classified into two categories viz. domestic commercial banks and commercial banks with foreign collaboration. The commercial banks with foreign collaboration are also called Joint Venture Bank. Joint venture bank is a general model for foreign direct investment.

Joint Venture means joining of forces between two or more enterprises for the purpose of carrying out of specific operation. Joint Venture is a mode of trading through partnership among the nations. It is also a form of negotiation

between various groups of industries and traders. There must be at least two parties and the concepts of complementary and synergy in joint venture.

Nowadays, Joint Venture concept has become more popular and acceptable in comparison to other concepts. In common parlance, Joint Venture Banks in Nepal refer to foreign JVBs in which Nepal investor and foreign investor (parent bank) each supplies 50% investment for main objectives of banking facilities and operating.

Nepal government adopted the tool of Economic Liberalization Policy during 2040s B.S., to motivate foreign investment into Nepal. As a result, the collaborate investment also started in banking sector. So, Nepal Arab Bank was established as the first Joint Venture Bank in Nepal similarly, Standard Chartered Bank Ltd and Nepal Investment Bank Ltd started their operation in the decade of 1980s. In Nepal, to encourage JVBs banking sector major, reforms were carried out in 1980s. The reforms include allowing the foreign banks to operate as Joint Venture, lifting control on interest rate and introduction of auctioning of government securities. The government's policy of allowing foreign JVB to operate in Nepal is basically targeted to encourage local and traditionally-run commercial banks to enhance the banking capacity through competition, efficiency, modernization, mechanization viz, computerization and prompt customer services.

Joint Venture Banks are registered in Nepal under Company Act 2021 B.S. and operate under the Commercial Bank Act 2031. They have Joint Venture between Nepalese investment and the parent banks.

There are many Joint Venture Banks in Nepal. Among them, the researcher has attempted to take only 7 banks they are

### **1.1.3 Objectives of Joint Venture Banks**

In Nepal, every year the foreign investment is increasing in financial sectors like bank, insurance, finance and leasing etc. Less effort have been made in manufacturing, contracting designing etc. JVBs pose serious challenge to the existence of inefficient native banks. But the same challenge can be taken by

domestic banks as opportunity to modernize. So it is clear that JVBs is playing a dynamic role to boost up the economic status of the nation. The main objectives of JVBs are follows:-

- a) Joint Venture Banks provide new services including speeder services as compared to domestic and government banks.
- b) At present, it has been found that the JVBs have introduced new & modern technology efficiently and conveniently.
- c) Before the arrival of JVBs in Nepal, there was little competition between NBL & RBB. But JVBs have created a healthy-competitive environment in customer service, working area and technology.
- d) JVBs offer better life for Nepalese business with international market.
- e) To commercialization of domestic technology.

## **1.2 statement of the problem**

The capital market has grown rapidly within very short period after the establishment of stock exchange but the attitudes, thoughts and knowledge of investor has not changed yet. They do not have idea of risk and return. There are no separate institutions, which provide information required making rational decision by the investors and on the other hand lack of good policy had discouraged the investors

Investors need to have more knowledge about investment opportunities. They must be able to analyze the associated risk and returns of individual stock. This will increase the market efficiency. As investment must be able to design his investment and financing activities in the manner to maximize the market value of shares. There are no sources to get exact or perfect information about her future regarding risk and return on investment in Nepal. Investing funds in different securities diversifies the risk which needs to be understood by Nepalese investors.

In Nepal, major weakness on the increment of stock market efficiency is due to lack of skills, Knowledge, resources and technology. Most of the investors are not seem to be aware of financial position of the companies in term of their financial indicators in which they are going to invest their funds. Through secondary market NEPSE, the market price of common stock seems to be in

accordance with the financial indicators. Instead, in determination of market price of share, there has been major influence of rumors rather than strengths of the companies.

At the same time there are no any institutions, which provide information required to make rational decision that can accelerate stock investment and market efficiency. Government policy is found less encouraging in promoting common stock investment. On the other hand, usually there is positive trade off between risk and return. It is true that riskier assets will pay a higher average rate of return to make the riskier investment.

There are very few practices of analyzing this aspect in Nepalese context. Most of the investors seem to be investing their funds haphazardly without considering risk involved in their investment. In Nepal the investors have no much more alternatives for investment, so every one is making investment in security market. Only few companies are listed in NEPSE, which still limits the opportunities of investment. This trend has made the market unbalanced and unfair. If any bank or financial institution issues shares there becomes huge demand rather than supply, but if any manufacturing and processing issues share, very little investors make investment.

The major research problems are:-

- ) How can one best use the available money or sources?
- ) How can one make higher return through lower risk?
- ) What are the factors that determine the returns out of the risk of a company?

### **1.3 Focus of the study**

Financial analysis is the important part of the economy so that every management is making their managerial decision on the basis of financial analysis. Finance is composed three functions, investment, financing and dividend. All those having even little knowledge about finance are interest on investment. When the matter arises regarding investment, the stock market definitely draws the attention of every body. In Nepalese context stock market is assumed at least understood but, widely discussed in society. People think investment on stock market is like ever winning game without knowing the reality.

But investments are followed by risk. So an investor must to about the risk before making an investment. Nepalese are innocent about the investment opportunity and risk associated with it. Investor must consider all related factors before considering making an investment; this study is focused on analyzing risk and return associated with the shares of some commercial banks.

#### **1.4 objectives of the study**

The basic objective of the study is to analyzed and identifies the nature of relationship between risk and return. The main objectives of the research are to analyze, examine and interpret the risk and return on common stock investment of selected commercial banks of Nepal.

#### **The specific objectives of the study are as follow:-**

- ) To calculate the risk and return of a common stock of listed commercial banks.
- ) To analyze risk and return relationship of individual stocks with that of market.
- ) To examine and evaluate the common stock of listed commercial banks in terms of risk and return.
- ) To perform sector wise comparison on the basis of market capitalization.
- ) To study and analyze the beta co-efficient of listed commercial banks.
- ) To study and analyze the portfolio risk.
- ) To identify the correlation among return of different commercial banks.
- ) To identify the whether the price of common stock of listed commercial banks are under priced, over priced or at equilibrium.
- ) To make relevant suggestions and practical ideas and materials recommendation based on findings.

#### **Hypothesis:**

This study will test the following hypothesis:-



HO = Null Hypothesis: - there are no differences between average return of common stock of listed commercial banks and market return.

### **1.5 Significance of the study:**

Investors are investing their saving funds in common stock of public companies with the hope of good expectation of higher capital gain in future but there seems very least consciousness about the real financial conditions of the companies and degree of risk involved in their investment.

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 topic "beta analysis". Because of these all things most of the investors are investing on the capital market without any proper knowledge and information. So investment on capital market is just like "shooting in the dark"

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

The study will be beneficial for all persons who are directly or indirectly related to capital market, also helpful for other researchers in the area of investment as it provides suggestions to some extent and it is hoped that it will also contribute although little to Nepalese stock market development. In the suggestion part it is suggested 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 is quite necessary for development of security market in Nepal. Apart from all there, this study may be a matter of interest for academicians, students, teachers and practices in field of finance.

### **1.6 Limitations of the study:**

The following are some limitations of the studies:

- ) It covers only relevant data of last five years from 2003/2004 to 2008/2009
- ) Only few commercial banks are taken into consideration.
- ) This study focuses only on analysis of risk and return leaving other components.
- ) Most of the data are secondary in nature.
- ) The main focus is given to the quantitative aspects.

## **1.7 Organization of the study:**

The study has been broadly divided into five chapters, which are as follows:

### **Chapter I introduction**

It covers general introduction, statements of problem, objectives, significance of study, hypothesis statement and limitation of study etc.

### **Chapter II Review of literature**

It consists of the conceptual / theoretical review of related studies.

### **Chapter II Research Methodology**

It focuses on research design population and sample sources of dates, data analysis tools and limitation of the research methodology.

### **Chapter IV Data presentation and analysis**

This chapter attempt to analyze and evaluate the data with the help of analytical tools and interpret the result.

### **Chapter V Summary, Conclusion and Recommendation**

This chapter attempts the result obtained through analysis and recommends some suggestion.

## **CHAPTER –II**

### **REVIEW OF LITERATURE**

Review of literature is the chapter where a researcher reviews the book, Journals, magazines, or any other type of studies, which are related to the field of the study. Research is a continuous process it never ends. The procedures and the findings may change but research continues. So for 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 one's area, to see what new contributions can be made, and to receive some ideas for developing a research design. Thus, the previous studies cannot be 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.

In this chapter relevant and recent literature, which are related to the topic risk and return, is reviewed. Topics from basic academic courses books and different studies published in magazines, thesis of seniors and journals related to the study are reviewed below.

#### **2.1 Conceptual review:**

Central focus of the finance is trade off between risk and return. This study has focused on the risk and return analysis in the investment on common stock. This section of the chapter reviews the meaning and definitions of different concepts and terms used in this study.

##### **2.1.1. Common stock:**

"The study is focused on the common stock investment that's why light is thrown on it. Common stock represents ownership position in a corporation. It has a residual claim, in the sense that creditors and preference shareholders can receive payment only after the payment of all other claims. In bankruptcy,

common stockholders are in principal, entitled to assets remaining after all prior claimers have been satisfied. The risk is highest with common stock investment. When investors buy common stock they received certificates of ownership as a proof of there being part of the company. The certificate states the number of shares purchased and their par value.

"Common stock holders of a corporation are its residual owners, their claim to income and asset comes after creditors and preference share holders have been paid in full. As a result, a stockholders return on investment is less certain than the return to lender or to a preferred stock holder's. On the other hand, the share of the common stock can be authorized either with or without par value. The par value of stock is merely a sated figure in the comported charter and is of little economic significance. A company should not issue stock at a price less then par value because stock holders without bought stock for less then par value would be liable to creditors for the difference between the below are price they paid and the par value But in Nepal, as per the provision of Nepal Company Act 2057, no common stock is allowed to issue without par value. Its par value must be either Rs. 10 or Rs. 100.

Common stocks have one important investment characteristic and are important speculative characteristics. Their investment value and average market price tend to increase regularly nut persistently over the decided as their net worth builds through the reinvestment of undistributed earning. However, most of the time common stocks are subject to irrational and excessive price fluctuation in both directions as most people to speculate or gamble i.e. to give way to hope fear and greed.

### **2.1.2 The return on common stock**

Returns are defined as the dividend yield plus the capital gain or loss. The relationship between level of returns and their relative frequencies is called probability distribution. We could formulate a probability distribution with relative frequency of a form's annual returns by analyzing its historical return over the pervious years. But we know that history never repeats itself exactly. Hence, we can forms a probability distribution based on historical data plus our analysis for

the outlook for the economy, the outlook for the industry (Cheney and Moses, 1982,p;29).

Return is the income received on an investment plus any change in market price, usually expressed as a percent of beginning price of the investment. The overall rate of return can be decomposed into two parts as capital appreciation and dividend. Capital appreciation is the differences between ending value and beginning value of an investment. Return is the main attraction for an investor to invest in a risky security as stock (equity share) accepting a varying degree of risk tolerance the return from holding an investment over some period, say a year is simply any cash payments received due to ownership plus the change in market price, derived by one beginning price for common stock we can define single period return as:

$$\text{Single period rate of return ( } r \text{ )} = \frac{D_{t+1} + (P_t - P_{t+1})}{P_{t+1}}$$

Where as,

$P_{t+1}$  = Ending price

$P_t$  = beginning price

$D_{t+1}$  = Year end dividend

Above formula can be used to determine both actual one period return (when based on historical figure) as well as expected one period return (when based on expected dividend and prices). The term in the parenthesis is the number of the above equation represents the capital gain or, loss during the period. (Shrestha, 2003mP:45).

Annualized rate of return over several periods be calculated in two ways the first one is simply to take the arithmetic mean (average) of annual holding period returns over a given period and the second one, which also takes account the compounding effects of cash receipts over different time intervals is the geometric mean rate of return. The simple arithmetic mean return is obtained as follows. (Shrestha, 2003, P: 46)

The simple arithmetic mean:

$$\bar{HPR} = \frac{\sum_{r=1}^n HRP}{n}$$

The geometric mean

$$\bar{HPRG} = \sqrt[n]{\prod_{t=1}^n (1 + HR_t)}$$

where as,

HPRG = Holding period return

HPRg = Geometric mean

n = no. of period

### 2.1.3 THE RISK ON COMMON STOCK

Uncertainties and risk are the fact of life holders and it is also defined probability of the occurrence of unfavorable outcomes. Risk has different meanings. In out context two measures developed from the probability distribution have been used as initial measures of return and risk. There are the mean and the standard deviation of the probability distribution (Weston and Brigham, 1996, P: 93). Instead of measuring risk the probability of a number of different possible outcomes, the measures of risk should somehow estimates the extent to which the actual outcome is likely to average form the expected outcome. Standard deviation is a measure that does this since it was an estimate of like as divergence of actual return from an expected return.

Risk is a complicated subject and needs to be properly analyzed. The relationship between risk and return is described by investor's perceptions risk and their demand for compensation. No, investor will like to invest in risky assets useless he is assured of adequate compensation for the assumption of risk therefore, it is the investor required risk premium that established a link between risk and return in a market dominated by rational investor's higher risk will command by rational premium and the tradeoff between the two assumes a linear relationship between risk and risk premium.

Risk and uncertainty are treated separately is financial analysis. The practices is a to translate the uncertainty into a mathematical value, which represents the best estimate of all uncertain values in other words uncertainty is

taken care of by calculating the expected value of all possible uncertain outcomes. But risk is treated differently. Although risk from uncertainty is magnitude depends upon the degree of variability in uncertain cash flow and it is measured items of standard deviation.

Another parameter of return distribution is a measure of dispersion of variability around expected return the conventional measure of dispersion is the standard deviation the greater the standard deviation of returns the greater the risks of the investment. The standard deviation ( $\sigma$ ) can be expressed mathematically as,

$$\sigma = \sqrt{\sum_{i=1}^n (R_i - \bar{R})^2 (P_i)}$$

operationally we generally first calculate distribution variance or, the weighted average of square deviation of possible occurrence. From the mean value of the distribution with the weight being the probabilities of occurrence the square root of the figures will provide standard deviation.

Common stock returns, a continuous distribution is a more realistic assumption, any number of possible outcome ranging from a large loss to large gain are possible (Van Horne, 1995, P:95 ).

A return distributions standard deviation turns out to be rather versatile risk measure it can serve as an absolute measure of return variability the higher the standard deviation. In addition, we can use it to determine the likelihood that actual outcomes will be greater or, less than a particular amount using following formula:

Common stock returns a continuous distribution is a more realistic assumption, any number of possible outcome ranging from a large loss to large gain are possible.

A return distributions standard deviation turns out to be rather versatile risk measure. It can serve as an absolute measure of return variability the higher the standard deviation the greater the uncertainty concerning the actual outcome in

addition, we can use it to determine the likelihood that an actual outcome will be greater or, less than a particular amount using following formula

$$Z = \frac{R - \bar{R}}{\sigma}$$

Where as

R = the return range limit of interest

Z = Z –score (Which tell us how many standard deviation R is from the mean)

As long as the return distribution is relatively symmetric a mirror image above and below. The mean, standard deviation still works, the greater the standard deviation the greater the possibility of large disappointment.

A standard deviation can sometimes be misleading in comparing the risk, or uncertainty surrounding alternatives if they differ in size to adjust for the size or scale, problem, the standard deviation can be divided by the expected return to compute the co-efficient of variance (C.V.)

$$C.V = \frac{\sigma}{\bar{R}}$$

Co-efficient of variation

Thus the co-efficient of variation is a measure of relative dispersion (Risk) measure of risk per unit of expected return CV = the ratio of the standard deviation of a distribution to the mean of that distribution. This is the measure of relative risk ( Van Horne and Machowicz, 1995, P:94)

While consulting the different book, it is found that one assumption (generally accepted view) is made, that is the investors are by and large risk averse and in other words investor that have been return for the assumption and in other works investor that have been studied are characteristically those who demand a higher expected return for the assumption higher risk. This implies that risky investments must offer higher expected returns than less risky investments for investors to buy and hold them. In short, there is no free lunch when it comes to investments any claims for high return produced by low-risk investments should be viewed skeptically.

Investors rarely place their entire wealth into a single assets or investment. Rather they construct a portfolio on group of investments therefore, it is needed



to extend analysis of risk and return to income portfolio- A combination of two or more securities or, assets is a portfolio.

The expected return of a portfolio is simply weighted average of the expected returns of the securities comprising that portfolio the weights are equal security (the weight must sum 0 to 100 percent the general formula for expected return of a portfolio  $R_p$  is as follows:

$$\bar{R}_p = \sum_{i=1}^n (w_i \bar{R}_i)$$

Whereas,

$W_j$  = Proportion or weight of total funds invested in security  $j$

$\bar{R}_j$  = Expected return for security  $j$ , and

$m$  = total no. of different securities in the portfolio

while the portfolio expected return is a straight forward weighted average of returns on the individual security, where as portfolio standard deviation is not weighted average of individual security 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 correlation, however has no effect in the portfolio expected return correlation between security return and complicates the calculation of portfolio standard deviation by forcing to calculate the covariance between return for every possible pair wise combination of securities in the portfolio But, this dark could of mathematical complication contains a silver lining correlation between securities provides the possibility of elimination some risk without reducing potential return.

The standard deviation of probability distribution of possible portfolio return ( $\sigma_p$ ) can be calculated as below ( Pant, 1998, P:52-56 ).

$$\sigma_p = \sqrt{\sum_{j=1}^m \sum_{k=1}^m w_j w_k \sigma_{j,k}}$$

Whereas,

$m$  = total no of different securities in the portfolio

$W_j$  = Proportion of total funds invested in security  $j$

$W_k$  = Proportion of total fund invested in security  $k$

$J_k$  = covariance between possible return for securities  $j$  and  $k$

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

$$\text{Cov } jk = r_{jk} \sigma_j \sigma_k$$

Whereas,

$r_{jk}$  = the expected correlation co-efficient between possible returns for securities  $j$  and  $k$ .

$\sigma_j$  = standard deviation for security  $j$  and

$\sigma_k$  = standard deviation for security  $k$

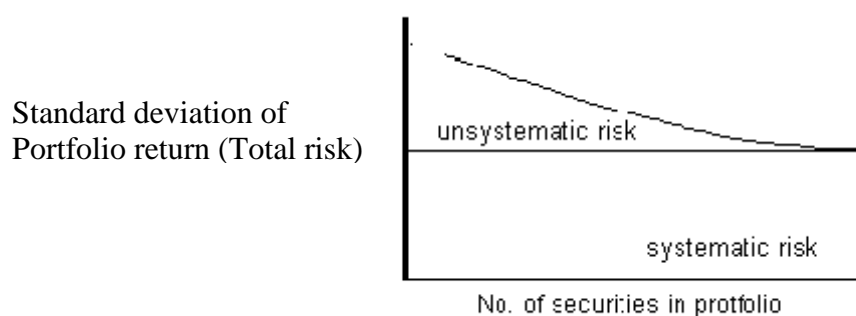
When  $J = K$ , the correlation co-efficient is 1 as a variables movements correlate perfectly with itself and  $r_{jk} \sigma_j \sigma_k$  becomes  $\sigma_j^2$ . Once again it will be seen that our concern along the diagonal of matrix is with each securities own variance.

The correlation co-efficient always lies in the range from -1 to +1. A positive correlation co-efficient indicates that the returns from two securities generally move in opposite direction. The stronger the relationship, the closer the correlation is to one of the two extremes values. A 0 co-efficient implies that the return from two securities are un-correlated; they show no tendency to vary together in either a positive or negative in linear fashion most stock return tend to move together but not perfectly. Therefore, the correlative co-efficient between two stock is generally positive but less than 1. the important principle to grasp is that as long as the correlation co-efficient between two securities is less than 1, the standard deviation of the two portfolio will be less than the weighted average

of the two individual standard deviation. Hence everything else being equal, risk adverse investors may want to diversify their holdings.

Meaningful diversification involves combining securities in a way that will reduce risk. Reduction occurs as long as the securities combined are not perfectly positively correlated.

Systematic and unsystematic risk is the terms frequently used in portfolio context. Combining securities that are not perfectly positively correlated helps to lessen the risk of a portfolio to some extent. How much different security holdings in portfolio to some extent? How many different security holdings in portfolio would be required? Answer to the question will be explained in following paragraphs.



Relationship of total, systematic and unsystematic risk of portfolio size:-

In case of single stock the risk of a portfolio is the standard deviation of that stock as the randomly selected stocks held in the portfolio is increased, the total risk of the portfolio is reduced. Such a reduction is at a decreasing rate.

Thus, a substantial proportion of the portfolio risk can be eliminated with a relatively moderated amount of diversification.

The total portfolio risk is comprised of two components.

Total Risk = Systematic risk + Unsystematic risk the first part systematic risk is due to risk factors that affect the overall market such as changes in nation

economy, tax reform by government or changes in the world energy situation. These are risks that affect securities overall and consequently, cannot be diversified away. In other words even an investor who holds a well diversified portfolio will be exposed to this type of risk

The second component, unsystematic risk is unique to a particular company or industry. It is dependent of economic, political or other factors that affect all securities in a systematic manner. Risk may affect any one company a new competition may begin to produce essentially the same product or a technological breakthrough can make an existing product obsolete.

### 2.1.4 Capital assets pricing model (CAMP)

CAMP is a model that describes the relationship between risk and expected return. In this model a security's expected return is the risk free rate plus a premium based on the systematic risk of the security the SML equation as suggested in this model is:

$$K_j = R_g + [ E (R_m) - R_g ] B_j$$

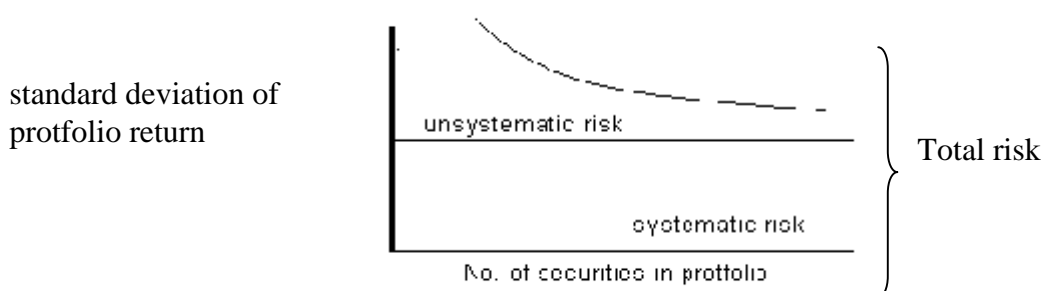
Whereas,

$K_j$  = required rate of return for stock j

$R_g$  = Risk free rate of return

$E (R_m)$  = Expected Return for the market portfolio

$B_j$  = an index of systematic risk of stock j



Where, beta measures the sensitivity of stock's returns. It changes in returns on the market portfolio the Beta of portfolio is simply a weighted average of the individual stocks beta in the portfolio.

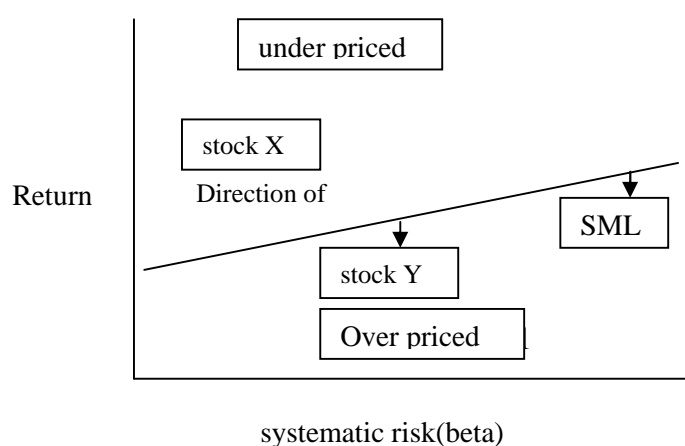
If beta is 1 then the required return is simply the average return for all situations. i.e., the return on market portfolio, otherwise, the higher the risk premium and the total return required the actual return depends partly on the behaviors of the market, which acts as proxy for general economic factor.

Premium is the amount of return that investor demands for holding a risky security such as stock. A financial economist William sharp is one of he creators of the "Capital assets pricing model", a theory that begin a quest to identify the tendency portfolio. In fact, the CAMP as it called is the predominant model used for estimating equity risk and return. CAMP is very useful tools; it has been taken as prescription for the investment portfolio, as well as tools for estimating an expected rate of return. Comparison between the expected rate of return and required rate of return can analyzed the stock to be under priced or overprice in addition when these two returns are equal then it is said to be market equilibrium i.e. stocks lie on the security market line (SML) the graphical CAMP is called the security market line which shows the relation between expected rate of return and the required rate of return.

The security market line clearly show that return is the increasing function in fact a linearly increasing function of risk furthermore, it is only market risk that effects return. The investors receives no added for bearing diversifiable risk (Chandra, 1994, P: 72)

Stock that are overpriced lie below the SML and if the stocks are under prices than it lie above the SLM.

Under price and overprice stock during temporary market disequilibrium.



Above diagram clarifies that stock X being under priced, its expected rate of return is greater than required rate of return. Moreover, sock Y is expected to provide lower return than the required rate to compensate the systematic risk. Investor seeks the opportunity to invest in stock X for superior return.

Investing in stock X should rush to buy it. This action could derive the price up and the expected return down. How long would this continue? It would continue until the market price was seems that the expected would no\w like on the security market line. In the case of stock y, investor, holding this stock would sell it. Recognizing that they put obtain a higher return. The same amount of systematic risk with other stocks. This selling pressure would drive y's market price down and its expected return up until the expected returns is on the SML.

## **Review from related studies:**

### **2.2 Review from journals:**

In this section of the chapter, articles published in the journals were reviewed; information from the internet was also collected and reviewed for this purpose finance from the investor's perspective is explained. Investor whether they are individuals or institutions. Such as pension funds mutual funds hold portfolios that are they hold a collection of different securities. Such of the innovation in investment research over all past 40 years has been the development of the theory of portfolio management and this module is principally on introduction to these new methods. It will answer the basic question what rate of return will investors demand to bold a risky security in their portfolio? To answer this question we first must consider what investors want how we define return, and what mean by risk ( Goetzmann, 1999, P: 26).

The author noted that there were several companies. Which conduct the annual general meetings (BGM) just to fulfill their desire and do not consider the voice of the majority of the shareholders? Similarly management involve and government intervention in the board. Election have brought a greater set back in the voting rights of the shareholders.

(Pokhrel, 1999, PP: 24-35) wrote that the investment on the shares of manufacturing and processing was more attractive than that of the banks. He found that the shares of individual companies showed very good performance from October 1998 to 1999 NEPSE index showed upward trend for all the shares in this period. The author gave following reasons behind the appreciation of share price.

- ) Companies have rewarded shareholders.
- ) Reduction of interest rate of money market.
- ) Healthy speculation and loan has made the market interesting by providing loan to the block investors their shares as collateral.
- ) Investors are appearing more rational in their investment decision.
- ) Continuity maintained in the Government Policy is and added advantage to the market.

Finally the author concluded that the capital market needs more infrastructure investment that concluded that the Nepalese share price is decreasing because of many unbalanced factors.

The major reason behind the movement in the index is the domination of the banking sector in the Nepalese stock market transactions mismanagement practices cannot help the growth of share market. The general public has invested recklessly. They just believe what one broker or the investor says about the business. One of the prime motives for the investment is to earn return on it. Finally the author concluded that the general investors should be alert and aware of the situations. They must receive the financial information before that they make investment rationally.

It is important to understand how personal circumstances affect investment decisions. (if these factors make no difference we could simply publish one suggested portfolio for everyone to follow) investment profile is the beginning of the asset allocation process, which consists of dividing portfolio among the major asset categories of stocks bonds and cash. The asset allocation decision will have a far more effect on portfolios return.

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

The technical term for this is not putting all your eggs in one basket. In this way, if you trip, you won't break all the eggs. The certain of a portfolio by combining two assets that behave exactly the same way cannot reduce the portfolio overall risk below the risk of the least risky assets.

Total return calculated as the sum of the dividend return and price appreciation, using prices scaled by a capital adjustment factor, which the IFC computes 0 correct for the effect associated with stock dividends and right issues, many emerging markets have firm with multiple classes of shares carrying different ownership restrictions. Firms with multiple share classes are treated as a value weighted portfolio of the outstanding equity securities (Rouwenhourst, 1999, P.P:1442-43).

### **2.2.1 Review from thesis:**

This report available in the TU central library and Mahindra Multiple Campus library were reviewed. In financial analysis and management, the concept of beta analysis is not a new however; limited studies have been carried out in this subject in Nepal. Due to mainly slow growing capital market, some of selective findings of those studies are presented as below:

Assessment of the performance of listed companies in Nepal concluded that Nepalese capital market is not deficient and Nepalese investors have not yet practiced to invest in portfolio of securities. Market risk and return may not represent reality, as stock does not contain all the information related to market and company, neither investor analyzes the overall relevant information of a stock nor the member of stock exchange tries to disseminate the information. The analysis shows that most companies are facing problems of unsystematic or specific risk. It was observed that Nepalese stock market required expert



institutions for consultancy services to the investors to maximize their wealth through rational investment decision (Bhatt, 1996, MBS unpublished thesis).

Risk and return analysis of common stock investment concluded that among all the securities common stock is known to be the most risky security higher the risk, higher will be the return. Most of the investors are attractive to common stock security because of its higher expected return. As for the investor, it is important to analyze each investment, comparing to potential returns with the risk. On average the potential returns from an investment should compensate for the level of risk undertaken. If proper allocation of assets is performed, it can reduce risk and can even be eliminated if well diversified though the study conducted by Pandey did not focus on the diversification of risk through the proper allocation (Pandey, 2000, P:36)

A study on the investment policy of Nepal Grindlays Bank Ltd in comparison to other joint venture bank of Nepal has suggested that the other commercial banks to following liberal sending policies so that more percentage of deposits can be invested to different profitable sectors which affect the net profit of the Bank. A skillful administration is the most for these assets as the negligence may become a reason for liquidity crisis and bankrupt (Tuldhar, 2000, P: 72)

Risk and return of common stock investment of commercial bank in Nepal concluded that most people see stock market investment as a black magic art, which they know little about it. Many people have unrealistically optimistic and pessimistic expectations about stock market investment or perhaps a fear of the unknown return. The author stated that the Nepalese stock market in the emerging state in the context of Nepalese economy. Its development in accelerating since the political change in 1990, which helps in openness and liberalization of national economy, but due to the lack of information and poor knowledge, Nepalese individual investor cannot analyze the securities and market properly. In addition, the author added, the proper analysis of individual securities, industry and overall market is always needed general knowledge about economic, shares should be hold when the market is rising and hold safer investment when it is falling (Upadhaya, 2001, MBA unpublished thesis )

Risk and return analysis of listed companies found that the average return on the common stock of selected companies and that of market is equal for 5% level of significance. The author has performed an analysis of risk and return on common stock investment of listed companies. From the analysis the beta of the shares of bank is most aggressive and that of trading companies is least aggressive or defensive. From the analysis, it was found that among selected companies the stock of trading company is overpriced and all others are under priced. It is better for the investors to purchase the under price shares. The expected return on trading sector is maximum and the risk of banking sector is minimum (Santyal, 2002, MBA Unpublished thesis)

An assessment of risk and return element concluded that it is mainly concentrated on the risk and return elements. The financial system in Nepal has undergone rapid changes have taken place in the country.

Number of listed companies in NEPSE has been increased substantially. So, investor's investment opportunity has also been increased. Among all the securities, common stock is known to be the most risky security Higher the risk higher will be the return However, the risk return characteristics do not seem to be the same for the entire share reviewed. The share with large seems to be able to produce higher rate of return. The portion of unsystematic risk is very high with shares having negative beta co-efficient. The risk per unit of return, as measured by the co-efficient of variance is less than that of market as a while for the individual shares (Bhatt, 2003, MBA unpublished thesis).

Risk and return analysis in common stock investment concluded that in Nepal major weakness on the increment of stock market efficiency is due to lack of skills, knowledge, resource and technology. Most of the investors are not seem to be aware of financial indicators in which they are going to invest their funds. Through secondary market NEPSE, the market price of common stock seems to be in accordance with the financial indicators. Instead, in determination of market price of share, there has been major influence or rumors rather than strengths other companies. Investing funds in different securities diversifies the risks, which needs to be understood by investors (Dahal, 2005, MBS, unpublished thesis).

The above discussed and analyzed thesis mainly deals with the financial companies, insurance company and hotels. Those studies have mainly focused on comparative study of risk and return with one sector to another sector (such as hotel comparing with the financial companies) but have not focused on comparative study of beta analysis of individual security and its portfolio within the finance company sector to choose the best alternative.

## CHAPTER-III

### RESEARCH METHODOLOGY

#### 3.1 Introduction:

Research methodology describe the method and process applied in the entire aspect of the study focus of data, data gathering, instruments and procedure data tabulating and process and method of analysis. It is away t systematically solve the research problem. Research methodology refers to the various sequential steps that are to be adopted by a researcher during the cause of studying a problem with certain objectives. It also refers to the approach of the research process from theoretical foundation to the collection and analysis of the data (Kothari, 1984,P:19).

#### 3.2 Research design:

The study aims analyzing bet analysis of the selected nine commercial banks. The research design used in this study is basically a combination of descriptive and analytical one. It is composed of both parts of technical aspects and logical aspects. It is based on financial statements and others information covers five fiscal years of commercial banks. Research design is the plan, structure and strategy of investigation conceived so ass to obtain answer to research question and to control variance (Kerlinger, 1963, P: 51).

#### 3.3 Population and sample:

The population of the study is the commercial banks of Nepal, which have been listed in the Nepal stock exchange company (NEPSE)

They are:

- (a) NABIL Bank Limited
- (b) Nepal Investment Bank Limited
- (c) Himalayan Bank Limited
- (d) Nepal SBI Bank Limited
- (e) Nepal Bangladesh Bank Limited

- (f) Everest Bank Limited
- (g) Bank of Katmandu Limited
- (h) NIC Bank Limited
- (i) Machhapuchhre Bank Limited
- (j) Laxmi bank Limited
- (k) Kumari Bank Limited
- (l) Lumbini Bank Limited
- (m) Nepal Credit and commerce Bank

From among the population the study selected seven listed commercial banks by using random sampling method, which is as follows: Himalayan Bank Limited, Standard chartered Bank Limited, Nepal Bangladesh Bank Limited, Nepal Everest Bank Limited, Nepal SBI Bank Limited, Nabil Bank Limited and Nepal Investment Bank Limited. As there are 13 commercial Banks listed in NEPSE, our sample size will be the 46.15% of the total population.

### **3.4 Source of study:**

The study will review the available secondary information of past consecutive five year's periods, which are listed as below:

- (a) Approved annual report of Banks
- (b) Magazine, Newspaper, Books and Documents.
- (c) Published Books, Journal related to commercial banks.
- (d) Government reports, Bulletin and other published statement of related field.
- (e) Previous studies made in this field.
- (f) Related websites.

### **3.5 Data analysis tools:**

Both financial and statistical tools will be used for analyzing the collected data.

#### **3.5.1 Financial tools:**

- Average rate of return
- Expected rate of return

- Beta co-efficient
- Portfolio risk
- Portfolio return

### 3.5.2 Statistical tools:

- Standard deviation
- Co-efficient of variance
- Correlation coefficient
- Hypothesis testing:

### Financial tools:

#### Average rate of return (ARR)

Average rate of return can be easily calculated using total sum of return divided by no of years. Symbolically, Average rate of return can be expressed as follows:

Average rate of return:

$$E(r_A) = \frac{\sum r_A}{n}$$

Where,

$\sum$  = sign of summation

N = No. of years hat the return is taken

$R_A$  = Return of stock

#### Ñ Single period rate of return of common stock

Single period rate of return is the purchase return during the investment period or holding period. It is also could hold period return. The holding period return is one of the techniques of measuring return. It is total gain or lost on and investment over given period of time. It is the combination of capital gain or lost plus cash contribution during the holding period. (Sherestha, *et al.*, P :\$\$) Single period return may be defined as the change in value plus any cash distributions expressed as a percentage of he beginning of period investment value. An investor can obtain two kinds of income from an investment in share of stock or a bond. They are as follows:

1. Income from price appreciation (or losses from price depreciation), sometimes called capital gains (or losses). This quantity denoted  $P_t - P_{t-1}$
2. Cash income from cash dividend or coupon interest payments, represented by the convention  $C_t$ .

Sum of these two sources of income (or loss) equals the total return and can be

Expressed in percentage as follows:-

$$\text{Single period rate of return } (r_t) = \frac{P_t - P_{t-1}}{P_{t-1}}$$

### Expected rate of return of common stock

Expected rate of return is the future return expected by the investors in a given investment. The weighted average of possible return with the weights being the probabilities of occurrence is called expected return. The expected rate of return can be estimated by analyzing the trend a return of previous period and by using probability distribution of return. The ex-post return can be average for calculating the future expected return and probability distribution could be used to forecast the future rate of return (Van Horne, 1997, P: 95).

This rate is obtained by arithmetic mean of the past year's return. This study also aims to find out the expected return on the investment in common stock. Symbolically, expected rate of return of common stock can be expressed as follows:

$$E(r_A) = \frac{\sum r_A}{n}$$

where as,  $\sum$  = sign of summation

$n$  = No. of years that the return is taken

$E(R_A)$  = expected rate of return on stock A

$$\begin{aligned} \text{(ii) Expected value } E(r) &= \sum_{t=1}^T r_t P_t \\ &= P_1 r_1 + P_2 r_2 + \dots + P_t r_t \end{aligned}$$

where as,

$r_t$  = the  $t$ th rate of return from a probability distribution

$P_t$  = the probability that the  $t$ th rate of return will take

## **Beta coefficient (b)**

The beta coefficient is an idea of systematic risk. It may be used for ranking the systematic risk of different assets. It is an index of the degree of movement of an asset's return in response to a change in the market return. An asset's historical returns are used in finding the asset's beta coefficient. Logically, the systematic risk is the co-variance between the return of an individual asset or portfolio and the return of the market portfolio. The measure of systematic risk is presented by beta. It is an index of systematic risk, which cannot be eliminated through the means of diversification. Beta measures the sensitivity of a stock's return on market portfolio (Shrestha and Manandhar, 1994, P: 103).

Market sensitivity of stock is explained in terms of beta coefficient. Higher the beta greater the sensitivity and reaction to the market movement. Market beta serves as a benchmark or a measuring scale for the evaluation of risk of individual stocks. For an individual stock, the beta could be less than 1, equal to 1 or more than 1 depending upon the volatility of that stock's return relative to market returns. Beta coefficient can be expressed as follows.

$$\text{Beta coefficient (bi)} = \frac{\text{cov}(r_i, r_m)}{\sigma_m^2}$$

Where as,

$\text{Cov}(r_i, r_m)$  = covariance of the return on assets  $i$  and market portfolio.

$\sigma_m^2$  = variance of the return on the market portfolio

$r_m$  = required rate of return on the market portfolio on assets of securities.



## Portfolio risk ( $\sigma_p$ )

Portfolio risk is the measure of combined standard deviation of stocks held in the portfolio, with reference to individual stocks corresponding correlation contribution. The expected risk on a portfolio is a function of the proportion invested in the components, the riskness of the components and correlation of returns on the components securities. It is measured by standard deviation and calculated by using this formula.

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B r_{AB} \sigma_A \sigma_B}$$

Where as,

$\sigma_p$  = Portfolio risk

$W_A$  = the proportion of the portfolio devoted by security A

$W_B$  = the proportion of the portfolio devoted by s

$\sigma_B$  = standard deviation of security ' B '

$\sigma_A$  = standard deviation of security 'A'

$r_{AB}$  = Correlation between the security A and B.

## Portfolio Return ( $r_p$ )

The expected return on a portfolio,  $E(r_p)$ , is simply the weighted average of the expected returns on the individual assets in the portfolio with the weight being the fraction of the total portfolio invested in each asset.

While the portfolio expected return is straight forward weighted average of returns on the individual securities, the portfolio standard deviation is not the weighted average of individual securities standard deviation. To make a weighted average of individual security standard deviation would be to ignore the relationship or correlation between the returns of the two securities. This correlation however has no effect on the portfolio expected returns. Correlation between securities return complicates our calculation of portfolio standard deviation by forcing us to calculate the co-variance between returns for every possible pair wise contribution of securities in the portfolio. But this task could

of mathematical complication contains a silver lining correlation between securities provides for the possibilities of eliminating some risk without reducing potential return (Goetzmann, 1994, P: 32).

$$E(rp) = \sum_{j=1}^n W_j \times R_j$$

In a two- security portfolio, the portfolio return will be:

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

Where as,

$E(rp)$  = expected return on portfolio

$W_i$  = The fraction of the total value of the portfolio invested in the  $i^{th}$  assets

$R_i$  = the expected rate of return from the  $i^{th}$  assets

$R_j$  = the expected rate of return from the  $j^{th}$  assets

## Statistical tools

### ) Standard deviation

Standard deviation is a statistical concept and widely used to measure risk from holding single assets. It is a statistical measure of the variability of distribution of return around its means. This is a measure of the dispersion of forecast returns when such return approximate normal probability distribution. The main advantage of standard deviation is that the uncertainties of the return can summarized into a single calculated number. On the other hand, the main disadvantage of standard deviation is that considers possible returns above the expected rate of value to be as risky as return below the expected value (Joshi, 2001, P:95).

It is derived so that a high standard deviation represents a large dispersion of return and is a high risk. It provides more information about the risk of the assets; it is major of the total risk of the assets. It is the square root of the variance and measures the systematic risk of stock investment. Symbolically, ( $\sigma$ ) can be expressed as follow:

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

Where as,

$\sigma_j$  = standard deviation of return on stock j

$R_j$  = rate of return of stock j

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

n = time period

Variance =  $\text{Var}(r_j) = \sigma_j^2$

### **Coefficient of variation (C.V)**

Coefficient of variation is an application to calculate the risk per unit to the expected return. It is the ration of standard deviation of returns to the mean of the distribution. It is the measurement it relative risk. The risk unit of expected return can be measurement of relative dispersion that is useful in comparing the risk of assets with differing expected return (Van Horne, 1995,P:53).

The higher the coefficient of variation the greater the risk which is expressed ad follows:-

Coefficient of variance (CV):-

$$CV_j = \frac{\sigma_j}{\bar{r}_j} \times 100\%$$

Whereas,

$CV_j$  = coefficient of variation of stock J.

$\sigma_j$  = standard deviation of return on stock J

$\bar{r}_j$  = Average rate of return of stock j

### **Correlation coefficient**

Correlation is defined the "Relationship" (or association) between one dependent variable (or factor) and one (or more than one) independent variable (s).in other works, correlation is the relationship between (or among) two or more variables (i.e. only one variable dependent and one or more variable (s) independent).

If the two (or more) variables are so related that the change in values(s) of one (or more) independent variable (s) results the change in the value of dependent variable they are said to have "correlation". The most important of method of measuring the correlation between the two variables is "Karl Pearson's coefficient of correlation. This is the mathematical method of measuring the degree of association between the two variables say x and y (Shrestha and Silwal, 2001,P.P:113-116). This can be expressed as follows:

$$r_{xy} = \frac{\text{COV}(r_x, r_y)}{\sigma_x \sigma_y}$$

Where as,  $\text{cov}(r_x, r_y)$  = covariance of x and y.

$$= \frac{\sum (X - \bar{X})(Y - \bar{Y})}{N}$$

$\sigma_x$  = standard deviation of X

$$\sigma_x = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

$\sigma_y$  = standard deviation of Y.

$$\sqrt{\frac{\sum (Y - \bar{Y})^2}{N}}$$

The value of the correlation of coefficient 'r' lies between -1 to +1.

If  $r = +1$ , there is a perfect positive relationship.

If  $r = -1$ , there is a perfect negative relationship.

If  $r = 0$ , there is no correlation at all.

## Ñ Analysis of variance (ANOVA)

When we have to test the significance of the difference between two sample means, t-test is suitable. But when we need to test the significance of the differences between more than two sample means, F-distribution is suitable technique, called the "Analysis of Variance". Using ANOVA technique we will be able to make inferences about whether our samples are drawn from populations having the same mean.

The assumptions made in ANOVA are:

- a) The population for each sample must be normally distributed with same mean and variances (in large sample this assumption is not necessary).
- b) All the samples must be randomly selected and independent.

### One way analysis of variance

The basic concept of ANOVA is to test whether the samples have same mean. One way analysis of variance is the one if we study the effect of only factor at as time and the hypothesis is to test the difference in average value due to the factor is insignificant.

The whole analysis of ANOVA is finally presented in the ANOVA table:

One-way ANOVA able

Source of variation	d.f.	Sum of squares	Mean sum of Squares $MSS=ss/df$	F-ratio
Between samples	K-1	SSB	$Msb=\frac{SSB}{K-1}$	$\frac{MSB}{MSW} = F_{cal}$
Within Sample	N-k	SSW	$MSW=\frac{SSW}{N-K}$	
Total	N-1	TSS		

To make decision if the computed value of F is less than its calculated Value  $H_0$  accepted otherwise  $H_0$  is rejected.

### 3.6 LIMITATION OF THE METHODOLOGY

Every problem can be solved by various ways. Research methodology is the systematic way to solve the research problem. In the way to solve the problem, there may be some limitation of the methodology used, are described below.

- ) This study based on the historical data and forecast the future, i.e. the research design for this study is historical. Past may be the genesis for the future but the past may not be happen in future in same manner.

- ) The population is only 14 commercial banks, which listed in NEPSE, and the total no of samples is only 9 commercial banks, therefore the samples do not cover the industry completely.
- ) The sources of data have been secondary and mainly collected from related bank. Web sited of NEPSE so, accuracy of methodology based on the secondary data.
- ) The data analysis tools have used in statistical and financial concepts. The value provided by such tools may be the approximate value only.

## **CHAPTEd-IV**

### **DATA PRESENTATION AND ANALYSIS**

The main purpose of analyzing the data is to change its form from an unprocessed to processed and understandable. The analyzing of data consists of organizing, tabulating and performing statistical analysis (Wolf and Pant, 2000, P; 117). Data presentation and analysis is the main part of the study. This includes analysis of the collected data and their interpretation. Detail data of market price per share (mps) and dividend of each Bank and NEPSE index of each sector is presented and their interpretation and analysis is done, with reference to various readings and literature review in the proceeding chapters' effort in made to analyze and diagnose the recent Nepalese stock market changes with special references to commercial banks. Different tables and diagrams are drawn to make the result easier clear and understandable.

#### **4.1 Analyze of individual commercial Banks**

Common stock of each listed commercial banks are individually analyze here. Among seventeen commercial banks operating in Nepal, only 16 of them are listed in NEPSE. Among those only nine commercial banks are taken as a sample for the study here.

##### **4.1.1 Standard chartered Bank Ltd. (SCBNL)**

###### **4.1.1.1 Introduction**

Standard chartered Bank Nepal Ltd. has been established in 1978. it is a joint venture bank. This bank was listed in NEPSE in 1988 (03/31/045) and now completed its 156 years operation in 2009. This was considered a unique opportunity of refresh the brand. The refreshed brand is not Only a change in the logo, colors etc, but also it has a brand essence "the right partner" and the brand campaign "I believe" attached to it. The aim is to be the right partner of choice, as a provider of exc4ellent products and services and be an active member in the communities where the bank operation and as an employer to its people with the refreshed brand five values have been launched for the bank courageous,

responsive, international creative and trustworthy. These values are the heart and soul of brand.

The bank registered in Nepal with 50% of the share hold by standard chartered grind lays bank 33% by Nepal Bank limited and 17% by the Nepalese public. It is the world's leading emerging market's bank with more than 500 officers over 50 countries primary in Asia, the sub-continent, Middle east, Africa, Lain Africa and Latin America.

The authorized capital of this bank is Rs.339, 548,800. Issued capital 259,400,000 and paid up capital is Rs.240, 500,000. Par value per share is Rs.100 and total number of shareholder are SCBL, focuses mainly on two aspects: the first one is co-operating to a wide range of customers from individual to multinational and the next one is large public sector companies as well as emphasis on aid agencies, airlines, hotels and governments corporations. The bank has been the pioneer in introducing ' customer focused' products and services in the country.

#### **4.1.1.2 Annual market price and dividend distribution of Common Stock of SCBNL**

**Table no. 4.1**

#### **Annual market price and dividend distribution of common stock of SCBNL**

Fiscal year	High mps	Low mps	Closing mps	DPS	Stock dividend	Total dividend
2003/04	3111	1860	2144	100	-	100
2004/05	2100	1000	1550	100	-	100
2005/06	1760	1380	1640	110	10%	284.50
2006/07	1800	1520	1745	110	-	110
2007/08	2350	1550	2325	120	-	120
2008/09	2400	1500	2400	120	-	120

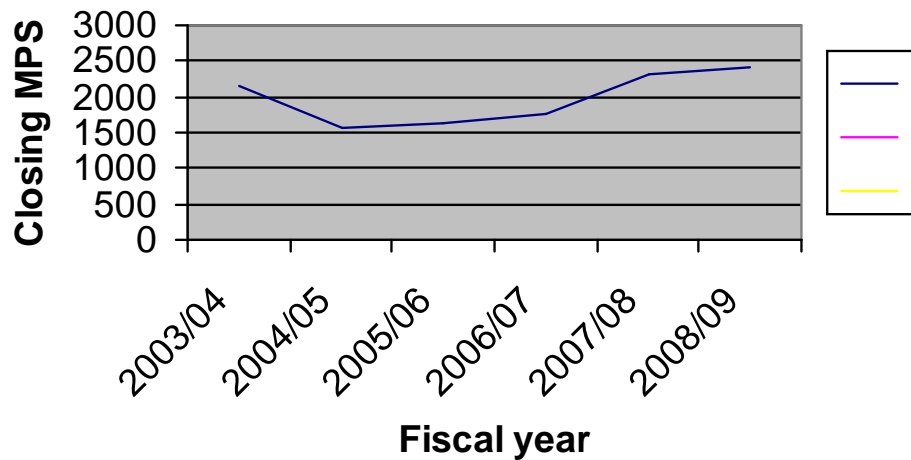
Date Sources: [www.nepalstock.com](http://www.nepalstock.com)



Total Dividend amount = cash dividend + stock dividend% \* next year mps.

The above table shows the high market price, low market price, and closing market price, dividend per share, stock dividend and total dividend of SCBNL from fiscal year 2003/04 to 2008/09. The market price of share seems slightly low in fiscal year 2003/04 to 2007/08 comparing with 2008/09. Market price is lowest in fiscal year 2004/05 i.e. Rs.1550 then price slightly increased and reached to highest level i.e. Rs.2400 in fiscal year 2008/09. We found that the market price and dividend distribution of SCBNL is positive and satisfactory. The annual movement is shown in figure 4.1.

**Figure no.4.1**  
**Market price of common stock of**  
**SCBNL**



The above figure shows that the price has decreasing trend from 2003/04 to 2004/05 and it slightly increasing from fiscal year 2004/05. The price is highest in fiscal year 2008/09 and lowest in fiscal year 2004/05 i.e. Rs2400 and Rs1550 respectively.

### 4.1.1.3 Realized rate of return, expected rate of return, standard deviation of return and co-efficient of variation of common stock of SCBNL

Year end price and dividend amounts are used to calculate realized rate of return of each year. Table 4.2 shows the calculation of year realized return expected return and standard deviation of return. Expected return of common stock of SCBNL is in 7<sup>th</sup> highest position i.e. 12.59% as comparison with other commercial banks. Standard deviation is in 6<sup>th</sup> highest position i.e. 0.2373 and co-efficient of variation is in 5<sup>th</sup> position i.e. 1.8846 as comparison with other commercial banks.

**Table 4.2**  
**Realized rate of returns, expected rate of returns and SD of the CV of Common stock of SCBNL**

Year	Market price	Dividend	$R = \frac{P_{t+1} + D_{t+1} - P_t}{P_t}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2003/04	2144	-	-	-	-
2004/05	1550	100	-0.2304	-0.3563	0.1270
2005/06	1640	284.50	0.2416	0.1157	0.0134
2006/07	1745	110	0.1311	0.0052	0.000027
2007/08	2345	120	0.4126	0.2867	0.0822
2008/09	2400	120	0.0746	-0.0513	0.0026
Total			$R = 0.6295$		$(R - \bar{R})^2 = 0.02252$

Source: calculated from Table 4.1

We have,

$$\text{Expected return } (\bar{R}) = \frac{R}{n} = \frac{0.6295}{5} = 0.1259$$

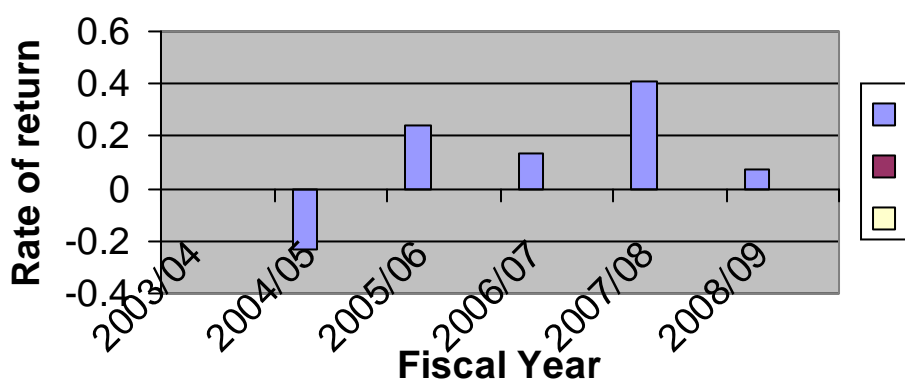
$$\text{Standard deviation } \dagger X \sqrt{\frac{(R - \bar{R})^2}{n - 1}} = X \sqrt{\frac{0.02252}{5 - 1}} = X 0.2373$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\sigma}{R} = \frac{0.2373}{0.1259} = 1.8846$$

The above table shows the expected return, standard deviation, co-efficient of variance and realized returns of common stock of SCBNL. It reveals that expected return is 12.59%, standard deviation is 0.2373 an co-efficient of variation is 1.8846 respectively the standard deviation is 0.2373 where as its C.V. is a 1.8846, which means that far earning 1 extra unit of return from the shares of SCBNL, investors have to bear 1.8846 unit of risk. It would prove to be the investment having aggressive return with aggressive risk.

**Figure 4.2**

### Realized rate of return of the common stock of SCBNL



The above figure shows the rate of return of the share of standard chartered Bank. It is maximum in fiscal year 2007/08 i.e. 0.4126 and minimum is fiscal year 2008/09 i.e. 0.1311. It has negative return in fiscal year 2004/05 i.e. -0.2304.

## 4.1.2 Himalayan Bank Limited (HBL)

### 4.1.2.1 Introduction

Himalayan Bank Ltd was established in 1992 as a joint venture bank under the company act 1964. This Bank has proved as successful bank in Nepal HABIL bank Ltd of Pakistan is joint venture partner of HBL.HBL is the first joint venture bank managed by Nepalese chief executive. The operation of this bank started

from 1993 February. The bank was listed in NEPSE in 1993 A.D. (asar 21.2050 B.S.). The main objective of the bank is to provide modern banking facilities like Tele-banking to the business, industrialists and other professionals to provide loans on agriculture, commerce and industrial sector. It has 15 branches around the country. The bank authorized capital, issued capital and paid up capital is Rs10,000,000,000, Rs.650,000,080 and Rs.536,250,000 or respectively numbers of shareholders of this bank are 7210. Par value per share is Rs100 market capitalization of this bank is Rs.8494200000 on 16 July 2009.

#### 4.1.2.2 Annual market price and dividend distribution of HBL

**Table 4.3**

##### **Market price and dividend distribution of HBL**

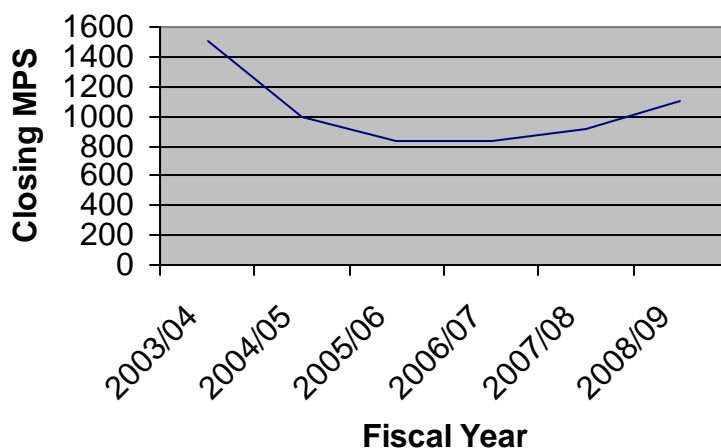
Fiscal year	High mps	Low mps	Closing mps	DPS	Stock dividend	Total Dividend
2003/04	2726	1325	1500	27.5	25%	277.50
2004/05	1530	610	1000	25	30%	275.80
2005/06	950	750	830	1.31	10%	85.31
2006/07	1010	600	840	20	-	20
2007/08	1000	855	920	20	-	20
2008/09	1180	960	1100	10	-	10

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

The above table shows the high market price, low market price, and closing market price, dividend per share, stock dividend and total dividend of HBL from fiscal year 2003/04 to fiscal year 2008/09. The share price is increased and reached to highest level i.e. Rs1500 in starting fiscal year 2003/04. it seems slightly low in fiscal year 2004/05. After then, price, decreased and has reached to lowest level i.e. Rs830 in fiscal year 2005/06 in year 2008/09 it again increased and reached up to Rs.1100. However, we found that the market price and dividend distribution of HBL is positive. The Annual movement is shown in figure 4.3.

**Figure 4.3**

**Market price movement of  
common stock of HBL**



Data source: Calculated from table 4.3

The above figure shows that the price has decreasing trend from fiscal year 2003/04 to 2005/06. The price is highest in the fiscal yrs 2003/04 and lowest in fiscal year 2005/06 is Rs.1500 and Rs.830 respectively.

**4.1.2.3 Realized rate of return, expected rate of return, SD of return and CV of common stock of HBL**

Year-end price and dividend amounts are used to calculate realize rate of return of each year. Table 4.3 shows the calculation of yearly realized return expected return and standard deviation of return. Expected return on common stock of HBL is in 2<sup>nd</sup> highest position i.e. 25.08% in comparison with other commercial banks. Standard deviation is in 7<sup>th</sup> position i.e. 0.1441 and co-efficient of variation is in 6<sup>th</sup> highest position i.e. 1.149 as comparison with other commercial banks.

**Table 4.4**

**Realized rate of return, expected rate of return, SD of return and CV of common stock of HBL**

Fiscal year	Market price	Dividend	$R = \frac{P_{t+1} - P_t + D_{t+1}}{P_t}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2003/04	1500	-	-	-	-
2004/05	1000	275.80	-0.15	-0.175	0.0306
2005/06	830	85.31	-0.079	-0.1037	0.01076
2006/07	840	20	0.0289	0.0037	0.00001339
2007/08	920	20	0.1190	0.094	0.00883
2008//09	1100	10	0.2065	0.18	0.0329
Total	$\bar{R} = 0.1254$			$(R - \bar{R})^2 = 0.0831$	

Source: calculated from table 4.3

We have,

$$\text{Expected return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.1254}{5} = 0.02508$$

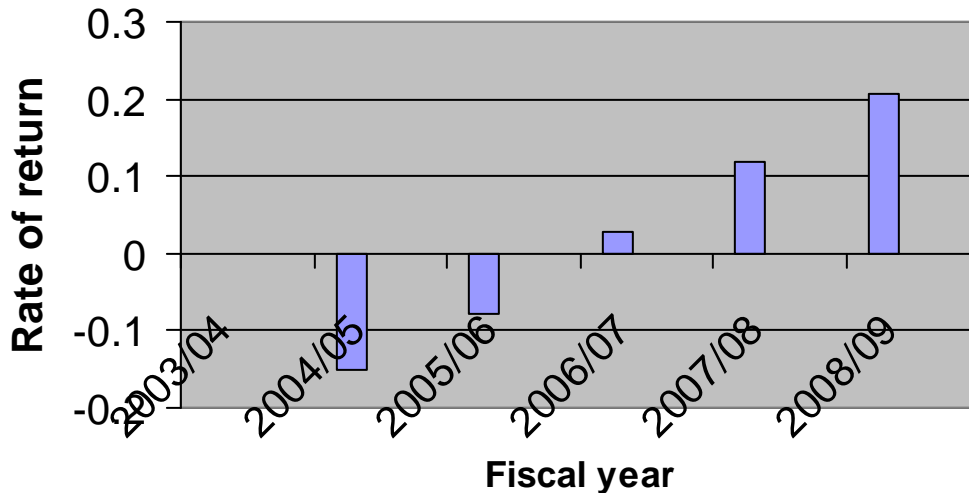
$$\text{Standard deviation } = \sqrt{\frac{\sum (R - \bar{R})^2}{n}} = \sqrt{\frac{0.0831}{5}} = 0.1441$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard deviation}}{\bar{R}} = \frac{0.1441}{0.1254} = 1.149$$

The above table shows the expected return, standard deviation, co-efficient of variance and realized returns of common stock of HBL. It reveals that there is high risk and hence return of HBL is also high. The total realized return and expected return of HBL is 0.1254 and 0.02508 respectively the standard deviation is 0.02078 where as it's CV is 1.149, which means that for earning 1 extra unit of return from the share of HBL, investors have to bear 1.149 unit of risk. It would prove to be the investment having aggressive return with aggressive risk.

**Figure 4.4**

**Realize rate of return of common stock of HBL**



Source: Calculated from Table 4.4

The above figure shows the rate of return of the share of Himalayan Bank. it is maximum in fiscal year 2008/09 i.e. 0.2065 and it is minimum in fiscal year 2006/07 and it has negative return in fiscal year 2004/05 and in fiscal year 2005/06 i.e. -0.15 and -0.079 respectively.

### **4.1.3 Nepal Arab Bank Limited (NABIL)**

#### **4.1.3.1 Introduction:**

Nepal Arab Bank Ltd is the first Joint venture commercial incorporated on July 1984 A.D. (2041 B.S.) in Nepal and listed in NEPSE in the year 1986 A.D. (08/09/042 B.S.) initially Dubai Bank Ltd (DBL) invested 50% equity share on NABIL. The share owned by EBL was transferred to Emirates bank international limited (EBIL) Dubai. Later on EBIL sold its entire 50% of equity share of NABIL other investors are Nepalese public 30% Nepal industrial Development Corporation 10% Rastriya Beema Sansthan 9.67%.

Nepal Stock Exchange limited 0.33% Success of NABIL bank is a milestone in the banking history of Nepal as it proved the way for the establishment of many commercial banks and financial institutions. Par value per

share of Nabil is Rs.100 and market capitalization is Rs.10, 998,288,000 at July 16, 2009.

#### 4.1.3.2 Annual market price and dividend distribution of NABIL

**Table: 4.5**

##### **Market price and dividend distribution of NABIL**

Fiscal year	High mps	Low mps	Closing mps	DPS	Stock dividend	Total Dividend
2003/04	1500	465	735	30	-	30
2004/05	875	700	735	50	-	50
2005/06	1005	705	1000	65	-	65
2006/07	1515	1000	1505	70	-	70
2007/08	1495	700	1400	65	-	65
2008/09	1550	925	1500	75	-	75

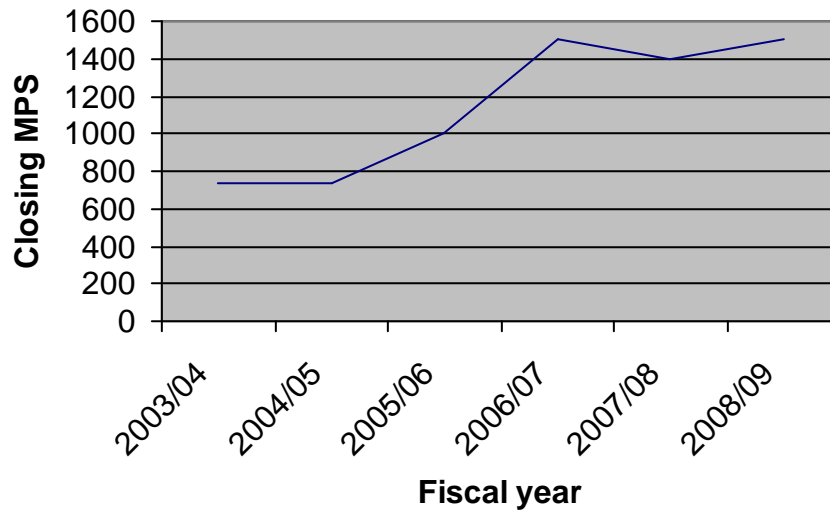
Source: [www.nepalstock.com](http://www.nepalstock.com)

The above table shows the high market price, low market price, closing market price, DPS, dividend and total dividend of NABIL stock from the fiscal year 2003/04 to 2008/09. The table shows that 2003/04 closing mps is Rs.735 which remains the same in next fiscal year 2004/05. In 2005/06 the mps is slightly increase to Rs.1000. In fiscal year 2007/08 it decreases to Rs.1400. In 2008/09 mps is again slightly increases and reached to highest level i.e. Rs1500. We found that the market price and dividend distribution on NABIL is positive in all fiscal year. The price movement of Nepal Arab Bank Ltd. (NABIL) is shown in the figure 4.5.



**Figure 4.5**

**Market price movement of common stock on NABIL**



Source: calculated from table 4.5

The above figure shows that the price has remain the same in fiscal year 2003/04 and fiscal year 2004/05. The price is increased and reached to highest level in fiscal year in 2006/07 i.e. Rs.1505. the lowest price is Rs.735 in starting fiscal year 2003/04, which remains the same in next fiscal year 2004/05.

**4.1.3.3. Realized returns, expected rate of return, standard deviation of return and co-efficient of variation of common stock of NABIL**

Year end price and dividend amounts are used to calculate realized rate return table 4.6 shows the calculation of annual realized return expected return and standard deviation of return. Expected return of common stock on NABIL is in 3<sup>rd</sup> highest position i.e.23.8% in comparison with other commercial banks. Standard deviation is in 5<sup>th</sup> highest position i.e. 0.26 and co-efficient of variation is in 7<sup>th</sup> highest position i.e. 1.09 as comparison with other commercial banks.

**Table 4.6**

**Realized rate of return, expected rate of returns standard deviation and co-efficient of variation of common stock Of NABIL**

Fiscal year	Mps	Dividend	$R = \frac{(P_{t+1} - P_t) + D_{t+1}}{P_t}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2003/04	735	30	-	-	-
2004/05	735	50	0.068	-0.170	0.029
2005/06	1000	65	0.449	0.211	0.045
2006/07	1505	70	0.575	0.337	0.114
2007/08	1400	65	-0.027	-0.265	0.070
2008/09	1500	75	0.125	-0.113	0.013
Total			$R = 1.190$		$(R - \bar{R})^2 = 0.271$

Source: calculated from table 4.5

We have,

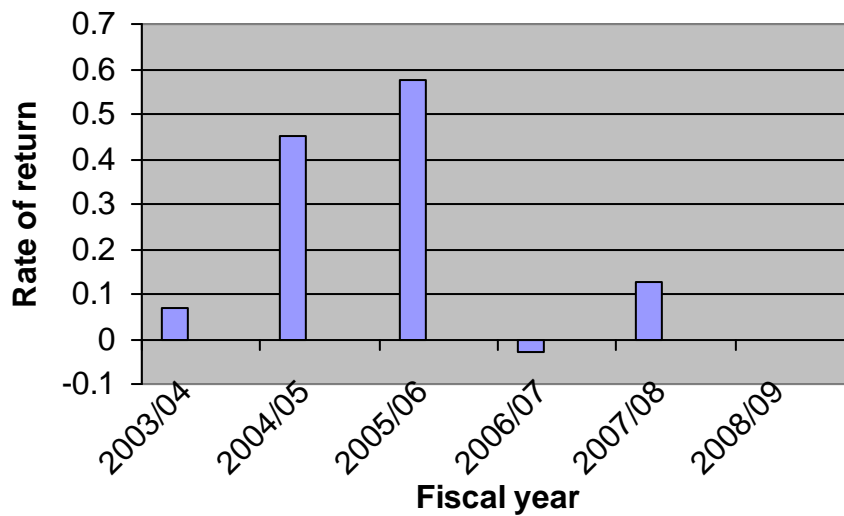
$$\text{Expected returns } (\bar{R}) = \frac{R}{n} = \frac{1.190}{5} = 0.238$$

$$\text{Standard deviation } \uparrow X \sqrt{\frac{(R - \bar{R})^2}{n}} = \sqrt{\frac{0.271}{5}} = 0.26$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard deviation}}{\bar{R}} = \frac{0.26}{0.238} = 1.0924$$

The above table shows that the expected return, standard deviation, co-efficient of variation and realized return of common stock of NABIL .it reveals that expected return is 23.8%, standard deviation is 0.26. Co-efficient or variation is 1.09 respectively. The standard deviation is 0.26 where as its CV is 1.09, which means that the earning 1 extra unit of return from the share of NABIL, investors has to bear 1.09 unit of risk. It would prove to be the investment having aggressive return with aggressive risk.

**Figure 4.6**  
**Realized rate of the common stock on NABIL**



Source: calculated from table 4.6

The above figure shows the rate of return of the share of NABIL bank. It is maximum in the fiscal year 2006/07 and minimum in the fiscal year 2004/05. It is negative in fiscal year 2007/08 i.e. -0.027.

#### **4.1.4 Nepal SBI Bank Ltd**

##### **4.1.4.1 Introduction:**

Nepal SBI bank Ltd is another joint venture bank which was established in 1993, under the company act 1964. it is a foreign joint venture bank and the foreign partner state bank of India (holding the 50% of equity share of SBI) is managed the bank under joint venture and technical services agreement signed between it and Nepalese promoter as mentioned in the NEPSE annual report, the main objective of bank is to carry out modern banking business in the country under commercial Bank act 1974. The bank is one of the largest shareholder based company and listing date of SBI at NEPSE is Magh 21, 2051 B. S. (1995A.D.).

The bank authorized capital is Rs.1000,000,000, issued capital is Rs.500,000,000 and paid up capital is Rs.426,875,900 respectively par value per share is Rs100 and number of shareholder are 20,589 market capitalization of this bank is 3,964,555,584 at 16,July 2009.

#### 4.1.4.2 Market price and dividend distribution of SBI

**Table 4.7**

**Annual market price and dividend distribution of SBI**

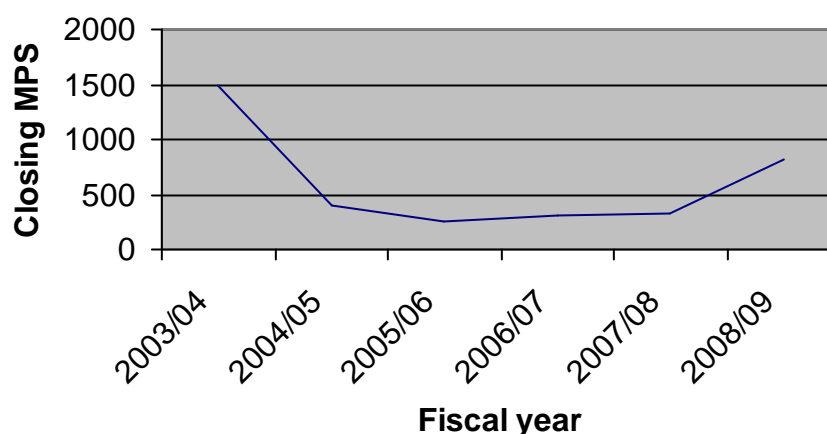
Fiscal year	High MPS	Low MPS	Closing MPS	DPS	Stock dividend	Total dividend
2003/04	2699	1150	1500	0	100%	401
2004/05	1600	300	401	0	-	0
2005/06	410	255	255	8	-	8
2006/07	307	231	307	0	-	0
2007/08	480	315	335	0	-	0
2008/09	815	800	815	0	-	0

Source: [www.nepalstok.com](http://www.nepalstok.com)

Total dividend = cash dividend + % of stock div × next years mps

The above table shows the high market price, low market price, closing market price, dividend and total dividend of Nepal SBI Bank Ltd. Stock from the fiscal year 2003/04 to 2008/09. The share price in the starting fiscal year is highest level i.e. Rs.1500. In the fiscal year 2004/05 it seems in decreasing trends. Mps in fiscal year 2005/06 seems lowest level i.e. Rs.255. From fiscal year 2006/07 it slightly increased and it reaches to Rs.815 in the fiscal year 2008/09. We found market price and dividend distribution of SBI is positive and in increasing trend. Annual movement of C.S. of Nepal SBI Bank Ltd is shown in figure 4.7.

**Figure 4.7**  
**Market price movement of Common Stock of SBI**



The above figure shows that the mps in starting fiscal years 2003/04 is highest and lowest is in fiscal year 2005/06 i.e.:Rs.1500 and Rs255 respectively. Mps in the fiscal year 2004/05 and in fiscal year 2005/06 is in decreasing trend and mps from the fiscal year 2006/07 is in slightly increasing trend.

#### 4.1.4.3 Realized return, expected rate of return, standard deviation of return and co-efficient of variation of common stock of SBI.

Year-end price and dividend amounts are used to calculate realized rate of return of each year. Table no.4.8 shows the calculation of yearly realized return, expected return, standard deviation of return. Expected return on common stock of SBI is in 3<sup>rd</sup> highest position i.e. 13.02% as comparison with other commercial banks. Standard deviation is in also 3<sup>rd</sup> highest position i.e. 0.8177 and co-efficient of variation is in 2<sup>nd</sup> highest position i.e. 6.28 as comparison with other commercial banks.

**Table 4.8**

#### Realized rate of return, expected rate of return, SD of return and CV of common stock of Nepal SBI Bank Ltd

Fiscal year	Closing mps	Dividend	$R = \frac{P_{t+1} - p + Dt + 1}{P_t}$	$R - \bar{R}$	$(R - \bar{R})^2$
2001/02	1500	-	-	-	-
2002/03	401	0	-0.7327	-0.863	0.7447
2003/0	255	8	-0.3441	-0.474	0.2247
2004/05	307	0	0.2039	0.074	0.0055
2005/06	335	0	0.0912	-0.04	0.0016
2006/07	815	0	1.4328	1.303	1.6978
Total			$R = 0.6511$		$(R - \bar{R})^2 = 2.6743$

Source: Calculated from table 4.7

We have,

$$\text{Expected return } (\bar{R}) = \frac{R = 0.6511}{n = 5} = 0.1302$$

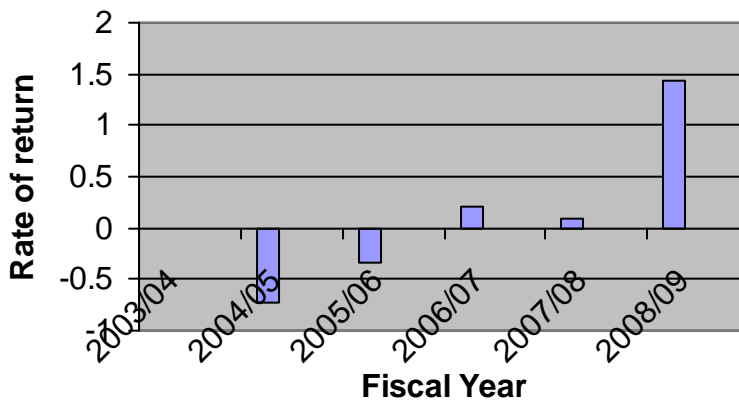
$$\text{Standard deviation } \uparrow X \sqrt{\frac{(R - \bar{R})^2}{n - 1}} X \sqrt{\frac{2.6743}{5 - 1}} X 0.8177$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\sigma}{\bar{R}} = \frac{0.8177}{0.1302} = 6.28$$

The above table shows that the expected return standard deviation, co-efficient of variation and realized returns of common stock of SBI. It reveals that expected return is 13.02 %, standard deviation is 0.8177 and co-efficient of variation is 6.28 respectively the standard deviation is 0.8177 where, as its C.V. is 6.28. This means that, the earning 1 extra unit of return from the share of SBI, investors have to bear 6.28 unit of risk. It would prove to be the investment having aggressive return with aggressive risk.

**Figure:4.8**

**Annual rate of return of common stock of SBI**



Source: Calculated from table 4.8

The above figure shows the rate of return of the share of SBI Bank. It is maximum in the fiscal year 2008/09 and minimum in the fiscal year 2007/08. It has negative return in the fiscal year 2004/05 and in fiscal year 2005/06 i.e.- 0.7327 and -0.3441 respectively.

## 4.1.5 Everest Bank Ltd

### 4.1.4.1 Introduction:

Everest Bank Ltd has been established in 1992 under the company Act, 1964 with the objective of extending professionalized banking services to various sectors of societies in the kingdom on Nepal and there by contributes in the economic development of the country. It listed in NEPSE is in chaitra 25, 2052 B.S. (1995 A.D.). EBL is joint venture with Punjab National Bank (PNB), one of the largest commercial bank of India having more than 200 foreign correspondents around the grab, PNB has a century old tradition of successful banking and it will lay down modern banking system and procedures. PNB is providing the top management service of EBL under the technical services agreement signed between the two institutions. Thus, EBL has advantage of the banking expertise and financial strength of its partners.

Panjab bank Ltd. India holds 20% equity on the bank share capital. Nepali promoter holds 50% and public hold 30%. It has branches around the country and member of employee is more than 200. its authorized capital is Rs750,000,000, issued capital is Rs466,800,000 and paid up capital is Rs.455,000,000 respectively. Its par value per share is Rs.100 and no. of shareholders are 24,255 market capitalization of this bank is 5,212,620,000 on July 16, 2009.

### 4.1.5.2 Annual market price and dividend distribution of EBL

**Table 4.9**

#### **Annual market price and dividend distribution of EBL**

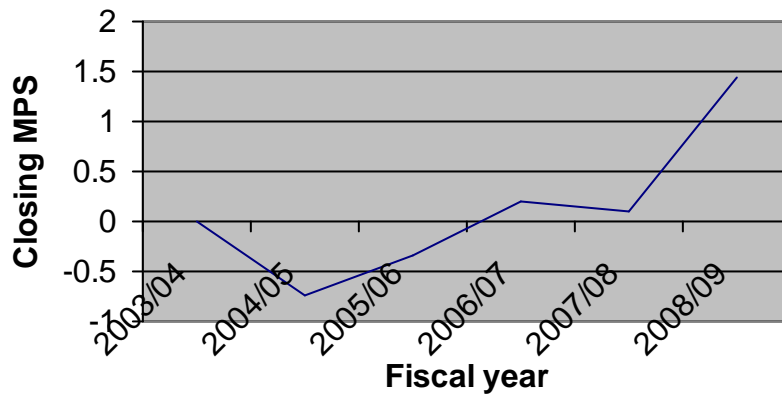
Fiscal year	High mps	Low mps	Closing mps	dividend	Stock dividend	Total dividend
2003/04	1850	670	750	-	100%	430
2004/05	740	325	430	-	-	-
2005/06	490	349	445	20	22%	169.6
2006/07	723	400	680	20	-	20
2007/08	905	625	870	20	-	20
2008/09	1860	1800	1660	20	-	20

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

The above table shows the high mps, low mps, closing mps, dividend and total dividend of Everest Bank Ltd. From fiscal year 2003/04 to 2008/09. The mps in the starting fiscal year is Rs750. in the fiscal year 2004/05 it decreases and reaches at lowest level i.e. Rs430. Mps seems in increasing trend from the fiscal year 2005/06, And it reached at highest level i.e., Rs1660 in the fiscal year 2008/09. We found that the market price and dividend distribution of EBL is in increasing trend it is positive. Annual movement of C.S. of EBL is shown in below figure.

**Figure 4.9**

**Market price movement of common stock of EBL**



Source: calculated from table 4.9

The above figure shows the price movement of common stock of EBL. The mps in starting fiscal year is Rs750. in fiscal year 2004/05 mps has decreased and reached at lowest level i.e.; Rs.430. From the fiscal year 2005/06 mps has started slightly increased and it seems at highest level i.e.; Rs.1660 in fiscal year 2008/09.

**4.1.5.3 Realized rate of return, expected rate of return, SD of return and CV of common stock of Everest Bank Ltd**

Year end price and dividend amount are used to calculate realized rate of return of each year. Table no 4.10 shows the calculation of yearly realized returns, expected return, standard deviation or return. Expected return n common stock of EBL bank is in 1<sup>st</sup> highest position i.e. 36.31 as comparison with other commercial banks. Standard deviation is in also 1<sup>st</sup> highest position i.e. 1.70 and



co-efficient of variation is in 4<sup>th</sup> highest position i.e. 4.682 as comparison with other commercial banks.

**Table 4.10**

**Realized rate of return, expected rate of return, SD of return and CV of common stock of Everest Bank Ltd.**

Fiscal year	Closing mps	Dividend	$R = \frac{(P_{t+1} - P_t) + D_{t+1}}{P_t}$	$R - \bar{R}$	$(R - \bar{R})^2$
2003/04	750	-	-	-	-
2004/05	430	-	-0.4267	-0.7898	0.623784
2005/06	445	169.6	0.4293	0.0662	0.004382
2006/07	680	20	0.5730	0.2099	0.044058
2007/08	870	20	0.3088	-0.0543	0.002948
2008/09	1660	20	0.9310	0.5679	0.32251
Total			$R = 1.8154$		$(R - \bar{R})^2 = 0.997683$

Source: calculated from table 4.9

We have,

$$\text{Expected return } (\bar{R}) = \frac{\sum R}{n} = \frac{1.8154}{5} = 0.3631$$

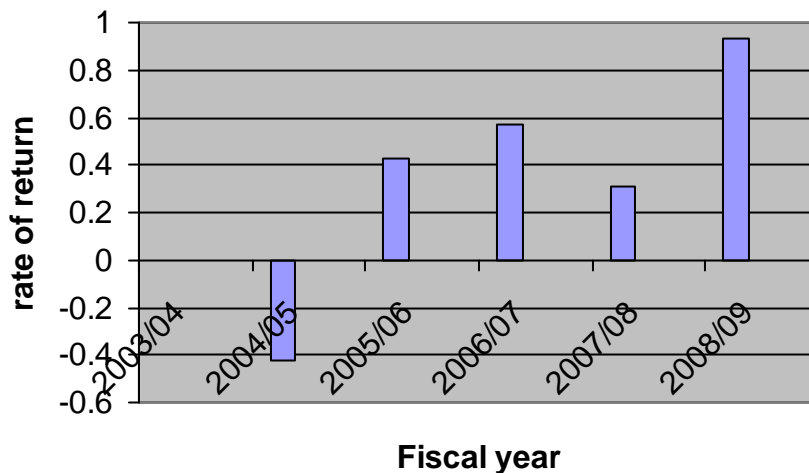
$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n}} = \sqrt{\frac{0.9977}{5}} = 0.4994$$

$$\text{Co-efficient of variation (C.V)} = \frac{\sigma}{\bar{R}} = \frac{0.4994}{0.3631} = 1.3754$$

The above table shows that the expected return, standard deviation, co-efficient of variation and realized return of common stock of EBL. It reveals that expected return is 36.31%, standard deviation is 0.4994, and co-efficient of variation is 1.3754 respectively. The standard deviation is 0.4994. Whereas it's C.V is 1.3754 which means that the earning 1 extra unit of return from the share

of EBL, investors have to bear 1.3754 unit of risk. It would prove to be investment having aggressive return with aggressive risk.

**Figure 4.10**  
**Annual rate of return of common stock of EBL**



Source: calculated from table 4.10

The above figure shows the rate of return of the share of EBL bank. It is maximum in the fiscal year 2008/09 and minimum in the fiscal year 2007/08 i.e. 0.9310 and 0.3088 respectively. It has negative return in fiscal year 2004/05 i.e. - 0.4267.

#### **4.1.6. Nepal Bangladesh Bank Ltd. (NBBL)**

##### **4.1.6.1 Introduction:**

Nepal Bangladesh Bank Ltd is joint venture bank with IFIC bank Ltd. Of Bangladesh, was established in 1994 A.D. under the company Act 1964. The main objective of the bank is to carry out commercial banking activities under the commercial bank Act 1974.

Its authorized capital is Rs480, 000,000, issued capital is Rs.240, 000,000 and paid up capital is Rs.231, 630,000. Par value per share is Rs100 and no. of shareholders is 24,598. Listing date of NBBL on stock exchange NEPSE in 1995 A.D. the central office of the bank is in Bijuli Bazaar, Kathmandu.

#### 4.1.6.2 Annual market price and dividend distribution of NBBL

**Table 4.11**

#### Annual market price and dividend distribution on NBBL

Fiscal year	High mps	Low mps	Closing mps	Dividend	Stock dividend	Total dividend
2003/04	682	251	616	15.47	-	15.47
2004/05	1505	800	1505	-	1.1	*1100
2005/06	3430	950	1100	5.40	-	5.40
2006/07	3500	1100	1150	6.17	-	6.17
2007/08	3000	1250	1200	8.20	-	8.20
2008/09	3050	1000	1050	-	-	-

Data Source: www.nepalstock.com

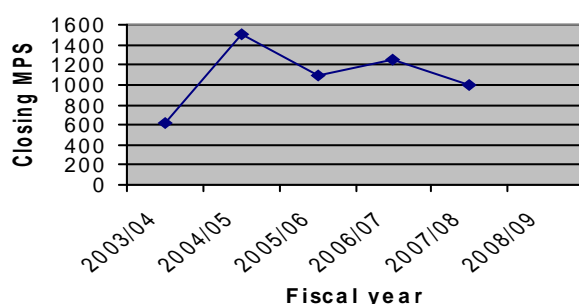
The model for the calculation of total dividend is shown in research methodology section

$$* 0 + 1 \times 1100 = 1100$$

The above table shows that the high mps, low mps, closing mps, dividend and total dividend of the common stock of NBBL. In the starting fiscal year, closing mps is at lowest level i.e.; Rs616. in the fiscal year 2004/05 the mps is at highest level i.e.; Rs1505. Mps in the fiscal year 2005/06 is decreased. It again slightly increased in fiscal years 2006/07. In fiscal year 2007/08 mps increased up to Rs1200 and it decreased in fiscal year 2008/09 and reached to Rs1050. from the above table we found that the market price and dividend distribution of NBBL is in both increasing and decreasing trend. However we found positive. Annual movement of CS of NBBL is shown in figure 5.1.

**Table 4.11**

#### Annual market price movement of common stock of NBBL



Source: calculated from table 4.11

The above figure shows the price movement of common stock of NBBL. In fiscal year 2003/04 mps is Rs.616 which is highly increased in next year 2004/05. From fiscal year 2005/06 mps is both increasing and decreasing trend. The highest mps in Rs1505 in fiscal year 2004/05 and lowest mps is Rs616 in fiscal year 2003/04.

#### 4.1.6.3. Realized rate of return, expected rate of return, standard deviation of return and co-efficient of variation of common stock of NBBL.

Year end price and dividend are used to calculate dividend yield and capital gain yield is to find out annual return of each year table no 5.2 shows the calculation of yearly realized rate of return and standard deviation of return. The expected return on common stock of NBBL is in 4<sup>th</sup> highest position i.e. 23.9% as comparison with other commercial bank. Standard deviation is in 2<sup>nd</sup> highest position i.e. 5.3797 and co-efficient of variation is in 3<sup>rd</sup> highest position as comparison with other commercial banks.

**Table 4.12**

#### Realized rate of return, expected Rate of return, SD of return and CV of common stock of NBBL

Fiscal year	Market price	Dividend	$R = \frac{(P_{t+1} - p_t) + D_{t+1}}{p_t}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2003/04	616	-	-	-	-
2004/05	1505	-	1.4432	1.2123	1.469671
2005/06	1100	5.40	-0.2655	-0.4964	0.246413
2006/07	1150	6.17	0.0511	-0.1798	0.032328
2007/08	1200	8.20	0.0506	-0.1803	0.032508
2008/09	1050	-	-0.1250	-0.3559	0.126665
Total			$R = 1.1544$		$(R - \bar{R})^2 = 1.907585$

Source: calculated from table 4.11

We have,

$$\text{Expected Return } (\bar{R}) = \frac{R}{n} = \frac{1.1544}{5} = 0.2309$$

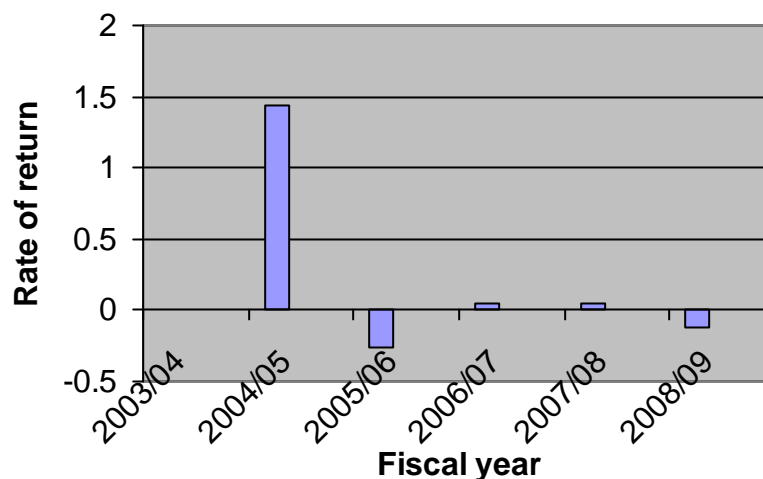
$$\text{Standard deviation} = \sqrt{\frac{(R - \bar{R})^2}{n}} = \sqrt{\frac{1.9076}{5}} = 0.6906$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard deviation}}{\bar{R}} = \frac{0.6906}{0.2309} = 2.9909$$

The above table shows the expected return, standard deviation, co-efficient of variation and realized return of common stock of NBBL. It reveals that expected return is 23.09%, standard deviation is 0.6906 and co-efficient of variation is 2.9909 respectively. The standard deviation is 0.6906 where, as its C.V is 2.9909 which means that the earning 1 extra unit of return from the share of NBBL, investor have to bear 2.9909 unit of risk. It would prove to be investment having aggressive return with aggressive risk.

**Figure 4.12**

**Annual rate of return of common stock of NBBL**



Source: calculated from table 4.12

The above figure shows the rate of return of the share of NBBL. It is maximum in the fiscal year 2004/05 and minimum is in the fiscal year 2007/08. it has negative return in fiscal year 2005/06 and in fiscal year 2008/09.

## 4.1.7 Nepal Investment Bank Ltd (NIBL)

### 4.1.7.1 Introduction:

Nepal investment Bank Ltd. (Previous Nepal Indosuez Bank Ltd) was established on 21, Jan,1986 as a third joint venture bank under the company Act 1962. The bank is managed by Banque Indosuez, Paris in accordance with joint venture and technical services agreement signed between it and Nepalese promoters and share holders.

Its authorized capital is Rs270, 000,000, issued capital is Rs169, 845,000 and paid up capital is Rs169, 845,000. Par value per share is Rs100 and no. of shareholders is 2780. Bank was listed in the NEPSE in B.S. 05-08-2044.

### 4.1.7.2 Annual market price and dividend distribution of NIBL

**Table 4.13**

#### **Annual market price and dividend distribution of NIBL**

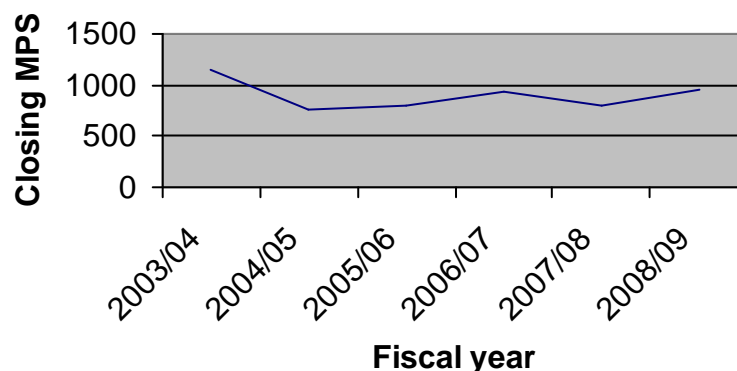
Fiscal year	High mps	Low mps	Closing mps	Dividend	Stock dividend	*Total dividend
2003/04	2730	1080	1150	-	100%	760
2004/05	1150	575	760	-	-	-
2005/06	890	635	795	20	40%	376
2006/07	942	745	940	15	-	15
2007/08	1430	760	800	15	-	15
2008/09	1500	815	960	20	-	20

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

\*Total div = Cash div + % of stock x next year's mps

The above table shows the high market price, low market price, closing market price dividend per share and total dividend of the common stock on NIBL from fiscal year 2003/04 to 2008/09. In the starting fiscal years 2003/04 mps is at highest level i.e.Rs1150. in fiscal year 2004/05 mps is decreased and reached lowest level i.e.; Rs760. From fiscal year 2005/06 mps is in increasing trend it has reached up to Rs.960 in the fiscal year 2008/09. Annual movement of NIBL is shown if figure 4.13.

**Figure 4.13**  
**Annual market price movement of common stock on NIBL**



Source: calculated from table 4.13

The above figure shows that the price movement of common stock on NIBL. The mps in fiscal year 2003/04 is Rs1150 which is decreased in next year to Rs760. From the fiscal year 2005/06 mps has slightly increasing trend. The highest mps in Rs1150 and lowest is Rs760 respectively.

Year end price and dividend amounts are used to calculate realized rate of return of each year. Table no. 5.4 shows the calculation of yearly realized returns, expected return, standard deviation of return. The expected return on common stock of NIBL is in 7<sup>th</sup> highest position i.e. 9.9 as comparison with other commercial banks. Standard deviation is in 4<sup>th</sup> position i.e. 0.5594 and co-efficient of variation is in 2<sup>nd</sup> highest position i.e. 5.65 as comparison with other commercial banks

**Table 4.14**  
**Realized rate of return, expected rate of returns, standard deviation of return and co-efficient of variation of common stock of NIBL**

Fiscal year	Market price	Dividend	$R = \frac{(P_{t+1} - pt) + Dt + 1}{Pt}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2003/04	1150	-	-	-	-
2004/05	760	-	-0.3391	-0.4381	0.191932
2005/06	795	376	0.5408	0.4418	0.195187
2006/07	940	15	0.2013	0.1023	0.010465
2007/08	800	15	-0.1330	-0.232	0.053824
2008/09	960	20	0.2250	0.126	0.015876
			$R = 0.4950$		$(R - \bar{R}) = 0.467284$

Source: calculated from table 4.13

We have,

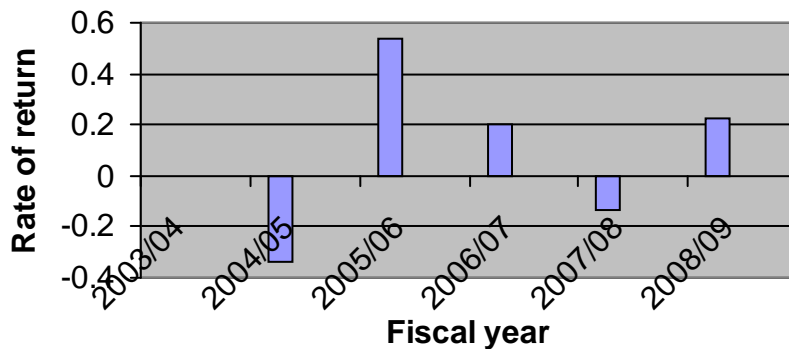
$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.4950}{5} = 0.099$$

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{0.4673}{5 - 1}} = 0.3418$$

$$\text{Co-efficient of variance (C.V.)} = \frac{\sigma}{\bar{R}} = \frac{0.3418}{0.099} = 3.4525$$

The above table shows that the expected return, standard deviation, co-efficient of variation and realized return of common stock of NIBL. It reveals that the expected return is 9.9% standard deviation is 0.3418 and co-efficient of variation is 3.4525 respectively. The standard deviation is 0.3418 where as its C.V. is 3.4525 which mean that the earning 1 extra unit of return from the share of NIBL investors has to bear 3.45 unit of risk. It would prove to be investment having aggressive return with aggressive risk.

**Figure 4.14**  
**Annual rate of return of common stock of NIBL**



Source: Calculated from table 4.14

The above figure shows the rate of return of the share of NIBL. It is maximum in fiscal year 2005/06 and minimum in fiscal year 2006/07. It has negative return in fiscal year 2004/05 and in fiscal year 2007/08 i.e. 0.5408, 0.2013, -0.3391 and -0.1330 respectively.



## Comparative analysis of joint venture banks

### 4.2 Interbank comparisons:

**Table 4.15**

**Selected banks expected return, standard deviation and co-efficient of variation**

S.N.	Companies	Return	Risk	C.V	Remarks
1	SCBN L	0.1259	0.2373	1.8846	Lowest S.D.
2	HBL	0.2508	0.1441	1.149	
3	NABIL	0.238	0.26	1.09	Lowest C.V.
4	Nepal SBI	0.1302	0.8177	6.28	
5	EBL	0.3631	0.4994	1.3754	Highest return
6	NBBL	0.2309	0.6906	2.9909	
7	NIBL	0.099	0.3418	3.4525	

Source: calculated from table from 4.1 – 4.14

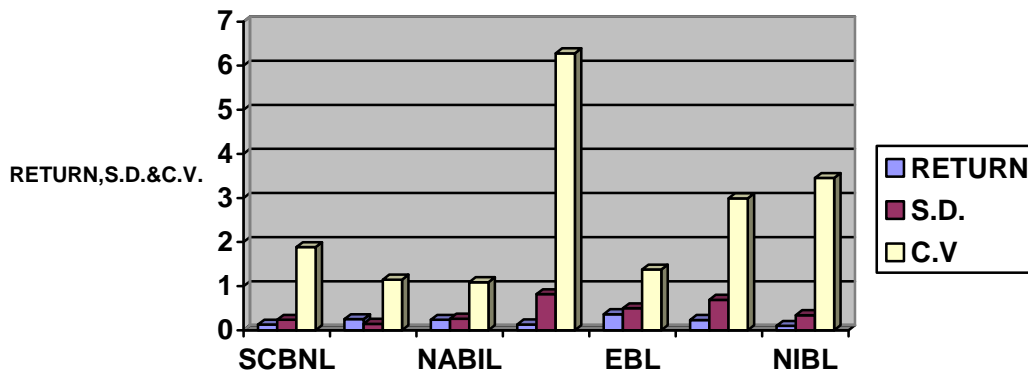
According to the return from the section 4.1 a comparative return and unsystematic risk is performed here. Expected return, standard deviation of return and co-efficient of variation of each bank as calculated in our above study are given in table no 4.15. Investor can get the highest return investment in C.S. of EBL and lowest return from investment in C.S. of NIBL. EBL has the highest standard deviation and HBL has the lowest standard deviation on the basis of risk per unit return (i.e.C.V.). According to risk and return comparison with market, SBI has risky C.S. because co-efficient of variation of SBI is greatest among all coefficient of variation

gives the best result because it means the risk per unit of return  $\frac{\sigma}{\bar{R}}$ . coefficient of variation (C.V) is the more appropriate basis of taking decision on the Investment In Single Security It measures Risk Per Unit Of a Stock. Expected Return and Standard Deviation are Included In It. However, It Is Relative Measurement Tools. Standard Deviation Also Measures The Risk But It Is Absolute Measurement Tools. Generally Standard Deviation Is Use To Measure

Risk But Best Measuring And Superior Tools Is C.V That's Why Stock Having Higher Coefficient Of Variation Is Riskiest Stock Of All.

To Make The Comparison Easily Understandable Diagram 4.15 Is Presented Below:

**Figure 4.15**  
**Expected return, S.D. and CV of each commercial Bank**



Source: table 4.15

The diagram confirms that the total risk has measured by S.Q. observed maximum in the common stock of EBL and minimum in the common stock of HBL i.e. 170% and 14.14% respectively. This means that stock of EBL is more risky than that of HBL. Since return of EBL is maximum at 36.31%, NIBL has least expected return i.e. 9.9%, whereas NABIL has least C.V at 1.09 and Nepal SBI has highest CV at 6.28.

### 4.3 Market capitalization of each Bank

On the basis of market capitalization the size of each bank is presented in table 4.16. market capitalization is the total market value at specific time period of the company, industry and market as a whole, standard chartered bank Nepal ltd has highest market capitalization among listed Bank at July16,2009.

**Table 4.16**

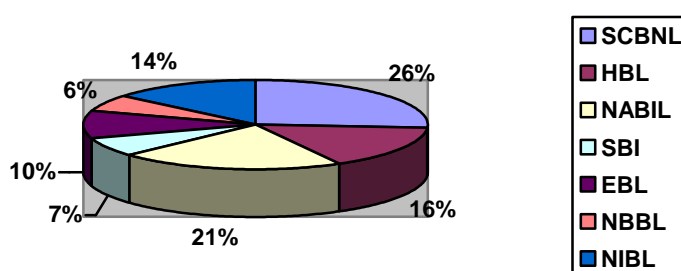
**Market capitalization of listed Banks in July 16, 2009**

Banks	Market capitalization	Percentage
SCBNL	14,142,675,100	26%
HBL	8,494,200,000	16%
NABIL	10,998,288,000	21%
SBI	3,964,555,584	7%
EBL	5,212,620,000	10%
NBBL	3,241,426,000	6%
NIBL	7,441,383,600	14%

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

**Figure 4.16**

**Market capitalization of listed banks in July-15,2009**



Source: Table 4.16

The above diagram shows share of market capitalization of each bank in percentage in the pie chart SCBNL covers largest area in the diagram having 26% market capitalization, SBI and NBBL covers lowest area in the diagram having 7% and 6% respectively. NABIL is in 2<sup>nd</sup> position having 21% market capitalization. Similarly HBL, NIBL and EBL cover 16%, 14% and 10% respectively.

**4.3.1 Movement of market capitalization:**

The table no.4.17 shows the comparative movement of market capitalization of each bank. it shows that the standard chartered bank is in the front of all banks for all year in comparison to market capitalization. It has started

from Rs67004 million in the end of financial year 2002/2003 and increased to Rs14142.67 million in July 16, 2009. NABIL Bank is in 2<sup>nd</sup> position which is started from Rs5499.20 million in 2002/2003 and increased to its highest level to Rs10998.29 million in the financial year July 16, 2009 and similarly NBBL has lowest market capitalization Rs1768.91 million in 2002/2003 and reached to 3241.42 million in the year 16 July 2009.

**Table 4.17**

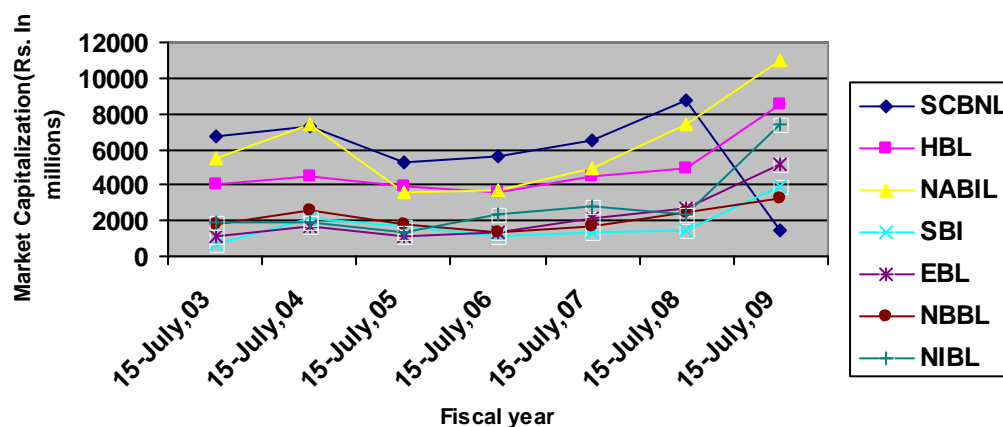
**Year-wise comparative movement of market capitalization (Rs in Millions)**

Years	15july03	15July04	15July05	15July06	15July07	15July08	15July09
SCBNL	6740.04	7279.95	5263.03	5568.62	6537.67	8758.32	1414.67
HBL	4080.00	4500.00	3900.00	3586.44	4504.50	4933.50	8494.20
NABIL	5499.20	7374.75	3613.63	3663.63	4916.50	7389.47	10998.29
SBI	674.12	2159.10	1703.81	1084.16	1310.52	1446.04	3964.55
EBL	1160.52	1656.45	1115.08	1401.75	2142.00	2740.50	5212.62
NBBL	1768.91	2619.76	1821.98	1295.70	1734.45	2417.63	3241.42
NIBL	1896.25	1954.77	1291.85	2347.73	2775.73	2362.34	7441.39

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

**Figure 4.17**

Year wise comparative movement of market capitalization in different year



The diagram indicates the position of each banks market capitalization and it clear shows the SCBNL, NABIL, HBL, and NBBL. Position in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 7<sup>th</sup> respectively.

#### 4.4 Inter industry comparison:

For this analysis size of industry has to be compared. To compare size of industries table no. 5.8 and diagram no. 5.8 is presented below. Which shows the market capitalization of each industries in July 16, 2009 we can observe that the banking industry has majority value of the total market share i.e. Rs7027.81 million. Which is majority having (73%) as compared to other sector and the trading has lowest market value i.e. 764.44 million is equal 0.79~1%.

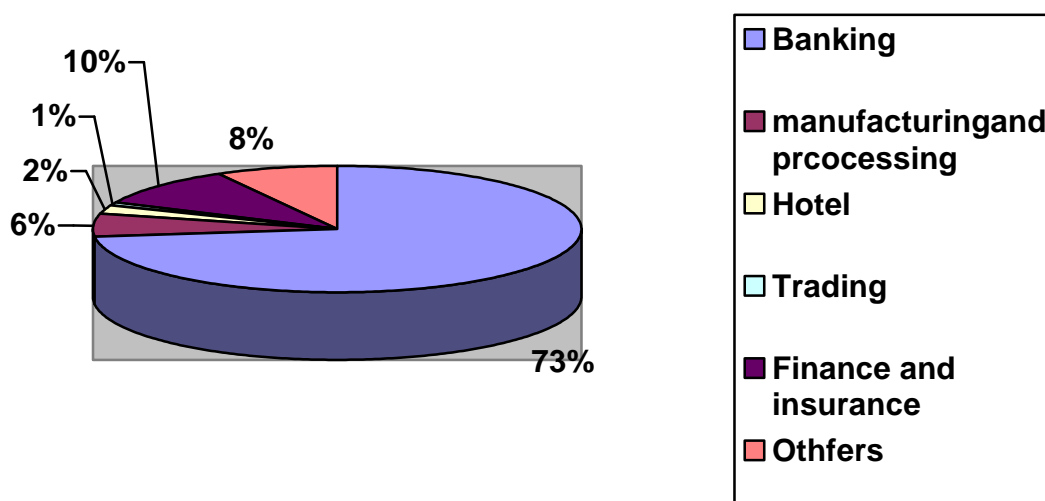
**Table 4.18**

#### Market capitalization of each industry in 16 July 2007

Industry	Market capitalization	Percentage
Banking	70,271,808,454	73%
Manufacturing and processing	5,472,111,950	6%
Hotel	2,344,214,710	2%
Trading	764,441,829	1%
Finance and insurance	9,02,220,845	10%
Others	8,008,940,004	8%
Total	96,763,737,792	100%

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

**Figure 4.18**  
**Market capitalization of each industry at 16 July, 2009**



The above diagram shows the market capitalization of each industry in percentage in the pie-chart. Banking industry covers largest area in the diagram having 73% market capitalization. Finance and insurance is in 2<sup>nd</sup> position having 10% market capitalization. Similarly, other, manufacturing and processing, Hotel and trading covers 8%,6%,2% and 1% respectively. Pie-chart clearly shows the banking had target market capitalization where as trading has the lowest market capitalization.

**Table 4.19**  
**Industry wise market capitalization (Rs in millions)**

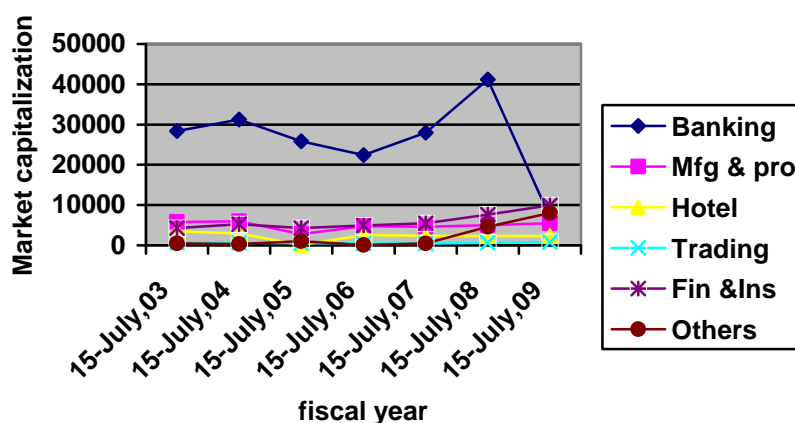
Year industry	15 July 2003	15 July 2004	15 July 2005	15 July 2006	15 July 2007	15 July 2008	15 July 2009
Banking	28355.09	31235.21	25861.89	22453.49	27944.27	41169	70271.8
Mfg & pro	5823.00	5971.97	2807.74	4731.30	4644.59	5024.83	5472.11
Hotel	3528.55	2969.85	107.12	2550.61	2391.39	2308.38	2344.21
Trading	660.73	616.98	527.48	488.02	493.09	635.88	764.44
Fin & Ins.	4271.61	5255.65	4328.55	4949.70	5461.05	7632.33	9902.22
Others	483.34	299.76	1071.09	67.26	490.37	4594.62	8008.94

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

The above table shows the industry wise market capitalization. It shows that the banking industry is in front of all industry for all year in comparison to market capitalization. It has started from Rs28355.09 million in the end of year 2002/03 and has reached to Rs70271.80 million in 16 July 2009. Finance and insurance is in 2<sup>nd</sup> position which was started from Rs4271.61 million in 15 July 2003 and reached for Rs9902.22 million in 15 July 2009. Similarly, trading is lowest which has started from Rs660.73 million in 15 July 2003 and reached to Rs8008.94 million in the 16 July 2009.

**Figure 4.19**

**Industry wise movement of market capitalization (Rs in millions )**



Source: Table 4.19

**Table 4.20**

**Industry wise NEPSE index at closing date of different fiscal year**

Industry \ Year	Banking	Mfg and Pro	Hotel	Trading	Finance and insurance	Others	Market
20003/04	379.38	349.31	291.34	115.55	318.67	190.90	348.43
2004/05	482.29	283.44	216.51	112.20	567.35	77.40	227.54
2005/06	446.62	250.13	196.68	94.56	448.78	48.56	204.86
2006/07	422	255.58	184.41	96.01	443.61	142.65	222.04
2007/08	304.64	276.50	178	123.20	548.63	347.65	286.67
2008/09	420.56	284.35	195.43	135.10	575.42	320.56	386.87

**Table 4.21**

**Expected return, standard deviation of return and coefficient of variation of industries**

Industry	Expected return	S.D.	C.V.	Remark
Banking	0.0489	0.2636	5.389	
Mfg and Processing	-0.01347	0.1017	7.948	
Hotel	-0.06512	0.1654	2.54	
Trading	0.0046	0.1103	23.97	
Finance and insurance	0.1704	0.3813	2.241	Best as per C.V.
Others	0.4658	1.1438	2.46	

Source: Appenix13-18

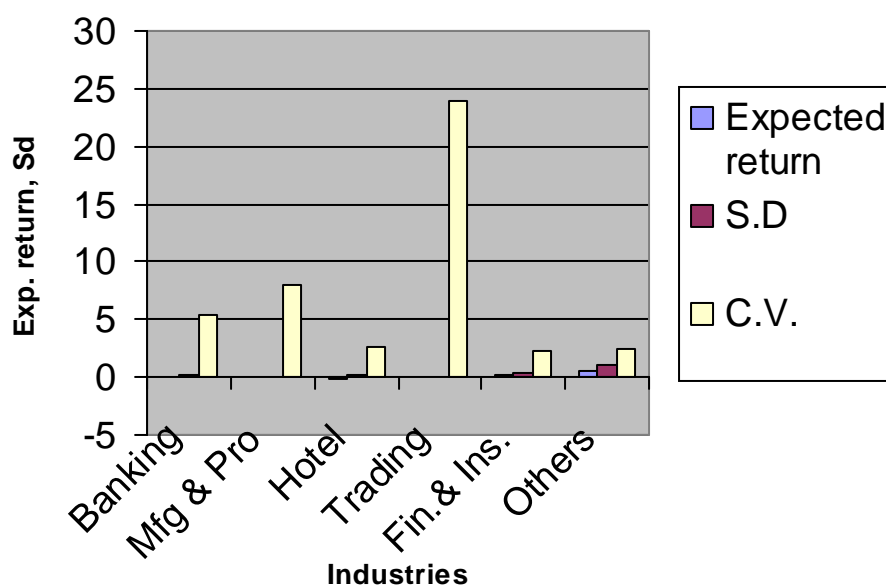
The study is focus on risk and return expected rate of return, standard deviation, coefficient of variation are taken as a main concern to compare between industries, return of each industry is calculated based on industry wise NEPSE index. Year end-industry wise NEPSE index is given in table no.4.20 and likewise no. 4.21 shows the variables of each industry.

According to risk and return comparison we found that C.V. of finance and insurance is 2.24 which are minimum as compared to other sector therefore, it is the most suitable for the investment.



**Figure 4.20**

**Industry-wise expected return, SD and C.V**



#### 4.5 comparisons with market

In Nepal there is only one stock market i.e. NEPSE. Overall market movement is represented by market index i.e. NEPSE index. Market return its standard deviation and co-efficient of variation are shown in table 4.22.

**Table 4.22**

**Realized rate of return, expected rate of return, standard deviation of return and co-efficient of variation of market**

Year	NEPSE INDEX(NI)	$R = \frac{NIT - NIT-1}{NIT-1}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remark
2003/04	348.43	-	-	-	
2004/05	227.54	-0.3469	-0.4029	0.1623	
2005/06	204.86	-0.0997	-0.1557	0.02424	
2006/07	222.04	0.0838	0.0278	0.00077	
2007/08	286.67	0.2911	0.2351	0.05527	
2008/09	386.87	0.3496	0.2936	0.0862	
Total			$(R - \bar{R})^2 = 0.3288$		

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

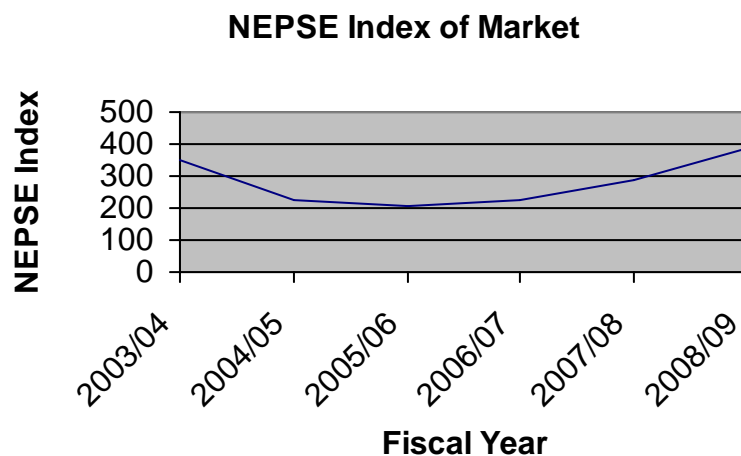
$$\text{Expected return } (\bar{R}) = \frac{\sum R}{N} = \frac{0.2800}{5} = 0.056$$

$$\text{Standard deviation } \sigma = \sqrt{\frac{(R - \bar{R})^2}{n}} = \sqrt{\frac{0.3288}{5}} = 0.256$$

$$\text{Co-efficient of variation C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.256}{0.056} = 4.57$$

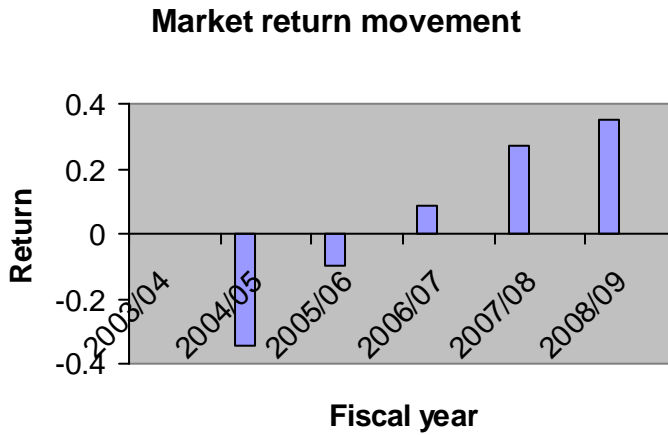
From the above calculation, the market return is (5.6) risk is (28.6) and C.V. is (5.10) in comparison with market return (5.6%), the finance and insurance (17.4%), others (46.5) % and banking (5.10%) have higher expected return than market return. But manufacturing and processing (-1.34%), Hotel (-6.52%) and trading (0.46%) have lower expected return. In comparison with market risk (0.286), finance and insurance (0.3813) others (1.1438) have highest risk than market. But remaining others banking (0.2636), manufacturing and processing (0.1071), hotel (0.1654) and trading (0.1103) have lower risk than market risk.

**Figure 4.21**



The above figure shows that the NEPSE index is very high in the year 2008/09 has decreasing trend from 2003/04 to 2005/06 . And it begin to rise up from fiscal year 2006/07.

**Figure 4.22**



The above figure shows that the market return is very high in the fiscal year 2008/09. The return is negative in fiscal year 2004/05 and fiscal year 2005/06. The return began rise up from the fiscal year 2006/07.

#### **4.6 Analysis of market sensitivity:**

Market sensitivity is explained by it is beta coefficient. Beta is known as systematic risk which cannot be eliminated through the means of diversification measure. Higher the beta is greater the market sensitivity and higher the reaction to the market movement. The beat of market is always 1. So, the beta of 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.

We have,

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

Where,

$r_{jm}$  = Correlation between market return and stock (say stock-j) return

$\sigma_j$  = Beta of stock j.

$\sigma_j$  = Standard Deviation of stock j.

$\sigma_m$  = Standard Deviation of market.

Hence,

$$S_m \times \frac{Cov(R_m, R_m)}{\sigma_m^2} \times \frac{\sigma_m \sigma_m r_{mm}}{\sigma_m \sigma_m} \times r_{mm} \times 1 \quad (\text{Since } r_{mm} = 1)$$

Hence, beta coefficient of market is always 1.

**Table 4.23**

Beta co-efficient of each bank

S.N.	Bank	Beta coefficient	Remark
1	SCBNL	0.548	
2	HBL	0.4929	
3	NABIL	0.464	High defensive
4	SBI	3.17	Most aggressive
5	EBL	1.664	
6	NBBL	1.85366	
7	NIBL	0.75795	
	Total		

Source: Appendix 1-7

From the above table SBI, EBL, NBBL and NIBL have higher beta coefficient than market, the stocks of these banks are aggressive and remaining banks HBL, SCBNL and NABIL have lower beta coefficient than market. So, they are defensive stock. Among these all NABIL has the lowest beta co-efficient, so, the stock of NABIL is highly defensive with market return and the Nepal SBI bank has the highest beta coefficient. So, the stock is highly sensitive with market return. According to the beta calculation, aggressive stocks are highly sensitive with market movement. If market rises/falls by one percentage stock's movement will rises/falls by more than one percent. In case of defensive stocks reaction of market is less than one percent. If market movement rise/fall by one percent:

### **Required rate of return, expected rate of return and price evaluation:**

For this analysis Beta's expected rate of return has been taken from table no.5.8 and table no. 6.4. Here the risk free rate of return is needed which is taken from the interest rate of Treasury bill Issued by Nepal Rastra Bank. NRB issued Treasury bill 91 day and 364 day duration. The interest rate of T-bill i.e. of 91 day is taken as risk free rate. This is approximately 3.735 % ( data source NRB).

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. Stock is said to be under priced and investor should make buying strategy for this type of stock and vice-versa

**Table 4.24**

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

Banks	Beta	$E(R_i) = R_f + (R_m - R_f) \beta_j$	Exp. Rate of return ( $\bar{R}$ )	Price
SCBNL	0.548	0.06776	0.1259	Under priced
HBL	0.4929	0.06471	0.2508	Under priced
NABIL	0.464	0.06310	0.238	Under priced
SBI	3.17	0.1230	0.1302	Under priced
EBL	2.94	0.2003	0.3631	Under priced
NBBL	2.09	0.1532	0.2309	Under priced
NIBL	1.18	0.1028	0.199	Under priced

Whereas,

$$R_f = \text{risk free rate of return} = 3.735$$

$$R_m = \text{Market rate of return} = 9.28$$

$$E(R_i) = \text{Equilibrium rate of return of capital assets pricing model (CAPM)}$$

All the commercial banks stock are under priced so all the banks are having stock with good investment opportunity. This stock's value will be increase in the near future providing the investor higher return. But other dimensions of analysis are also essentials for efficient decision making.

**4.7 Portfolio analysis:**

Portfolio theory is originally proposed by Hang Markowitz. This theory gives the concept of diversification of risk by investing total funds in more than a single assets or single stock. It helps the investor to attain a higher level of expected utility then with any other risk reduction technique. The main objective of portfolio is reduction of unsystematic risk from which investors can take more benefit by making efficient portfolio. Therefore, a brief analysis of risk and return is extended

to portfolio context. In portfolio analysis we analyze future risk and return of securities when held in portfolios. Its objective is to help developing a portfolio that has the maximum return at choose level of risk. Efficient portfolio provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. (Shrestha, et al., 2003, P: 144)

The expected return of a portfolio is simply a weighted average the expected return f the securities comprising that portfolio. The weights are equal to the proportions of total funds invested in each security. (The weights must sum to 100%)

#### 4.7.1 Analysis of risk diversification:

In a very simple way we can understand it as not keeping all the eggs in single basket. By diversifying total funk in different securities the risk of individual securities can be reduced without losing considerable return.

This analysis is based on the two assets portfolio and the tools for analysis are presented in chapter III (Research methodology) here, the portfolio of the common stock on NIBL (say stock A) and SBI (say stock B) is analyzed. Table no. 4.25 shows the calculation of covariance of the returns of given two stocks.  $Cov(R_A R_B)$  and the proportion of stock (WA) that minimized the risk.

$$\text{We have, } WA = \frac{\sigma_S^2 \text{Cov}(R_A R_B)}{\sigma_A^2 \sigma_B^2 - 2 \text{COV}(R_A R_B)}$$

where,

$\sigma_S^2 = \text{Standard deviation of C.S. of SBI}$

$\sigma_A^2 = \text{Standard of deviation of C.S. on NIBL}$

$\text{COV}(R_A R_B) = \text{Covariance of return between S.C. of NIBL and SBI}$

$WA = \text{Proportion of the C.S. of NIBL}$

$WB = \text{Proportion of the C.S of SBI}$

**Table 4.25**  
**Covariance ( $R_A R_B$ ) and WA of stock A and WB if stock B**

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$	Remarks
2004/05	-0.4381	-0.863	0.37808	$(R_A - \bar{R}_A)$ from table no. 4.14 and $(R_B - \bar{R}_B)$ from table no. 4.8
2005/06	0.4418	-0.474	-0.20941	
2006/07	0.1023	0.074	0.00757	
2007/08	-0.232	-0.04	0.00928	
2008/09	0.126	1.303	0.164178	
total	-0.4381		0.349695	

We have,

$$COV(R_A R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.3497}{5-1} = 0.08743$$

And to minimize the risk the proportion of stock A in the portfolio is given as:

$$WA = \frac{{}^2B - cov(R_A R_B)}{{}^2A + {}^2B - 2cov(R_A R_B)} = \frac{0.6686 - 0.08743}{0.1168 + 0.6686 - 2 \times 0.08743}$$

$$= \frac{0.58117}{0.61054}$$

$$= 0.9519$$

$$WB = 1 - WA$$

$$= 1 - 0.9519$$

$$= 0.0481$$

If the portfolio is constructed with 95.19% of NIBL common stock and 4.81% of SBI common stock, constructed portfolio will minimize risk and will be ideal proportions.

### Portfolio Return

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

$$R_P = WA \bar{R}_A + WB \bar{R}_B$$

$$= 0.9519 \times 0.099 + 0.0418 \times 0.1302$$

$$= 0.09424 + 0.00544$$

$$= 0.09968$$

$$= 9.97\%$$

Where,

$R_P$  = Average return on portfolio of stock A and B

$\bar{R}_A$  = Average return of NIBL

$\bar{R}_B$  = Average return of SBI

Here,

Portfolio return is 9.97%

Where,

The portfolio risk is given as:

$$\begin{aligned} \sigma_p &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{COV}(R_A, R_B)} \\ &= \sqrt{(0.9519)^2 \times (0.3418)^2 + (0.0481)^2 \times (0.8177)^2 + 2 \times 0.9519 \times 0.0481 \times 0.08743} \\ &= \sqrt{0.1153} \\ &= 0.3396 \\ &= 33.96\% \end{aligned}$$

Where,

$\sigma_p$  = The standard deviation of portfolio return of stock A and B Before diversification, standard deviation of NIBL and SBI was 34.18% and 81.77% respectively. We can reduce standard deviation by using the diversification, after the portfolio construction the risk is 33.96% which is lower than the before diversification 34.18% and 81.77%.

#### 4.8 correlations between Banks.

Correlation between the return of the two securities plays a significant role in risk management. Most of the stocks are positively correlated, not perfectly. In this situation, some degrees of risk can be reduced. Here, correlation between each banks are presented below and the correlation between stock A and stock B ( $r_{xy}$ ) can be calculated as below:

Correlation between NIBL and SBI Banks (PAB):

We have,

$$PAB = \frac{\text{COV}(R_A, R_B)}{\sigma_A \sigma_B} = \frac{0.0876}{0.3418 \times 0.8177} = 0.3134$$

Where as,



$P_{AB}$  = correlation of return between SBI and NIBL

$Cov (R_A R_B)$  = Covariance between SBI and NIBL

$\Omega_A$  = standard deviation of SBI

$\Omega_B$  = Standard deviation of NIBL

**Table 4.26**  
**Various correlations between each Bank**

	HBL	SCBNL	NABIL	SBI	EBL	NBBL	NIBL
HBL	1	0.49	0.24	0.92	0.13	0.61	0.81
SCBNL		1	0.62	0.82	0.71	0.93	0.75
NABIL			1	0.93	0.59	0.62	0.56
SBI				1	0.74	0.85	0.63
EBL					1	0.75	0.48
NBBL						1	0.64
NIBL							1

Source: appendix 8-13

The above table shows the correlation between banks return on common stock investment. All the banks have positive correlation. The degree of risk can't be reduced if there is perfect positive correlation between SBI and NBBL. So, it will not be better to invest in the combination of SBI and SBBL. There is lower positive correlation between SBI and NABIL. So, it will be better to invest in the combination of SBI and NABIL.

#### **4.9 Test of hypothesis:**

A hypothesis is a conjectural statement of the relationship between two or more variables. The test of hypothesis discloses the fact whether the differences between the computed statistic and hypothetical parameter is significant or not. To make proper decision about the quantitative statement of the population testing of hypothesis is used. An experiment is conducted by using sample information's and the hypothesis is rejected. If the result is improbable, wonder the hypothesis and if the result obtained re probable, the hypothesis is accepted.

The research on this thesis strongly holds the hypothesis criteria. The hypothesis tests of this research work are as follows:

**Hypothesis:**

Null hypothesis (Ho) =  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6 = \mu_7$

There is no significant difference on average return of seven commercial banks.

Alternative hypothesis (H<sub>1</sub>) =  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6 \neq \mu_7$

There is significant difference on average return of seven commercial banks

**Table 4.27**

**Average yearly return of seven commercial banks**

	HBL		SCBNL		Nabil		SBI	
Year	X <sub>i</sub>	X <sub>i</sub> <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sub>3</sub>	X <sub>3</sub> <sup>2</sup>	X <sub>4</sub>	X <sub>4</sub> <sup>2</sup>
2004/05	-0.15	0.0225	-0.02304	0.000531	0.068	0.004624	-0.7327	0.536849
2005/06	-0.079	0.006241	0.2416	0.058371	0.0449	0.002016	-0.3441	0.118405
2006/07	0.0289	0.000835	0.1311	0.017187	0.575	0.330625	0.2039	0.041575
2007/08	0.1190	0.014161	0.4126	0.170239	-0.027	0.000729	0.0912	0.008317
2008/09	0.2063	0.04256	0.0746	0.005565	0.125	0.015625	1.4328	2.052916
Total	0.1254	0.015675	0.83686	0.251893	0.7859	0.617639	0.6511	2.758063

Year	EBL		NBBL		NIBL	
	X <sub>5</sub>	X <sub>5</sub> <sup>2</sup>	X <sub>6</sub>	X <sub>6</sub> <sup>2</sup>	X <sub>7</sub>	X <sub>7</sub> <sup>2</sup>
2004/05	0.4267	0.182073	1.4432	2.082826	-0.3391	0.114989
2005/06	0.4293	0.184298	-0.2655	0.07049	0.5408	0.292465
2006/07	0.573	0.328329	0.0511	0.002611	0.2013	0.040522
2007/08	0.3088	0.095357	0.0506	0.00256	-0.133	0.017689
2008/09	0.931	0.866761	-0.125	0.015625	0.225	0.050625
Total	2.6688	1.656819	1.1544	2.174113	0.495	0.516289

Grand Total (T) = X<sub>1</sub> + X<sub>2</sub> + X<sub>3</sub> ..... + X<sub>7</sub>

$$T = 0.1254 + 0.83686 + 0.7859 + 0.6511 + 2.6688 + 1.1544 + 0.495$$

$$= 6.71746$$

$$\text{Correction factor ( C.F )} = \frac{T^2}{N} = \frac{(6.71746)^2}{35} = 1.289265$$

$$\text{Total sum of Square (TSS)} = ( x_1 + x_2 + x_3 + \dots + x_7 ) - C.f$$

$$\begin{aligned} &= (0.015675 + 0.251893 + 0.617639 + 2.758063 + 1.656819 + 2.174113 + 0.516289) - \\ &1.289265 \\ &= 7.7637873 - 1.289265 \\ &= 6.474522 \end{aligned}$$

$$\text{Sum of square between sample (SSB)} = [ \frac{(X1)^2}{N_1} + \frac{(X2)^2}{n_2} + \dots + \frac{(X7)^2}{n_7} - C.f$$

**SSB**

$$= \left\{ \frac{(0.1254)^2}{5} + \frac{(0.83686)^2}{5} + \frac{(0.7859)^2}{5} + \frac{(0.6511)^2}{5} + \frac{(2.6688)^2}{5} + \frac{(1.1544)^2}{5} + \frac{(0.495)^2}{5} \right\} - 1.289265$$

$$\begin{aligned} &= 0.003145 + 0.140067 + 0.123528 + 0.084786 + 1.424499 + 0.266528 + 0.049005 \\ &- 1.289265 \\ &= 2.091558 - 1.289265 \end{aligned}$$

$$\text{SSB} = 0.802293$$

Sum of squares with in samples (SSW)

$$\text{SSW} = \text{TSS} - \text{SSB}$$

$$= 6.474522 - 0.802293$$

$$= 5.672229$$

**Table 4.28**  
**First ANNOVA**

Source of Variation	Sum Square	d.f	Means sum of squares	F-ratio
Between Smples	0.802293	7-1=6	$\frac{0.80229}{6} = 0.13372$	$\frac{0.1337}{0.196} = 0.682$
Within Sample	5.672229	35-6=29	$\frac{5.67223}{29} = 0.196$	0.196

Critical Value: The tabulated value of Fat = 5% Level of significance for 6 and 29 d.f. in one way ANNOVA table is 2.42.

**Decision:**

Since calculated value (0.196) is lower than tabulated value of F ratio, the null hypothesis (Ho) is accepted and concludes that, there is no significance difference on degree of risk of seven commercial banks.

**Table 4.29**  
**Average yearly degree of risk of seven commercial banks**

Y	HBL		SCBNL		Nabil	
	Xi	Xi <sup>2</sup>	X2 <sup>2</sup>	X2 <sup>2</sup>	X3	X3 <sup>2</sup>
2003/04	0	0	0	0	0	0
2004/05	0.175	0.0306	0.3563	0.1270	0.863	0.0289
2005/06	0.1037	0.0108	0.1157	0.01338	0.474	0.04452
2006/07	0.0037	0.000014	0.0052	0.000027	0.074	.1136
2007/08	0.094	0.0088	0.2867	.0822	0.04	0.07022
2008/09	0.18	0.0324	0.0513	.00263	1.303	0.0128
Total	0.5564	0.082644	0.8147	0.225237	0.226	0.27004

Y	SBI		EBL		NBBL		NIBL	
	X4	X4 <sup>2</sup>	X5	X5 <sup>2</sup>	X6	X6 <sup>2</sup>	X7	X7 <sup>2</sup>
2003/04	0	0	0	0	0	0	0	0
2004/05	0.863	0.7448	0.78980	0.6238	1.2123	1.4697	0.49	0.2401
2005/06	0.474	0.2247	0.0662	0.0044	0.4964	0.2464	0.4418	0.1952
2006/07	0.074	0.00547	0.2099	0.0441	0.1798	0.0323	0.1023	0.2046
2007/08	0.04	0.0016	0.0543	0.003	0.1803	0.0325	0.232	0.0538
2008/09	1.303	4.6972	0.5679	0.3225	0.3559	0.1267	0.126	0.0159
Total	2.754	2.67377	1.6881	2.8497	2.4247	1.9076	1.3921	0.7096

**Grand Total=** X<sub>1</sub> + X<sub>2</sub> + X<sub>3</sub> + X<sub>4</sub> ..... + X<sub>7</sub>  
= 0.5564 + 0.8147 + 0.226 + 2.754 + 1.6881 + 2.4247 + 1.3921  
= 9.856

$$\text{Correction Factor(C.F.)} = \frac{T^2}{N} = \frac{(9.856)^2}{35} = 2.7754$$

$$\begin{aligned} \text{Total sum of Square (TSS)} &= x_1^2 + x_2^2 + \dots + x_7^2 - \text{C.F.} \\ &= 0.08264 + 0.8147 + 0.226 + 2.6738 + 2.8497 + 1.9076 - 2.7754 \\ &= 8.5544 \end{aligned}$$

Sum of Square between samples (SSB)

$$\frac{x_1^2}{N_1} + \frac{x_2^2}{n_2} + \dots + \frac{x_7^2}{n_7} - \text{C.F.}$$

$$\begin{aligned} &= \frac{0.55642}{5} + \frac{0.81472}{5} + \frac{0.2262}{5} + \frac{2.7542}{5} + \frac{1.68812}{5} + \frac{2.42472}{5} + \frac{1.39212}{5} - 2.7754 \\ &= 0.0619 + 0.1327 + 0.0102 + 1.5169 + 0.5699 + 1.1758 + 0.3876 - 2.7754 \\ &= 3.885 \end{aligned}$$

**Table 4.30**

Source of Variation	Sum of Square	Degree of freedom	Mean sum of square	F-Ratio
Between Sample	8.5544	7-1=6	1.4257	$f = \frac{MSB}{MSW}$
Within Sample	3.885	35-6=29	0.1340	$\frac{1.4257}{0.1340}$
Total	12.4394	35		10.6396

Critical Value; the tabulated value of F at = 5% level of significance for 6 and 35 degree of freedom in one way ANOVA Table if 2.34

**Decision:-**

Since calculated value (10.6396) is higher than tabulated value of F ratio, the null hypothesis (Ho) is rejected and concludes that there is significance difference on average return of seven commercial Banks.

## CHAPTER-V

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

This is the last chapter of this study which is divided into three, sub chapters, summary, conclusion and recommendations which are presented below:

#### 5.1 summary of the study:

The relationship between risk and return is described by investor's perception about risk and their demand for compensation. No investor will like to invest in risks assets unless he/she is assured of adequate compensation for the acceptance of risk hence risk plays a central role in the analysis of investments. Risk and return are now receiving considerable attention in the field of financial management. Financial ratios have been used for centuries as rule of thumb to aid in understanding tradeoff between risk and return but they only scratch the surface.

The investors willingly offer more capital at higher rate of return whereas users rat common stock is the most risky security through it is the lifeblood of the stock market. An investment in common stock of corporate firm higher ensures and annual neither returns nor ensures the return of principal. Therefore, investment in common stock is very sensitive on the ground of risk divided to common stockholders is paid only is the firm makes an operating profit after tax and preference dividend. The company can return the principal in case of its liquidation only to the extent of the residual assets after satisfying to all its creditor's and preferential shareholders.

The main objective of the study is to analyze the beta of some listed commercial bank in context of Nepal. The study has taken a sample of seven listed commercial banks as reference to analyze the risk and return in common stock investment for the purpose of this study selected banks and their various

financial indicators were studied with regard to their influence on common stock investment.

Available information of these banks was gathered during the period of five years from 2003/04 to 2008/09. Various statistical tools such as average, standard deviation coefficient of variation, and hypothesis test were performed to come to some conclusion, on the common stocks investment of these sample commercial banks under the study while analyzing risk and return. A brief review of literature has been conducted. Scientific methods have been used in data analysis; moreover, tables, graphs and diagrams have also been made for both quantitative and qualitative analysis. Secondary data are also collected from the NEPSE, NBL and other related banks.

## **5.2 conclusion of the study:**

Today the Nepalese stock market is in an emerging trend. Its development is accelerating the economy since political change in 1990 because of the effect of openness and liberalization in national economy. However, due to the lack of knowledge and required information, Nepalese private investors seem to be unable to analyze the securities as well as the market properly. But, the stockholders have always a high desire for their share to have a high market price and their share to earn a high earning. So, the earning is one of the main important factors to encourage shareholders to be happy and keep them investing in the capital market in Nepal, most of the people considered stock market investment as black art that they know little about it. Many people have unrealistically optimistic expectations about stock market investment or perhaps just a fear of the unknown. This study enables investors to put the returns they can expect and the risk they may take into a better perspective. The other findings and conclusion in the course of this study are as under:

1. we know that coefficient of variation (CV) is a more rational basis of investment decision. Which measures the risk in per unit on the basis of C.V. common stock of Nabil is the best among all banks. It has 1.09 C.V, similarly, HBL (1.149), SCBNL (1.8846), EBL (1.3754), NBBL (2.9909), NIBL(3.4525) and SBI(6.28) C.V. respectively. Market coefficient of

variation is 5.10 which is lower than SBI and 17 is higher than other remaining Banks.

2. standard deviation is measures of total risk. The major aspects of the risk is systematic risk, which is defined by market and measured by beta( $\beta$ ) coefficient. Beta explains the sensitivity or volatility of the stocks return with market return. Is most volatile. (i.e.  $\beta= 3.17$ ) and nabil bank's c.s is least volatile(i.e.  $\beta= 0.464$ ).The banks stock having more than beta of market more than 1 is aggressive type of common stock and less than 1 is defensive common stock. We found that the SCBNL, HBL and NABIL are defensive where SBI, EBL, NBBL and NIBL banks are aggressive.
3. Return is the income received on a stock investment, which is usually expressed in percentage expected return in common stock investment of EBL is highest one among all the banks. The expected return of this bank is 36.31%, similarly expected return of the common stock of NIBL is found minimum 9.90% likewise, HBL (25.08%), Nabil (23.8%), SBI (13.02%) and NBBL 23.09 respectively. The market rate of return is 5.60% which is less than all the other banks. This indicates that returns of all banks are satisfactory.
4. Standard deviation measures the scatter of the mass of figure in a series (i.e. dispersion) which is an absolute measurement. The greater the amount of dispersion, the greeter will be the standard deviation and vice-versa. Standard deviation on common stock return of SBI is the highest (i.e.0.8177), similarly NBBL (0.6906), EBL (0.4994), NIBL(0,.3418),NABIL(0.26), SCBNL(0.2373) and HBL (O.1441) have 2<sup>nd</sup>,3<sup>rd</sup>,4<sup>th</sup>, 5<sup>th</sup>,6<sup>th</sup> and 7<sup>th</sup> position respectively. Standard deviation of market returns is 0.286 which is higher than Nabil, SCBNL and HBL and lower than remaining other four banks.
5. By the industry-wise risk and return comparison result, other industry has highest return and standard deviation among all and it has 5<sup>th</sup> highest C.V. finance and insurance has 2<sup>nd</sup> highest return and 2<sup>nd</sup>



highest standard deviation but C.V. is the lowest among all. Banking industry has 3<sup>rd</sup> highest return and 3<sup>rd</sup> highest standard deviation where as it has 3<sup>rd</sup> highest C.V. manufacturing processing and hotel have negative return and C.V but it's standard deviation is in 4<sup>th</sup> and 6<sup>th</sup> position respectively trading has 4<sup>th</sup> highest return 5<sup>th</sup> highest standard deviation but it has the highest C.V among all.

- 6.** Based on market sensitivity, beta co-efficient of SCBNL is 0.548 similarly, HBL (0.4929),NABIL(0.464),SBI(3.17),EBL(2.94),NBBL(2.09) and NIBL (1.18) beta co-efficient respectively. Here, SBI, EBL, NBBL and NIBL have higher beta co-efficient than market. The common stock of these banks is aggressive and remaining banks HBL, SCBNL and Nabil have lower beta co-efficient. So, these are defensive stock. Among all these Nabil has the lowest beta co-efficient so, the stock of Nabil is highly defensive and SBI bank has the highest beta co-efficient so, it is highly aggressive and sensitive with market return.
- 7.** Diversification of funds by making portfolio can eliminate unsystematic risk of the individual security. If the investors select the securities for the investment which are perfect negatively correlated, of returns, the risk can be reduced totally but if investors select highly positive correlation risk reduction is impossible. So, the portfolio between the CS of same industry cannot reduce risk. In their study NBBL, NIBL and SBI have highly positive correlation. So the portfolio construction of the common stocks of these banks will not reduce any risk, which is not favorable for portfolio construction.
- 8.** The correlation between the return of common stock of listed banks have determined with help of co-variation. All banks have positive correlation. The degree of risk can not be reduced if there is perfectly positive correlation between common stocks. SBI and NBBL have perfectly positive correlation so, it will not be better to invest in the combination so, SBI and NBBL. There is lower positive correlation between SBI and Nabil so, it will be better to invest in the combination of SBI and Nabil.

9. The significance of beta is capital asset pricing model (CAMP). CAMP is the model that describes the relationship between systematic risk and equilibrium. Expected rate of relationship between systematic risk and equilibrium. Expected rate of return and equilibrium rate of return are compared to identify whether the stock overpriced or under priced. If required rate of return is lower than expected rate of return, stock is known as under priced and if the required rate of return is greater than expected rate of return, the stock is over price. In this study, all the commercial banks, which are analyzed, are under priced. Under priced means value of stock of those banks will be increased in near future. Therefore, investor can purchase the common stock of all banks.
10. The test of hypothesis carried out (ANOVA ) that there is significant difference on average return and degree of risk among different commercial banks under studied.
11. There are various aspects of return and risk of common stocks. The lack of adequate information and poor knowledge is one of the aspects due to which the investor cannot earn proper return even bearing the high risk. The frequent change in fiscal and monetary policy, tax policy and inflation also affect the level of risk and return of common stocks, most of Nepalese investors invest in single security due to which the level of risk any increase and if they invest in more than one bank's common stock, they select the stocks because of expectation and assumption that they will provide higher return at lower risk. However, without analyzing the risk and return, higher return at low risk cannot be expected.

### **5.3 Recommendation:**

The recommendation of the study may be important information for those who are directly and indirectly concerned with the common stock investment thus the following recommendations are as follows:

- ) It would be better if shareholder analyze their risk attitude, needs and requirements before making investment decision in the stock market. It would

be more preferable to make several discussions with stock broker and make choice on the basis of reliable information.

- ) Investor should diversify their fund to reduce risk with the help of correlation analysis. That is, do not pull all your eggs in one basket.
- ) Investors have to focus their mind both on risk and return. Before thinking about higher return they also have to think about risk associated with the return. So, risk averter investors can invest on the moderate types share having low risk and high return.
- ) Normally investor think, investment on stock market is ever beneficial. They think that the prices of shares always increase and there is every time benefit. But in reality it is not true. The price of the share may decrease due to many reasons and factors affecting the stock market. Especially the political factors influence the price of the shares in Nepal. So, before investing the fund on stocks of any companies, investors must have to think about the condition of market and economic and non-economic factors affecting the market.
- ) General knowledge about economic as well as technological trend will be advantageous. To win the market, sell the share when the market is rising and buy share when market is falling and hold share.
- ) Sharing experience, ideas and taking view of expert will be more help for investment. Investment clubs are a good way to exchange investment. In Nepal such type of club one not available collective investment e.g. mutual fund is worthwhile for people with little interest in investment. In addition it allows investor with limited resources to obtain reasonable diversification.
- ) NEPSE should develop different programmes for private investor such as investor's meeting and seminars in different subject matter like "Trading rule and regulation in this modern technological age." It should develop efficient and effective information channel and to provide up to date data. In addition they must be co-operative.
- ) Government need 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 security and trading of these security in NEPSE provide opportunity of varieties of security at the someplace to investors so that they

can diversify their funds properly to construct optional portfolio. This will increase the strength of market and more specifically, NEPSE as well.

- ) Different financial and statistical tools are considered to analyze that data in this study coefficient of variation (C.V.) suggest that the banking industry is the best for the investment, similarly while analyzing individual security Nabil seems to undoubtedly the best for investment with considering the full time horizon of the study, C.S of Nabil may be the best investment opportunity for the investors. Whose beta is also lower than the beta coefficient of market (i.e. 1) it is less risky or defensive type of stock. Hence it is prescribed to select the C.S. of Nabil or the C.S. of banking industry for individual stock investment.
- ) The corporate firm should communicate the real financial statement value of assets and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.
- ) Stock market investment is a risky job as there is a chance of more return than that is expected, as well as there is also a chance of heavy loss. So, it should really only invest money in the stock market that is need for other commitments. The stock market is undoubtedly risky in the short term and investor needs to be prepared for it; private investor should try and work out their altitude toward of various investments. Strategies management should not take unfair advantage of their positions in the banks and they should manage the risk properly rather than repeat from it. Especially Nepalese companies seem poor in risk management. The concern management should have positive attitude towards risk.
- ) Further researchers should conduct the study on this topic and also include maximum number of samples. Further researchers should ask the board member what is the process by which the particular common stock decision is arrived? Some other variable also affects the market price of common stock, such as interest rates, political situation, global technological situations, and general economic conditions etc of the country further research showed also research on the effect of this parameters.



## **BIBLIOGRAPHY**

- ) Bhatt, G. P. (1995) Assessment of the Performance of the listed Companies in Nepal, Unpublished MBA thesis T.U. Kathmandu.**
- ) Bhatt, T.R. (2003), Risk and Return Analysis of Commercial Bank, Unpublished MBS Thesis Shankardev Campus, Kathmandu.**
- ) Bradford , F.A.(1995), Money and banking, New Yourk**
- ) Chandra, P.(1994),Finance Management,3<sup>rd</sup> edition New Delhi.**
- ) Cheney, J. M. and Moses, E. A (1982), Financial Market and Institutions, New Delhi**
- ) Dahal, N. K. (205), Risk and Return Analysis fin Common Stock investment, Unpublished MBA Thesis Shankar Dev Campus and Kathmandu.**
- ) Goetzmann, W. N. (1994), A introduction to investment Theory, Tata McGrraw Hill Publishing Company Ltd., New Delhi.**
- ) Goetzmann,W.N,(1999), Principle of Corporate Finance, Tata McGraw-hill Publishing Company Ltd., New Delhi.**
- ) James, L. and Doddd, P. (1985), Stock market theory and evidence, Richard. D. Irwn. Inc., USA**
- ) Joshi, P.R. (2001), Research Methodology, 1<sup>st</sup> edition, Buddha Academic Publisher and distributors Pvt. Ltd., Kathmandu.**
- ) Kerlinger, F.N.(1986), Fundamental Behaviour Research, Holt Rinehart and Winston, New York.**
- ) Kothari , C.R.(1984), Research Methodology: Method and Technique, Surjeet Publication, New Delhi.**

- J Laurence, G. (1985), Principles of Managerial Finance, Harper and Raw. Inc. New York.
- J Pandey, P. (2000), Risk and Return Analysis of common stock investment, Unpublished MBS Thesis Shankar Dev Campus , Kathmandu.
- J Pant, P.R.(1998), Field Work Assignment and Report Writing, Veena. Academic Enterprise, Kathmandu.
- J Pokhrel, N. (1999), Stock market doing pretty well, business Age, Oct-Nov:24-35.
- J Rouwenhorst, K. G. (1999), (1999), Local Return Factors and Turnover in Emerging Market, Journal of Finance , LiV(3): 1442-1442.
- J Santyal, M. P. (2002), Risk and return Analysis of listed company, Unpublished MBA thesis T.U. Kathmandu.
- J Sharpe, W.F., Alexander, G.J. and Bailey, G. (1982), Investment, Prentice Hall. Inc. USA.
- J Shrestha, M. K. (2037), Financial Management, curriculum development centre, T.U., Kathmandu.
- J Shreshta, K. M. and Manandhar, K. D. (1994), statistic and quantitative techniques for management, 2<sup>nd</sup> edition, valley Publishers, Kathmandu.
- J Shreshta, K.M. Poude, R.B. and Bhandari, D.P.(2003), Fundamental of investment, 1<sup>st</sup> edition, DEducational Publishers and Distributors, Kathmandu.
- J Shreshta, S. (2003), statistical Method in Management, Teleju Prakashan, Bhotahity, Kathmandu.
- J Shrestha, S and Silwal, D. P. (2001), Statistical Method in Management, Taleju Prakashan, Bhotahity, Kathmandu.

- ) Tuladhar, U. (2000), A study on the investment policy in Nepal, Nabin Prakashan, Kathmandu.**
- ) Upadhya, S. (2001), Risk and Return on Common Stock; Investment of Commercial Bank in Nepal, Unpublished MBA Thesis T. U. Kathmandu.**
- ) UNDP (2004), World Human Development report.**
- ) Van Horne, fJ.C. (1997), Financial Management and Policy, 9<sup>th</sup> edition, Prentice Halls of India, New Delhi.**
- ) Van Horne, J. C. and Wachowicz, J. (1995), Fundamental to Financial Management, Prentice Hall. Inc., USA.**
- ) Weston, J. F. and Brigham, E.F. (1996), Fundamental to Financial Management, Harcourt Asial Pvt. Ltd., new Delhi.**
- ) Wolff, H. K and Pant, P.R. (2000), A hand book for Social Science Research and Thesis Writing, 2<sup>nd</sup> edition, Buddha Academic Publisher and Distributors Pvt. Ltd. Kathmandu, Nepal.**

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



### Appendix No. 1

#### Calculation of beta ( ) coefficient of the common stock of HBL

Year	$R_j - R_j$	$R_m - R_m$	$(R_j - R_j)(R_m - R_m)$
2003/04	-	-	--
2004/05	-0.175	-0.4029	0.07051
2005/06	-0.1037	-0.1557	0.015146
2006/07	0.0037	0.0278	0.0001029
2007/08	0.094	0.2351	0.0221
2008/09	0.18	0.2936	0.05285
Total			0.1617

We have,

$$COV.(R_j R_m) = \frac{(R_j - R_j)(R_m - R_m)}{n-1} = \frac{0.1617}{5-1} = 0.41$$

$$B_j = \frac{Cov(R_j R_m)}{\sigma_m^2} = \frac{0.41}{0.082} = 0.5$$

Where,  $n$  = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of HBL Bank.

### Appendix No.2

#### Calculation of beta ( ) coefficient of the common stock of SCBNL

Year	$R_j - R_j$	$R_m - R_m$	$(R_j - R_j)(R_m - R_m)$
2002/03	-	-	-
2004/05	0.3563	-0.4029	0.1436
2005/06	0.1157	-0.1557	0.0180
2006/07	0.0052	0.0278	0.0001446
2007/08	0.2867	0.2351	0.0674
2008/09	-0.0513	0.2936	-0.01506
Total			0.1781

We have,

$$Cov.(R_j R_m) = \frac{(R_j - R_j)(R_m - R_m)}{n-1} = \frac{0.1781}{5-1} = 0.045$$

$$B_j = \frac{Cov(R_j R_m)}{\sigma_m^2} = \frac{0.045}{0.082}$$

$$= 0.5$$

Where,  $n$  = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of SCBNL Bank.

### Appendix No. 3

#### Calculation of beta ( $\beta$ ) coefficient of the common stock of Nabil

Year	$R_j - \bar{R}_j$	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2003/04	-	-	-
2004/05	-0.170	-0.4029	0.06849
2005/06	0.211	-.1557	0.03285
2006/07	.337	0.0278	0.0009369
2007/08	-0.265	0.2351	0.0623
2008/09	-0.113	0.2936	0.03318
Total			0.1523

We have,

$$\begin{aligned}
 \text{Cov.}(R_j R_m) &= \frac{(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{0.1523}{5-1} = 0.0381 \\
 \beta_j &= \frac{\text{Cov}(R_j R_m)}{\sigma_m^2} = \frac{0.0381}{0.082} \\
 &= 0.464
 \end{aligned}$$

Where,  $n$  = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of Nabil Bank.

#### Appendix No. 4

##### Calculation of beta ( ) coefficient of the common stock of SBI

Year	$R_j - R_j$	$R_m - R_m$	$(R_j - R_j)(R_m - R_m)$
2003/04	-	-	-
2004/05	-0.7327	-0.4029	0.2952
2005/06	-0.3441	-0.1557	0.05358
2006/07	0.2039	0.278	0.05668
2007/08	0.912	0.2351	0.2144
2008/09	1.4328	0.2936	0.421
Total			1.0405

We have,

$$\text{Cov.}(R_j R_m) = \frac{(R_j - R_j)(R_m - R_m)}{n-1} = \frac{1.0405}{5-1} = 0.260$$

$$B_j = \frac{\text{Cov}(R_j R_m)}{\sigma_m^2} = \frac{0.260}{0.082} = 3.17$$

Where,

$n$  = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of Nabil Bank.

#### Appendix No. 5

##### Calculation of beta ( ) coefficient of the common stock of EBL

Year	$R_j - R_j$	$R_m - R_m$	$(R_j - R_j)(R_m - R_m)$
2003/04	-	-	-
2004/05	-0.7898	-0.4029	0.31821
2005/06	0.0662	-0.1557	-0.01031
2006/07	0.2099	0.278	0.058352
2007/08	0.0543	0.2351	0.012766
2008/09	0.5679	0.2936	0.166735
Total			0.545757

We have,

$$\text{Cov.}(R_j R_m) = \frac{(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{0.545757}{5-1} = 0.1364$$

$$B_j = \frac{\text{Cov}(R_j R_m)}{\sigma_m^2} = \frac{0.13645}{0.082}$$

$$= 1.664$$

Where,

$n$  = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of EBL Bank

### Appendix No. 6

#### Calculation of beta ( ) coefficient of the common stock of NBBL

Year	$R_j - \bar{R}_j$	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2003/04	-	-	-
2004/05	1.2123	-0.4029	-0.48844
2005/06	-0.4964	-0.1557	0.077289
2006/07	-0.1798	0.278	-0.04998
2007/08	-0.1803	0.2351	-0.04239
2008/09	-0.3559	0.2936	-0.10449
Total			-0.60801

We have,

$$\text{Cov.}(R_j R_m) = \frac{(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{-60801}{5-1} = -0.1520$$

$$B_j = \frac{\text{Cov}(R_j R_m)}{\sigma_m^2} = \frac{-0.1520}{0.082}$$

$$= 1.85366$$

Where,

n = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of EBL Bank

### Appendix No. 7

#### Calculation of beta ( $\beta$ ) coefficient of the common stock of NIBL

Year	$R_j - \bar{R}_j$	$R_m - \bar{R}_m$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2003/2004	-	-	-
2004/2005	-0.49	-0.4029	0.197421
2005/2006	0.4418	-0.1557	-0.06879
2006/2007	0.1023	0.278	0.028439
2007/2008	0.232	0.2351	0.054543
2008/2009	0.126	0.2936	0.036994
Total			0.248609

We have,

$$\text{Cov.}(R_j, R_m) = \frac{(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1} = \frac{-0.248609}{5-1} = 0.06215$$

$$\beta_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{-0.06215}{0.082} = 0.75795$$

Where,

n = No. of Observations

$\sigma_m^2$  = Variance of market return

$R_j$  = Return of stock of EBL Bank

### Appendix No.8

#### Calculation of Correlation between HBL and SCBL

Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2004/2005	-0.175	-0.3563	0.06235
2005/2006	-0.1037	0.1157	-0.011998
2006/2007	0.0037	0.0052	0.00001924
2007/2008	0.094	0.2867	0.02695
2008/2009	0.18	-0.0513	-0.009234
Total			0.0681

We Have,

$$Cov.(R_A R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.0681}{5-1} = 0.017$$

Whereas,

$$P_{AB} = \frac{Cov(R_A R_B)}{\sigma_A \times \sigma_B} = \frac{0.017}{0.1441 \times 0.2373} = \frac{0.017}{0.0342} = 0.497$$

Where,

$P_{AB}$  = Correlation of return between HBL and SCBL

$\sigma_A$  = Standard deviation of HBL

$\sigma_B$  = Standard deviation of SCBL

### Appendix No-9

#### Calculation of Correlation between HBL and Nabil

Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2004/2005	-0.175	-0.170	0.02975
2005/2006	-0.1037	0.211	-0.0218807
2006/2007	0.0037	0.337	0.0012469
2007/2008	0.094	-0.265	-0.02491
2008/2009	0.18	-0.113	-0.02034
Total			0.03614

We have,

$$Cov.(R_A R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.03614}{5-1} = 0.009035$$

Whereas,

$$P_{AB} = \frac{Cov(R_A R_B)}{\sigma_A \times \sigma_B} = \frac{0.009035}{0.1441 \times 0.26} = \frac{0.009035}{0.037466} = 0.2411$$

Where,

$P_{AB}$  = Correlation of return between HBL and Nabil

$Cov.(R_A R_B)$  = Covariance between HBL and Nabil

$\sigma_A$  = Standard deviation of HBL

$\sigma_B$  = Standard deviation of Nabil

### Appendix No-10

#### Calculation of Correlation between HBL and SBI

Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2004/2005	-0.175	-0.863	0.1510
2005/2006	-0.1037	-0.474	0.04915
2006/2007	0.0037	0.074	0.00027
2007/2008	0.094	-0.04	-0.00376
2008/2009	0.18	1.303	0.23454
Total			0.43123

We have,

$$Cov.(R_A R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.43123}{5-1} = 0.1078$$

Whereas,

$$P_{AB} = \frac{Cov(R_A R_B)}{\sigma_A \times \sigma_B} = \frac{0.1078}{0.1441 \times 0.8177} = \frac{0.1078}{0.1178} = 0.9151$$

Where,

$P_{AB}$  = Correlation of return between HBL and SBI

$Cov.(R_A R_B)$  = Covariance between HBL and SBI

$\sigma_A$  = Standard deviation of HBL

$\sigma_B$  = Standard deviation of SBI

### Appendix No-11

#### Calculation of correlation between HBL and EBL

Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2004/2005	-0.175	-0.7898	0.1382
2005/2006	-0.1037	0.0662	-0.00686
2006/2007	0.0037	0.2099	0.00078
2007/2008	0.094	-0.0543	-0.005104
2008/2009	0.18	0.5679	0.102222
Total			0.229238

We have,

$$Cov.(R_A R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.229238}{5-1} = 0.05731$$

Whereas,

$$P_{AB} = \frac{\text{Cov}(R_A, R_B)}{\sigma_A \times \sigma_B} = \frac{0.05731}{0.1441 \times 0.4994} = \frac{0.05731}{0.07196}$$

$$= 0.79641$$

Where,

- $P_{AB}$  = Correlation of return between HBL and EBL  
 $\text{Cov.}(R_A, R_B)$  = Covariance between HBL and EBL  
 $\sigma_A$  = Standard deviation of HBL  
 $\sigma_B$  = Standard deviation of EBL

### Appendix No-12

#### Calculation of correlation between HBL and NBBL

Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2004/2005	-0.175	1.2123	-0.21215
2005/2006	-0.1037	-0.4964	0.05148
2006/2007	0.0037	-0.1798	-0.00067
2007/2008	0.094	-0.1803	-0.01695
2008/2009	0.18	-0.3559	-0.06406
Total			0.24235

We have,

$$\text{Cov.}(R_A, R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.24235}{5-1} = 0.06059$$

Whereas,

$$P_{AB} = \frac{\text{Cov}(R_A, R_B)}{\sigma_A \times \sigma_B} = \frac{0.06059}{0.1441 \times 0.6906} = \frac{0.06059}{0.09952}$$

$$= 0.60882$$

Where,



$P_{AB}$  = Correlation of return between HBL and NBBL

$Cov.(R_A R_B)$  = Covariance between HBL and NBBL

$A$  = Standard deviation of HBL

$B$  = Standard deviation of NBBL

### Appendix No-13

#### Calculation of correlation between HBL and NIBL

Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$
2004/2005	-0.175	-0.49	0.08575
2005/2006	-0.1037	0.4418	-0.04581
2006/2007	0.0037	0.1023	0.00038
2001/2008	0.094	0.232	0.02181
2008/2009	0.18	0.126	0.02268
Total			0.08481

We have,

$$Cov.(R_A R_B) = \frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n-1} = \frac{0.08481}{5-1} = 0.0212$$

Whereas,

$$P_{AB} = \frac{Cov(R_A R_B)}{A \times B} = \frac{0.0212}{0.1441 \times 0.3418} = \frac{0.0212}{0.04925}$$

$$= 0.4305$$

Where,

$P_{AB}$  = Correlation of return between HBL and NIBL

$Cov.(R_A R_B)$  = Covariance between HBL and NIBL

$A$  = Standard deviation of HBL

$B$  = Standard deviation of NIBL

### Appendix No-14

#### Calculation of Return, S.D. C.V of Banking Industry

Year	(BI)	$R = \frac{(B_t - B_{t-1})}{B_t}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remarks
2003/04	379.38	-	-	-	Base Year
2004/05	482.29	0.2713	0.223	0.04955	
2005/06	446.62	-0.07395	-0.025046	0.000627	
2006/07	422	-0.05513	-0.1040	0.01082	
2007/08	304.64	0.2781	-0.3270	0.1069	
2008/09	420.56	0.3805	0.3316	0.10996	
Total		0.24452		0.27785	

$$\text{Expected Return } (\bar{R}) = \frac{R}{N} = \frac{0.24452}{5} = 0.048904$$

$$\text{Standard Deviation } (S) = \sqrt{\frac{(\bar{R} - R)^2}{n-1}} = \sqrt{\frac{0.27785}{5-1}}$$

$$\text{Co-efficient of variation (C.V.)} = \frac{S}{\bar{R}} = \frac{0.2636}{0.048904} = 5.389$$

### Appendix No-15

#### Calculation of Return, S.D, Expected return and C.V. of Manufacturing and Processing industry

Year	(MP)	$R = \frac{(MP_t - MP_{t-1})}{MP_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remarks
2003/04	379.31	-	-	-	Base Year
2004/05	284.44	-0.1877	-0.17223	0.02966	
2005/06	250.13	-0.01189	0.00158	0.000024966	
2006/07	255.58	-0.02179	0.2314	0.05353	
2007/08	276.50	0.0815	0.09532	0.009085	
2008/09	284.35	0.02839	0.04186	0.001752	
Total		-0.06736		0.04585	

$$\text{Expected Return } (\bar{R}) = \frac{R}{N} = \frac{0.06736}{5} = 0.01347$$

$$\text{Standard deviation ( )} = \sqrt{\frac{(R-R)^2}{n-1}} = \sqrt{\frac{0.06736}{5-1}} = 0.1071$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard Deviation}}{\bar{R}} = \frac{0.1071}{0.01347} = 7.948$$

### Appendix No-16

#### Calculation of Return, S.D, Expected return and CV of Hotel Industry

Year	(HI)	$R = \frac{(H_t - H_{t-1})}{H_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remarks
2003/04	291.34	-	-	-	Base Year
2004/05	216.51	-0.2568	-0.190168	0.03674	
2005/06	169.68	-0.2163	-0.1512	0.02286	
2006/07	181.41	0.08681	-0.1040	0.02308	
2007/08	178	-0.03476	0.03036	0.000923	
2008/09	195	0.09551	0.16063	0.02580	
Total		-0.3255		0.1094	

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{N} = \frac{-0.3255}{5} = -0.06512$$

$$\text{Standard deviation ( )} = \sqrt{\frac{(R-R)^2}{n-1}} = \sqrt{\frac{0.1094}{5-1}} = 0.1654$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard Deviation}}{\bar{R}} = \frac{0.1654}{-0.06512} = -2.54$$

### Appendix No-17

#### Calculation of Return, S.D, Expected return and CV of Trading Industry

Year	(TI)	$R = \frac{T_t - T_{t-1}}{T_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remarks
2003/04	115.55	-	-	-	Base Year
2004/05	102.20	-0.1155	-0.1201	0.01442	
2005/06	95.56	-0.07476	-0.07936	0.006298	
2006/07	96.01	0.1533	-0.01073	0.0001151	
2007/08	123.20	0.02832	0.02372	0.0005626	
2008/09	144.10	0.1696	0.165	0.02723	
Total		0.02296		0.04862	

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{N} = \frac{0.02296}{5} = -0.0046$$

$$\text{Standard deviation } (S) = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{0.04862}{5-1}} = 0.1103$$

$$\text{Co-efficient of variation (C.V.)} = \frac{S}{\bar{R}} = \frac{0.1103}{-0.0046} = 2.3978$$

### Appendix No-18

#### Calculation of Return, S.D, Expected return and C.V. of finance and insurance industry

Year	(FII)	$R = \frac{FI_t - FI_{t-1}}{FI_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remarks
2003/04	318.67	-	-	-	Base year
2004/05	567.35	0.7804	0.61	0.3721	
2005/06	448.78	-0.2089	-0.3793	0.1439	
2006/07	433.61	-0.03380	-0.2042	0.04169	
2007/08	548.63	0.2653	0.0949	0.009006	
2008/09	575.42	0.04883	-0.12157	0.01478	
Total		0.8518		0.5815	

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{N} = \frac{0.8518}{5} = 0.1704$$

$$\text{Standard deviation ( )} = \sqrt{\frac{(R-\bar{R})^2}{n-1}} = \sqrt{\frac{0.3813}{5-1}}$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard deviation}}{\bar{R}} = \frac{0.3813}{0.1704} = 2.24$$

### Appendix No-19

#### Calculation of Return, S.D, Expected return and C.V. of Other Sectors

Year	(Os)	$R = \frac{O_t - O_{t-1}}{O_{t-1}}$	$(R - \bar{R})$	$(R - \bar{R})^2$	Remarks
2003/04	190.90	-	-	-	Base Year
2004/05	77.4	-0.59455	-1.06045	1.124559	
2005/06	48.56	-0.37261	-0.83851	0.703099	
2006/07	142.65	1.937603	1.471703	2.16591	
2007/08	347.65	1.437084	0.971184	0.943198	
2008/09	320.56	-0.07792	-0.54382	0.295744	
Total		2.329602		5.232509	

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{N} = \frac{2.3296}{5} = 0.4659$$

$$\text{Standard deviation ( )} = \sqrt{\frac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\frac{5.232509}{5-1}} = 1.1437$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\text{Standard deviation}}{\bar{R}} = \frac{1.1437}{0.4659} = 2.4548$$