

**A THESIS ON  
"RISK AND RETURN ANALYSIS OF  
COMMERCIAL BANKS"**



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## RECOMMENDATION

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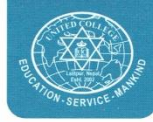
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### **Risk and Return Analysis of Commercial Banks**

and found the thesis to be the original work of the student and written according to the prescribed format, we recommend the thesis to be accepted as partial fulfillment of the requirement of Master's Degree of Business Studies (M.B.S.)

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## DECLARATION

I Hereby declare that this thesis work entitled “RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS” submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement of Master’s Degree of Business Studies (M.B.S) which is prepared under the supervision of respected supervisor *Prof. Dr. Bal Krishna Shrestha*.

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## AKNOWLEDGEMENT

This thesis work has been designed for the partial fulfillment of the requirement of Master's Degree of Business Studies (M.B.S) which has been prepared in accordance with T.U. syllabus prescribed for two years students. The main objective of the study is to analyze the risk and return of Commercial Banks.

I have done my best to present the data in a clear and systematic manner. I hope this thesis work will help potential investors, Security business persons, brokers and new comer of M.B.S. students.

It is not only the outcome of my sole effort but also the consequence of regular inspiration, help and advice of different scholars. This is a moment of great pleasure and privilege for me to exert my sincere gratitude to those scholars and friends who have helped me in different way for the completion of this study.

Firstly, I would like to express my sincere gratitude to our respected teachers for kind guidance, support and regular inspiration from the beginning of the study as well as in the course of the preparation of this thesis. In this juncture, I can not forget to thank those authors of the books studied in the course of completion of this thesis work.

Last but not least, I am highly obliged to all teachers of this college, my family and my friends who enthusiastically stretched their hands to support me for the successful completion of this thesis.

Thank You,  
Ganesh Man Bajracharya  
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## ABBREVIATIONS

AD	:	Anno Domini
ATM	:	Automated Tailor Machine
B.S.	:	Bikram Sambat
BOK	:	Bank of Kathmandu
CA	:	Current Assets
CB	:	Commercial Banks
CL	:	Current Liabilities
Co.	:	Company
Cov.	:	Covariance
CR	:	Current Ratio
CRR	:	Compulsory Reserve Ratio
CS	:	Common Stock
CV	:	Coefficient of Variation
D/Y	:	Dividend Yield
DP	:	Dividend Policy
DPR	:	Dividend Payout Ratio
DPS	:	Dividend per Share
E/Y	:	Earning Yield
EBL	:	Everest Bank Limited
EMH	:	Efficient Market Hypothesis
EPS	:	Earning Per Share
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
GDS	:	Gross Domestic Savings
HBL	:	Himalayan Bank Limited
IT	:	Information Technology
JVBs	:	Joint Venture Banks
Ltd	:	Limited
Misc.	:	Miscellaneous
MPS	:	Market Value Per Share
MV	:	Market Value
NEPSE	:	Nepal Stock Exchange Limited
NIBL	:	Nepal Investment Bank Limited
No.	:	Number
NPAT	:	Net Profit after Tax
NRB	:	Nepal Rastra Bank
NT	:	Not Taxable
NSBI	:	Nepal State Bank Of India
P/E Multiple	:	Price Earning Multiple
PNB	:	Pujab National Bank
PSA	:	Public Service Announcement
r	:	Coefficient of correlation
R&D	:	Research and Development
$r^2$	:	Coefficient of determination
RBB	:	Rastriya Banijya Bank
ROA	:	Return on Assets
ROE	:	Return on Equity
SBI	:	State Bank Of India
S.D.	:	Standard Deviation
SEBO	:	Security Board
SEBON	:	Securities Board of Nepal
SEC	:	Securities Exchange Centre
TU	:	Tribhuvan University
WA	:	Weighted Average

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Securities market is recognized as an effective way of raising capital for commercial enterprises, and at the same time providing an investment opportunity for individuals and institutions. The activities of buying and selling securities in the securities markets are extremely important for the efficient allocation of capital within economies. The securities market is a requisite for the sound development of an economy because it not only provides stable long-term capital for companies and an effective savings vehicle for the public, but also functions as an efficient tool for resource allocation. Securities market is an economic institute within which takes place the sale and purchase transactions of securities between subjects of the economy, on the basis of demand and supply. Also we can say that securities market is a system of interconnection between all participants (professional and nonprofessional) that provides effective conditions: to buy and sell securities, and also to attract new capital by means of issuance of new security. Mass participation in country's industrialization process is possible only through the efficient mechanism of securities markets as it promotes efficient collection of small and scattered savings from the investors and provides returns to them in the form of dividend. A developed securities market is the medium through which only productive firms that have better performance can easily raise capital. In other words, well-developed capital markets enable high-quality firms to increasingly finance themselves from securities (bond and equity) rather than from bank loans. This type of behavior of developed market enhances economic growth process by productivity growth.

Economic development depends upon development in the area of industrial, financial, agricultural and social services, which requires huge amount of investment. Financial sector is a medium through which scattered savings and invest able resources are converted into actual investment. Financial sector provides sufficient funds through issuing share capital, debt capital, granting short term and long-term loans. But the required knowledge towards the financial activities is lacking in our country. Even educated people do not know about financing and investing activities.

Obviously, the Nepalese economy depends on and predominated by agricultural sector. However, this sector is unable to accelerate the rapid economic growth as desired and targeted. This is due to lack of effective agricultural policies of government, modern way of cultivation and effective management of these sectors. A financial institution collects the funds in term of deposits and extends loan and advance to various sectors. The main sources of funds besides equities are saving and time deposit collection and issuance of debentures. The collected funds or sources are invested in those areas,

which are generally ignored by the commercial bank (i.e. housing finance, consumption loans etc.) Therefore finance company can be considered as complimentary to commercial banks. The financial institutions have great importance to the national economy. They are important part of the trade, commerce and industry, which collect different unused funds and mobilize it into needy sectors. In the last few years basically after the restoration of democracy (1990) in the country the government's move towards liberalization and privatization have paved the way for economic growth and the resultant effect has been positive. The continuing development has helped in establishing many banks, financial institutions and industries under joint venture arrangements.

In Nepal, the concept of financial institution was introduced when the first financial institution, Industrial Development Center was established in 1957. Later it was converted in Nepal Industrial Development Corporation in 1959 by special charter. Then after three financial institutions are established in 1992 under the company act 1964, they are NIDC Capital Market Ltd., Nepal Finance and Saving Co. Ltd., and National Finance Co. Ltd. Subsequently various financial intuitions are established after then. Due to change on economic policy of the nation and open economic policy of the government, the establishments of the financial institutions are increasing. And the people's participation in security investment and stock trading is increasing unexpectedly, even though the investors do not have enough knowledge to invest in security.

Economic prosperity is a function of banking development. Economic development is inevitable for the overall prosperity of the country. Well-developed banking system is the route for the economic prosperity. So, banking system is supposed to be the backbone of the nation, which supports for the establishment of industries, development and extension of national and international trade and mobilization of saving to the productive sectors. The number of joint venture banks has been increasing so is the investment volume and opportunity in various sectors that extends to agriculture, industry commercial and social sectors. Among all the banks, 30 commercial banks are listed in Nepal stock exchange till date, which claims the highest contribution on the market capitalization as compared to other sectors. As financial intermediary, the commercial banks also play an important role as fiscal policy implementing body for central bank. The monetary structure involves analysis of the behavior of banking system, so needs and importance of the commercial banks are increasing.

Now a day, each and every managerial decision-making is based on financial analysis. It covers the acquisition, utilization, control and administration of fund. "Managerial finance is an interesting, exciting and dynamic area of study. And its importance to the long run success of today's business is unquestioned" (Lawrence, 1985). Common stockholders are residual owners of the firm. In real, they're the real owners of the firm. They invest in the firm. That is why, they participate in the management and entitled to

all the profit left after all the liabilities or claims are satisfied. So, common stockholders have to bear all the risk relating to the business. Thus, common stock is the most risky security. “The rights and responsibilities attached to equity consist of positive considerations (income potential and control of the firm) and negative considerations (loss potential, legal responsibility, and personal liability) (Weston and Copeland, 1992:931).” Risk is the bitter truth of life, which is a product of future uncertainty and its magnitude depends upon the degree of variability in uncertain cash flow. Risk in fact, is an indication of chance of losing investment back. Interpretation of risk varies as per people’s attitude towards it, in real; risk is any unknown unfavorable event. In real, risk is any unknown unfavorable event. It is a chance of happening some or huge unfavorable even or danger of losing some materials value.

“Risk was defined as the variability of possible outcomes from that which was expected” (Van Horne, 1999:72). “Risk refers to the set of unique outcomes for a given even which can be assigned probabilities” (Khan and Jain, 1992). “Risk is like pornography, it’s hard to define, but you know it when you see it” (Van Horn and Wachowicz, 1986:89). An investor always wants high return but low risk which is totally impossible. Where there is high return, there is high risk and vice-versa. To earn more return, people invest their wealth in common stock thinking that they will get the entire residual amount as dividend. But their expected return may or may not be high in reality. So, it can be easily conclude that return is uncertain. This uncertainty is the major risk to investor in common stock investment.

“Every investment entails some degree of risk, it requires a present certain sacrifice for a future uncertain benefit” (Francis, 2000:11). “The return on investment is dividend plus, changes in market price of the share (MPS). It is expressed in percentage. Both of these items are uncertain. So, the actual return on investment in common stock may differ substantially from the expected return” (Malakar, 2001:32). “Return is the income received in investment. People invest their belongings with an expectation of getting some reward for leaving its liquidity. They only invest in those opportunities where they can get higher return. Hence, investor wants favorable return to be yield by its stock. And go for those, which yield more” (Upadhyya, 2001:25). “The expected rate of return for any asset is the weighted average rate of return using then probability of each rate of return as the weight” (Francis, 2000:11)

## **1.2 Statement of the Problem**

Recent trend shows that the general people are interested to invest their small money on the common stock of financial institutions like Commercial Banks. But due to the lack of proper information about market status and situation and poor knowledge, market intermediaries exploit investors. Some times they think that investing in common stocks is intolerably hazardous. Due to this, many investors afraid to invest into stocks, this is

the main problem that does not allow gearing up the capital market of the nation. The main problem for the individual investors are lack of proper information about market whereas the problem for financial sector to enhance the goodwill among the public due to frequent collapse of some finance companies being unable to utilize public funds properly. The investors are responsible to make rational investment decision. For this rational analytical knowledge is essential. The investor's attitude and perception also plays a vital role in rational decision regarding whether the investment should be made or not. In Nepal most of inventors invest their funds in a single security rather they can be benefited by investing in portfolio of securities and achieving diversification of risk. The main problem is that the general public cannot perfectly analyze the risk and return analysis of common stock of commercial banks in Nepal.

As the economic status and consciousness towards economic activities are very poor, development and growth of the capital market in Nepal is still in its infancy. Investors use their own guess and hunches to invest their wealth because they don't have any knowledge about financial assets and they also do not know to take decision to construct an ideal portfolio and to reach a profitable decision. Investors of Nepal invest their wealth on the basis of looking the past trends of stock prices; so, some times they have to face heavy losses. "People assume more risk in stock investment than its real risk. To boost confidence analysis in the field is a must. Unavailability of clear and simple techniques to analyze risk associated with return is also a constraint" (Upadhy, 2001:11).

Now, it become necessary to make polices, evaluate relative risk ness of decision and impact to general investors by the security business persons, security manager, and stockbrokers. Considering the above in mind, following problems are identified which are to be researched:

- How the investment decisions are to be taken?
- What are the factors affecting risk ness of the securities?
- What are the comparative risk positions of selected commercial banks?
- Does the risk and return of selected commercial banks vary significantly?
- What is the systematic risk position in relation to total risk?
- Would portfolio construction within the selected commercial banks be profitable?

Investment on common stock is the main sources of fund for the companies. The investors are the sources of revenue as a customer for the stockbrokers and financial institutions and ultimately they are the backbone of economic development of the nation. So every policy and plan of financial institutions and government also have to encourage them to invest on common stock. For this there is great need of such institutions, which can give valuable information that accelerates the stock investment and market efficiency.

### **1.3 Objectives of the Study**

The main objective of the study is to analyze the risk and return of common stock investment of listed companies i.e. commercial banks. The specific objectives are as follows:

- To analyze the volatility of different stock and other relevant variable that should be considered while deciding investment in stock.
- To evaluate common stock of selected listed companies i.e. Commercial Banks in terms of risk and return to perform sector wise comparison on the basis of market capitalization.
- To calculate and analyze the risk and return of different portfolio.
- To provide suggestions, some practical ideas and recommendations based on the analysis of the data.

### **1.4 Significance of the Study**

Open economic policy of the government encouraged the establishment of the financial institution. As result the people's participation in security investment and stock trading is increasing unexpectedly. The recent trend and people's attitude towards common stock investment shows that there is a high potentiality in stock investment, which results an increase in economic activity. It is important to increase financial and economic activities of the nation. Thus this study has tried to fulfill the need in this aspect. The study may also help for interested management. A part from above, this study will be a matter of interest for academicians, students and practitioners.

The focus of the study is on the analysis of risk and return, which will enable all the related persons to guide the investment related activities. Benefits of the study will receive primarily by potential investors. Security business persons, issue manager, broker and marketing managers will also be benefited by this study.

### **1.5 Limitations of the Study**

This study explains and analyzes the subject matter with help of well known or already established analytical methods and techniques, therefore as a conclusion oriented research, it does not concern with fundamental and decision oriented research. Considering the above matter, following are the limitations of the study.

- It only focuses on selected listed companies covering the period of last seven years.
- This study is mainly based on published secondary data.
- This study only concerns with the risk and return of selected listed companies i.e. commercial banks.

- Secondary data gathered from related sources has been used. The reliability depends on it.
- Only risk and return of common stock would be analyzed.
- In this study basic source of data has been taken from Annual Reports of Banks and NEPSE reports.
- The truth of the research result is based upon the available data from the NEPSE and other sources.

## **1.6 Organization of the Study**

The study is divided into five chapters as follows:

### **Chapter 1: Introduction**

In this chapter, background of study, introduction of the study, objectives of the study, significances of the study, limitations of the study and origination of the study has been explore separately and details information has been presented.

### **Chapter 2: Review of Literature**

This chapter devoted for the brief review of literature available. Review from books, journals (articles), thesis etc are included in this chapter. Conceptual framework about risk and return is briefly reviewed.

### **Chapter 3: Research Methodology**

This unit presents methodology used in the study. It consists of research design, population sample, sources of data, tools and technique for analysis and method of presentation of analysis.

### **Chapter 4: Data Presentation and Analysis**

In this chapter, data collected from various relevant sources is presented and analyzed using various statistical and non-statistical methods and major findings of the study has been briefed separately.

### **Chapter 5: Summary, Conclusion and Recommendations**

The fifth chapter presents the summary and conclusion of the study based on the analysis of data and there after the researcher's conclusion and recommendations has been shown and explained.

Similarly, recommendation, viva-voce sheet, declaration, table of content, table of list and figure, abbreviation are presented at the front part of the study. After all, the bibliography and appendices are included at the end.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

In terms of a literature review, “the literature” means the work we consulted in order to understand and investigate our research problem. “Review” is a process of systematic, meticulous, and critical summary of the published literature in our field of research. The previous studies cannot be ignored because they provide the foundation to the present study and provide us with a handy guide to a particular topic. 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. The primary purpose of literature review are: to learn how others have defined and measured key concepts, to identify data sources that other researchers have used to potential relationships between concepts and to identify researchable hypothesis. The literature survey also provides the foundation for developing a comprehensive theoretical framework from which hypothesis can be developed for testing. The literature survey also minimize the risk of pursuing dead-ends in research. Another advantage of reviewing the literature applies to design phase of our project. A proper literature review can also save considerable time by building on what is already known as well as using tested methodology including instruments.

The chapter review of literature includes the review of concept and finding of previous research on the same field. Books, journals and unpublished thesis are reviewed for this purpose. In this regard, basic academic course book on finance, recently published books specially related to this topic, some of the major research based journals and the related studies are reviewed.

There is no any special book and research work about the topic “Risk and Return analysis of common stock”, and we do not have sufficient required journals and relevant books. Some master degree thesis is available in Tribhuvan University, which are related to this topic to some extent. These are also reviewed to the extent they found related. In addition, independent studies carried out by well-known Nepalese financial experts are also taken into consideration.

#### **2.1 Conceptual Framework**

Investment decisions are influenced by various motives. Some people invest in a business to acquire control and enjoy the prestige associated with it. Most investor, however, are largely guided by the pecuniary motive of earning a return on their investment. The main focus of finance is trade off between risk and return. Here, the focus is its implication in the investment of common stock.

In general, risk and return go hand in hand. For earning returns investors have to almost invariably bear some risk. While investors like returns they avoid risk. Investment

decisions, therefore, involve a tradeoff between risk and return. Since, risk and return are central point while making investment decision; we must clearly understand what risk and return are and how they should be measured.

“Risk and return are most important concepts in finance. In fact, they are foundation of the modern finance theory” (Pandey, 1997). What is risk? How is it measured? What is return? How is it measured? , are the basic question, which needs to be answered while making an investment decision. In this chapter, an attempt is made to answer the logic of portfolio theory and the use of Capital Asset Pricing Model (CAPM) for valuing assets with a view to facilitate the investment decision.

### **2.1.1 Common Stock**

Common stock represents equity, or an ownership position in a corporation. It is a residual claim, in the sense that creditors and preferred stockholders must be paid as scheduled before common stockholder can receive any payments. In bankruptcy common stockholders are, in principal, entitled to any value remaining after all other claims have been satisfied. The great advantage of the corporate form of organization is the limited liability of its owners. Common stocks are generally ‘fully paid and non-assessable’; meaning that common stockholder may lose their initial investment but not more than that. That is if the corporation fails to meet its obligations, the stockholders cannot be forced to give the corporation the funds that are needed to pay off the obligations. However, as a result of such failure it is result of such failure it is possible that the value of a corporation’s share will be negligible. This will result in the stockholders having lost an amount equal to the price previously paid to buy the shares.

### **2.1.2 Return on Common Stock**

The cash payoffs to owners of common stocks are of two kinds:

- i. Cash dividend
- ii. Capital gain (loss)

As per Brealey and Myers, “If current price of a share is  $P_0$  that the expected price at the end of a year is  $P_1$  and that the expected dividend per share is  $Div_1$ . The rate of return that investors expect from this share over the next year is defined as the expected dividend per share  $Div_1$  plus the expected price appreciation per share  $P_1 - P_0$  all divided by the price at the start of the year  $P_0$  which can be shown in the form of:

$$\text{Expected return} = R = \frac{Div_1 + P_1 - P_0}{P_0}$$

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 divided by the beginning price. Thus, the return comes from two sources: income and price appreciation (Barely and Myers, 1994:84).

For common stock, we may define single-period return as:

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

Where,

R = Actual/expected return

t = Particular time period in the past (future).

D<sub>t</sub> = Stocks price at time period t.

P<sub>t-1</sub> = Stocks price at time period t-1.

The above mentioned formulae can be used to find out both actual single-period return (when based on historical data) as well as expected single period return (when based on future expected dividends and prices).

(The term in the parenthesis in the numerator of above equation represents the capital gain or loss during the period.)

“Holding period return measure mentioned above is useful with an investment horizon of one year or less. For longer periods, it is better to calculate rate of return as an investment yield. The yield calculation is presented value-based and this considers the time value of money” (Barely and Myers, 1994).

Return is defined as the divided yield plus the capital gain or loss. The relationship between different levels of return on their relative frequencies is called a probability distribution. We could formulate a probability distribution for the relative frequency of a firm’s annual return by analyzing its historical return over the previous year. But we know that history never repeats itself exactly. Hence, after analyzing relative frequencies of historical return for the individual company, we can form a probability distribution based on historical data plus the analysis for the outlook for the economy and the outlook for the industry, the outlook for the firm in its industry and another factors” (Barely and Myers, 1994).

### **2.1.3 The Risk on Common Stock**

Risk is defined in Webster’s dictionary as ‘a hazard: a peril: exposure to loss or injury’, thus for most, risk refers to the chance that some unfavorable event will occur. If you invest in speculative stock (or, really, any stock), you are taking a risk in the hope of making an appreciable return” (Weston and Brigham, 1995:182-183).

"Most people view risk in the manner we just described a chance of loss. In reality, risk occurs when we cannot be certain about the outcome of a particular activity or event, so we are not sure what will occur in the future. Consequently, risk result from the fact that an action such is investing can produce more than one outcome in the future. To illustrate the risk ness of financial assets, suppose someone has a large amount of money to invest for one year. Someone could buy a Treasury security that has an expected return equal to 8 percent. The rate of return expected from this investment can be determined quite precisely, because the chances of the government defaulting on treasury securities is negligible; the outcome essentially is guaranteed, which means this is a risk-free investment. On the other hand, someone could buy the common stock of a newly formed company that has developed technology to extract petroleum from the mountains in South America without defacing the landscape and without harming the ecology. The technology has yet to be proven economically feasible, so it is not known what returns the common stockholders will receive in the future. Experts who have analyzed the common stock of the company have determined that the expected or average long-run return for such an investment is 30 present each year, the investment could yield a positive return as high as 900 percent, but there is also the possibility that the company will not survive, in which case the entire investment will be lost, so the return will be 100 percent. Here the investors receive return each year cannot be determined precisely because more than one outcome is possible. This is a risky investment, because there is a significant danger of actual earning considerably less than the expected return. Investors probably would consider the stock to be quite risky. But there is also very good chance the actual return will be greater than expected, which, of course is an outcome we gladly accept. So, when we think of investment risk, along with the chance of actually receiving less than expected, we should consider the chance of actually receiving more than expected. If we consider investment risk form this perspective, then we can define risk as the chance of receiving as actual return other than expected, which simply means, there is variability in the returns or outcomes from the investment. Therefore, investment risk can be measured by the variability of the investments returns. However, we can define risk more precisely, and it is useful to do so" (Weston and Brigham, 1995:182-183).

Different people interpret uncertainties and risks in different ways. For some, uncertainly is simply a lack of definite outcome; it is anything that could happen any unknown event, which may be favorable or unfavorable. To other, it is a risk, many people consider risk as a chance of happening some unfavorable event or danger or losing some value. The trouble of uncertainty are risk, people often use them interchangeably.

Although the meaning of these two terms may differ, authorities in the field of finance and people concern about finance do agree that the risk is the outcome of uncertainty. If we agree to interpret certainty as a future outcome, which is a hundred percent sure to happen, then uncertainly is nothing but just the opposite of certainty that refers to all

possible future outcomes none of which is known for sure to happen. On the other hand, risk is the outcome of all potential future outcomes presented with probability associated with each of them and it is measured in terms of the degree of variability in the probability distribution of each outcome.

In the case of financial analysis, definitely, risk and uncertainty are treated separately. The practice is to translate the uncertainty into mathematical value, which denotes the best estimate of all uncertainty values. In other words, uncertainty is taken care by calculating the expected value of all possible uncertain outcomes. However, risk is treated differently. Although uncertainty is the root cause of risk, its magnitude depends upon the degree of variability in uncertain cash flows, and it is measured in terms of standard deviation. In project analysis, risk, in fact is an indication of chance of losing investment value. The word chance refers to the probability of loss in the investment project, here. In other words, the project risk indicates the probability of return being less than the expected value-higher the probability of such loss and less return higher the project risk.

Risk is the unlooked for the unwanted event in the future, someone had said that risk was the sugar and salt of the life. "Risk, defined most generally, is the probability of the occurrence of unfavorable outcomes. But risk has different meaning in different contexts. In our context, two measures developed from the probability distribution have been based as initial measures of return and risk. They are the mean and standard deviation of the probability distribution" (Weston and Brigham, 1995:182-183)

Being a complicated subject, risk needs to be properly analyzed. The relationship between risk and return is described by investors' perception about risk and their demand for compensation. No investor will like to invest in risky assets unless he/she is assured of adequate compensation of the assumption of risk. Therefore, it is the investors' required risk premium that establishes a link between risk and return. In a market dominated by rational investors, required risk premium that establishes a link between risk and return. In a market dominated by rational investors, higher risk will command by rational premium and the trade-off between the two assumes a linear relationship between risk and risk premium.

## **2.2 Review of Books**

On the topic of book review, here we consider some books for literature review and to get sound knowledge about subject matter of investment analysis, portfolio, CAMP, SML which are concerned about the analysis of risk and return of market as well as individual assets including common stocks.

## **Portfolio Analysis**

In the book “Investments: Analysis and Management”, Francis, Jack Clark writes that very broadly the investment process consists of two tasks. The first task is security analysis, which focuses on assessing the risk and return characteristics of the available investment vehicles. The second task is portfolio selection, which involves choosing the best possible portfolio from the set of feasible portfolios. A portfolio is a combination of investment assets. The portfolio is the holding of security and investment in financial assets i.e. bond, stock. Portfolio management is related to the efficient portfolio investment in financial assets (Francis, 2000). “The process of adding securities to a portfolio in order to reduce the portfolio management is related to the efficient portfolio investment in financial assets (Francis, 2000). “The process of adding securities to a portfolio in order to reduce the portfolio’s unique risk and thereby, the portfolio’s total risk is called diversification” (Francis, 2000:399). The objective of portfolio analysis is to reduce risk. By combining securities of low risks with securities of high risks, success can be achieved by an investor in making a choice of investment outlets. Combination of securities can be made in many ways. Francis, Jack Clark has focused on the different portfolio approaches or forms of diversification, which areas follow:

### **Simple Diversification (Naive or Random Diversification)**

Simple diversification can be defined as “not putting all the eggs in one basket” or “spreading the risks”. The simple diversification would be able to reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be added to a portfolio. It reduces a portfolio’s total diversifiable risk to zero and only the undiversifiable risk remains. So this approach assumes that an investor can expect a reasonable return for a given level of risk (Francis, 2000).

### **Superfluous Diversification (Over Diversification)**

It refers to the investor spreading himself in so investments on his portfolio. The investor finds it impossible to manage the assets on his portfolio because the management of a large number of assets requires knowledge of the liquidity of each investment, return; tax liability and this will become impossible without specialized knowledge. He also finds it both difficult and expensive to look after a large number of investments. If the plans to switch over investments often selling and buying assets expecting a high rate of return, he involves himself in high transaction costs and more money will be spent in managing superfluous diversification. It will be very difficult for him to measure the return on each of his investments. All those problems may result in inadequate return.

## **Diversification across Industries**

Some investment counselors advocate selecting securities from different industries to achieve better diversification. It is certainly better to follow this advice than to select all the securities in a portfolio from one industry.

## **Simply Diversification across Quality Rating Categories**

Simply Diversification reduces risk within categories of stocks that all have the same quality rating.

## **Assets Allocation**

Francis, Jack Clark writes, assets allocation decisions deal with attaining the optimal proportions of investment from different assets categories. Portfolio manager focuses primarily on the stock-bond mix, the decision often boils down to trying to determine the best long-run stock-bond distribution.

## **Portfolio Analysis with Negative Weights**

If an asset has a negative weight, two economic interpretations are possible. First, a negative weight can be used to represent a short sale. Second a negative weight may indicate that the investor created a leveraged (borrowed, or margined) portfolio by selling (issuing) a security that has the same risk and return statistics as the asset with the negative weight (Francis, 2000:400).

He has fixed the following primary and secondary objectives of the portfolio analysis:

1. Primary objectives
  - a. To maximize return
  - b. To minimize risk
2. Secondary objectives
  - a. Regular returns
  - b. Stable income
  - c. Appreciation of capital
  - d. Ever liquidity
  - e. Easy marketability
  - e. Safety of investment
  - f. Tax benefits

In another book, “Financial Management” I.M. Pandey also reviewed here. He writes - “The portfolio theory provides a normative approach to the investors’ decision to investment in assets or securities under risk” (Pandey, 1997:329). It is based on the assumption that investors are risk-averse. This implies that investors hold well-diversified portfolios instead of investing their wealth in a single assets or security. A portfolio is a bundle or combination of individual assets or securities. If investor holds a well-diversified portfolio, then his concern should be the expected return and risk of

portfolio rather than individual assets or securities. The second assumption of the portfolio theory, according to him, is that returns of securities are normally distributed. This means that the mean (the expected value) and variance (or standard deviation) analysis is the foundation of the portfolio decisions.

### **Markowitz's Diversification**

Portfolio theory, originally proposed by Harry Markowitz in the 1950s, was the first formal attempt to qualify the risk of portfolio and develops a methodology for determining the optimal portfolio. Prior to the development of portfolio theory, investors somewhat loosely deals with the concepts of return and risk. Intuitively smart investors knew the benefit of diversification, which is reflected in the tradition adage: "Do not put all your eggs in one basket." Harry Markowitz was the first person to show quantitatively why and how diversification reduces risk. Markowitz diversification is combining the assets, which are less than perfect positively correlated in order to reduce portfolio risk. It can sometimes reduce the risk below the undiversifiable level. Markowitz's diversification is more analytical than simple diversification and consider asset's correlation (or covariance). The lower the correlation between assets, the more the Markowitz diversification will be able to reduce the portfolio's risk.

### **Capital Asset Pricing Model (CAPM)**

In the book "Investment Analysis and Portfolio Management", written by Prasanna Chandra has focused on Capital Asset Pricing Model. "The CAPM predicts the relationship between the risk of an assets and its expected return. The relationship is very useful in the ways. First, it produces a benchmark for evaluating various investments. For example, when we are analyzing a security we are interested in knowing whether the expected return from it is security we are interested in knowing whether the expected return from it is in line with its fair return as per the CAPM. Second, it helps us to make an informed guess about the return that can be expected from an asset that has not yet been traded in the market. For example, how should a firm price its initial public offering of stock? Although the empirical evidence on the CAPM is mixed, it is widely used because of the valuable insight it offers and its accuracy is deemed satisfactory for most practical applications" (Chandra, 2002:240-245).

P. Chandra presents the following basic assumptions of CAPM.

- Individuals are risk averse.
- Individuals seek to maximize the expected utility of their portfolio over a single period planning horizon.

- Individuals have homogeneous expectation. They have identical subjective estimates of the means, variances, and covariance among returns.
- Individuals can borrow and lend freely at riskless rate of interest.
- The market is perfect, there are no taxes, and there are no transaction costs, securities are completely divisible, the market is competitive.
- The quality of risk securities in the market is given.

Looking at these assumptions, one may feel that the CAPM is unrealistic. However, the value of a model depends not on the realism of its assumption, but on the validity of its conclusions. Extensive empirical analysis suggests that the conclusions of the CAPM are reasonable valid.

The relevant risk for an individual asset is systematic risk (or market-related risk) because non-market risk can be eliminated by diversification. The relationship between an asset's return and its systematic risk can be expressed by the CAPM. The equation for the CAPM is:

$$E(r_i) = R_f + [E(r_m) - R_f] b_i$$

Where,

$E(r_i)$  = expected return for an assets

$R_f$  = the risk-free rate (usually assumed to be a short-term T-bill rate)

$E(r_m)$  = the expected return of market

$b_i$  = the assets' beta

### **Security Market Line (SML)**

The Security market line (SML) is a graphic presentation of CAPM. It is a straight line that reflects the required rate of return from a security for each given level of non-diversifiable risk (beta coefficient). In market equilibrium, all securities lie on the SML. Therefore, the SML has asset-pricing implication for both portfolios and individual securities. The securities lying above SML is said to be underpriced as it indicates that the rate of return from the security is greater than what is required to compensate for systematic risk associated with the security. Similarly all securities lying below SML is considered to be overpriced as it fails to give sufficient rate of return to compensate against the systematic risk of the security. On the basis of this asset-pricing implication shown by SML, Investors prefer to buy all underpriced securities and sell overpriced securities.

The logic of the SML or CAPM equation is that the required return on any investment is the risk-free return plus a risk adjustment factor. The risk adjustment factor is

simply the risk premium requires for market return,  $[E(R_m)-R_f]$ , multiplied by the riskiness of the individual security,  $b_i$ . As per Prasanna Chandra, “There is a linear relationship between expected return and covariance of securities with the market portfolio” (Chandra, 2002:245).

This relationship, called the security market line (SML), is as follows:

$$E(r_i) = \left( \frac{R_f + [E(r_m) - R_f]}{\sigma_m^2} \right) C_{im}$$

Where,

$E(r_i)$  = Expected return for on security ‘i’

$R_f$  = The risk-free return

$E(R_m)$  = The expected return on market portfolio

$\sigma_m^2$  = Variance of return on market portfolio

$C_{im}$  = Covariance of return between security ‘i’ and market portfolio

In words, the SML relationship says:

Expected return on security ‘i’ = Risk free return + (Price per unit of risk) Risk

$$\begin{aligned} \text{The price per unit of risk} &= \frac{E(r_m) - R_f}{\sigma_m^2} \\ \text{The measure of risk} &= C_{im} \end{aligned}$$

In above SLM equation, the risk of a security is expressed in terms of its covariance with the market portfolio,  $im$ .

Can we find a standardized measure of risk? Fortunately we can find a standardized measure of systematic risk, popularly called beta ( $b_i$ ), by taking advantage of the relationship.

$$b_i = \frac{C_{im}}{\sigma_m^2}$$

Which reflects the slope of a linear regression relationship in which the return on security I is regressed on the return of the market portfolio. Thus, the SML is popularly expressed as:

$$E(R_i) = R_f + [E(R_m) - R_f] b_i$$

In words, the SML relationship says:

Expected return on security  $i$  = Risk-free return + Market risk premium  $\times$  Beta of security.

Thus, we can say that the CAPM and the Security Market Line (SML) is same. It means that CAPM is also called the SML.

### **Securities Market Indicators**

Security market indicators are of two basic type-average and indexes. A stock market average is merely a weighted or unweighted average price for group of stock. Stock market indexes typically employ more defined methods to measure the level in stock prices than do stock market averages.

“Index numbers are void of rupee values or other units of measure. Stock market indexes are usually calculated as ratios of rupee values. They are pure numbers that are used for making comparison between indexes, averages or other numbers. An index is usually a weighted average ratio that is calculated from an average of a large number of different stocks” (Thapa, 2002). The index numbers are typically a time series constructed from the same base value (which is usually set to be 100, 10, or 1). Some year in the past is selected as the base year from which the index’s base value is calculated in order to impart a time perspective to the index.

### **2.3 Review of Previous Research Work**

There are some studies related to the topic “Risk & Return” had been conducted as a thesis for the partial fulfillment of master’s degree in T.U., which are reviewed here.

**Bhattraï (2011)** conducted on “*Risk and Return Analysis of Common Stock of Commercial Banks of Nepal.*”

#### **His Major objectives:**

- To study and analyze the risk and return of a common stock investment.
- To find overpriced, under priced and equilibrium priced of common stock of commercial banks.
- To analyze the risk and return relationship of individual stock with that of market.
- To identify the covariance and correlation between the return of common stock of commercial banks.

- To calculate and analyze the risk and return of different portfolio.
- To study and analyze the Beta- coefficient.
- To constructs on optimum portfolio.

**His Major findings:**

- Nepalese investor has some experience of investing in stock.
- Most of the Nepalese investor prefer to invest in Banking sector.
- Most of the investor are moderately risk taker.
- The main objective of the investment is to grow income level.
- Many of the investor equally focused on risk and return.
- Almost all of the investors create portfolio in order to minimized risk.
- Almost all of the investor has borrowed the fund in order to invest in stock.

**Sapkota (2010)** on *"Risk and Return Analysis and Optimal Portfolio Creation of Common Stock Investment (With References to SBI, NABIL, BOK, NIC, EBL and SCBL)"*.

**The main and basic objectives of the study:**

- To find out the condition of risk and return analysis of common stock investment and suggestion how to create a optimal portfolio among the selected commercial banks.
- To analyze risk and return of investment in common stock of commercial bank.
- To determine relation of each bank with the industry index.
- To explain portion of systematic risk and unsystematic risk from the total risk.
- To evaluate common stock's price under CAPM method.
- To analyze how to create optimal portfolio combination using selected commercial banks.
- To shows the current market movement, banking index movement and selected sample banks price movement in trend line.

**Major findings of the study:**

- BOK's Common Stock is yielding the highest Expected rate of return with 87.42%. Whereas it is the Lowest 57.40% in case of EBL. The other banks rates of return are 80.13%, 76.29%, 73.58% and 72.84% of NABIL, NIC, SCBL and SBI respectively.
- NABIL's Common Stock consists of the highest 81.82% risk, whereas EBL's Stock is least risky as is consist of only 37.17% risk and BOK, SBI, NIC and SCBL risk is 75.87%, 66.89%, 56.42% and 50.38% of respectively. Coefficient

of Variation Analysis it is resulted that there is highest risk beard by investor in NABIL where for per unit return, risk is 1.02 whereas it is the lowest for EBL.

- All Banks have Unsystematic risk which Risk can be diversifiable. The highest USR 99.87% at total risk Common Stock of SBI Bank, whereas the lowest USR for EBL i.e. 42.10.

BOK's Stock is aggressive i.e. market sensitive, to the market changes as evaluated by the highest beta coefficient of 1.25, whereas it is lowest 0.0582 in case of SBI, The other Banks beta are 0.7346, 6968, 0.6932 and 0.5983 at NIC, SCBLK, EBL and NABIL respectively.

**Shakya (2009)** conducted on *“Risk and Return Analysis of the Commercial Banks”*

#### **His Main Objectives:**

According to his studies the main objectives are to determine whether the shares of commercial banks are correctly priced or not analyzing the required rate of return using the capital Assets pricing model (CAPM) & to identify the qualitative factors that are inhibiting NEPSE.

#### **His Major Findings:**

- In Nepalese capital market, the contribution of the real sector is negligible. Banking & financial sector occupy majority of pie in terms of capitalization & turnover.
- Most of the listed companies rarely publish their financial statement comprehensively with in a specified time frame.
- The common stock of Bangladesh Bank offer highest realized rate of return & Nepal Arab Banks the lowest. On the basis of coefficient of variation, which measure risk per unit of stock individually, Bank of Kathmandu has the lowest & Arab Bank has the highest one.
- The negative correlation coefficient of Arab Banks reveals that the return on the bank goes down if the market return goes up. The rest of the shares move in the direction the markets moves. As beta coefficient shows, common stock of Bank of Kathmandu is most volatile & common stock of Nepal Arab Bank is the least volatile.
- As the average rate of return is more than the required rate of return, common stock of all Banks are under priced expect the Nepal Arab Bank Ltd. Which have less required rate of return in comparison with average rate of return.

**Khadka (2008)** in his study “*Analysis of Risk and Return on Selected Nepalese Commercial Banks listed in NEPSE*” with special reference to 7 listed commercial banks is also relevant to this study.

**Main objective of the study:**

To analyze the risk, return and other relevant variables that help in making decision about investment on securities of the listed commercial banks. This study will also target to determine whether the share of commercial banks are correctly priced or not by analyzing the required rate of return using the CAPM.

**His Main Findings:**

- In risk return behavior from the analysis of different stock The share of Bangladesh Bank offered highest realized rate or return.
- Amongst them NABIL bank is the lowest having 5.23% which is less than required rate or return.
- NBL, which is hard hit by the events (Return = -0.8809), the ranking of the bank is placed as the highest return earner.
- The realized rate or returns of the samples banks do not have the same features being within the range of 5.23% to 16.12%. Return on the average stock is 5.51% over the period. All the shares under review generated higher rate of return than the market portfolio except NABIL Bank Ltd.
- The price of shares of banks under review except NABIL Bank Ltd. is under priced.
- The unsystematic risk of NBL is the highest one amongst the shares under review which is 95.59% and SCB of Nepal has the lowest one being 45.14%.
- The negative correlation coefficient of NBL (-0.21) revealed that the return on the bank goes down if the market goes up.

**His Conclusions:**

- In Nepalese capital market, the contribution of real sector is negligible.
- The shares of commercial Banks of Nepal are heavily traded in NEPSE, none of the share NABIL Bank will have positive trend towards the equilibrium.

**Shakya (2007)**, "*Analysis of Risk & Return and application of SML on common stock commercial bank in Nepal.*" In this study she has taken three banks as a sample size from listed commercial banks of NEPSE

**His main objectives:**

- To analyze the risk, return and other relevant variable that help in making decision about investment on securities of the commercial bank.
- To analyze and awareness of individual investors regarding common stock investment.
- To solve the SML (Security Market line) and to analyze whether the stock is under priced or overpriced
- To show the security characteristics line (SCL) of individual stock.

**His Major Findings:**

- 30.12% respectively, Return is an income received by investors for bearing risk within the stock. Expected return on common stock of NBB has the highest with 0.4705 i.e. 47.05%, SCBL and NABIL bank has the expected return of 39.02%. 2. Where there is return, there will be risk also. Common stock of NBB is most risky with standard deviation of 0.5542 whereas NABIL bank has standard deviation of 0.6162.
- C.V. Measures the risk in unitary basis that means it shows how many unit of risk should be bear to gain one unit if return. In terms of C.V. SCBL has lowest C.V. i.e. 1.4203 and highest in NABIL bank with 0.0458.
- Among the three stock, NBB's stock is more volatile having beta of 2.1785 and least volatile stock is SCBL's stock with 1.2142 beta co-efficient. In fact all of them are volatile than the market portfolio or aggressive stock having beta greater than 1.
- All three stock are under priced having greater s. D. i.e. 0.5045 and lowest S.D. in trading sector with 0.0833.
- Among the sectors, banking sector is more volatile with market having highest beta with 1.0728 and the stock of trading sector is defensive having lowest beta with 0.0372. After banking sector, other sector has the maximum beta with 0.7201
- Nepalese stock market is in the emerging stage in our country. Nepalese investors are not able to analyze the securities as well as market properly due to lack of information and poor knowledge on common stock.

**Tamang (2003)**, on “*Risk & Return Analysis of Commercial Banks in Nepal*” is conducted by taking eight commercial Banks as sample, analytical tools like rate of return, standard deviation, c.v., Beta coefficient are used. According to his studies the main objectives are to determine whether the shares of commercial banks are correctly priced or not analyzing the required rate of return using the capital Assets pricing model (CAPM) & to identify the qualitative factors that are inhibiting NEPSE. Similarly the some of his major findings are as follows:

- In Nepalese capital market, the contribution of the real sector is negligible. Banking & financial sector occupy majority of pie in terms of capitalization & turn over.
- Most of the listed companies rarely publish their financial statement comprehensively with in a specified time frame.
- The negative correlation coefficient of Arab Banks reveals that the return on the bank goes down if the market return goes up. The rest of the shares move in the direction the markets moves. As beta coefficient shows, common stock of Bank of Kathmandu is most volatile & common stock of Nepal Arab Bank is the least volatile.
- As the average rate of return is more than the required rate of return, common stock of all Banks are under priced expect the Nepal Arab Bank Ltd. Which have less required rate of return in comparison with average rate of return.

## **2.4 Research Gap**

Keeping the view of the many research have been made by the researcher with the topic of comparative risk and return analysis of the two joint venture commercial banks. Some case studies have been based on presenting the risk portfolio of solo commercial bank which is not sufficient to extract the optimal conclusion of the study.

With keeping the view of the above studies, the actual findings of the studies have not been clearly mentioned. Thus, Risk and return analysis of the Commercial Banks (Sample has been taken from four commercial banks in Nepal) is been done. Which study may effective for analyzing the actual risk position and yield from the securities of commercial banks in Nepal.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

The main objective of this study is to make the analysis of risk and return of commercial banks. Thus this chapter is designed to meet the set objectives. The brief discussion of the methodology followed in the study is given below. This chapter includes the brief description of research design, population and sample, sources of data, data collection instrument and procedures and method and tools used for analyzing the data.

#### **3.1 Research Design**

A research design is a clearly planned procedure for carrying out the research. It serves as a framework for the study, guiding the collection and analysis of the data, the research instruments to be utilized and the sampling plan to be followed. It is the plan of attack: what approach to the problem will be taken? What method will be used? What strategies will be most effective?

Kerlinger (1986): “ Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research question. The plan is the overall scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data”

This research has been based on recent historical data collected from Annual Reports of Bank, NEPSE, Securities Board and other sources. It deals with the common stocks of selected listed companies. It covers the period of last seven years i.e. from F.Y. 2063/64 to 2069/70 (2006/07 to 2012/13). Some discussions have been made to interpret the existing secondary information, which have been analyzed by using analytical tools and techniques. Descriptive and analytical research designs have been followed for the study.

#### **3.2 Population and Sample**

There are three hundred and eighty four companies listed in Nepal Stock Exchange Ltd. by the end of the fiscal year 2070/71 out of them only 30 commercial banks submitted their annual reports to security board in Nepal. Twelve commercial banks have been assumed as the population of the study and among them following four listed commercial banks are taken as sample of the study on the basis of judgmental sampling. They are:

- Nepal SBI Bank Ltd (NSBL)
- Himalayan Bank Ltd (HBL)
- Everest Bank Limited (EBL)
- NABIL Bank Ltd (NABIL)

### **3.3 Source of Data**

The main source of data is secondary data. The necessary data are collected from the secondary data. During the study the data has been taken with the Nepal Stock Exchange, individual investor and stockbrokers, price of the different stocks and report published by the bank. NEPSE index is collected from Nepal Stock Exchange. The main source of data is annual trading report published by NEPSE, Securities Board and other concern listed companies annual report, journal and Nepal Rastra Bank's annual, quarterly publications and others.

### **3.4 Tools for Analysis**

#### **3.4.1 Market price of stock (P)**

The market price of stocks is a rupee-per-share value assigned to securities based on buying and selling activity in the stock market. Price fluctuates depending on supply of stock and investor demand in that company.

Among the various major data of this study, market price of stock is the most important. There are three-price records available, namely high price, low price and closing price of each year. Therefore two approaches either average price (i.e. average of high and low price) or closing price can be used. By using average price, result may be very close to reality as it represents the price of whole year. But it is very difficult to obtain the real average. To get the real average, volume and price of each transaction in the stock and duration of time of each transaction in the whole year are essential. So, it is of course very hard and difficult to gather and include all these information and average of high and low price which cannot be used for this study. Due to such difficulties, it is very difficult to use average price as market price of stock. So, the closing price issued as market price of stock, which has a specific time span of one year and the study has focused in annual basis.

#### **3.4.2 Dividend (D)**

Dividend refers to the portion of net income paid out to shareholders. It is paid in cash and / or stock for making investment and bearing risk. Dividend decision of the firm is yet another crucial area of financial management as it affects shareholders wealth and value of the firm. The percentage of earnings paid out in form of cash dividend is known as dividend payout ratio. A company may retain some portion of its earning to finance new investment. The percentage of earnings related in the firm is called rational ratio. Dividend policy is an intergal part of the firm's financing decision as it provides

internal financing. Dividend policy is concerned with determining the proportion of earnings to be retained.

A firm has three alternatives regarding the payment of cash dividends:

- It can distribute all of its earnings in the form of cash dividends, or
- It can retain all of its earnings for reinvestment, or
- It can distribute a part of earnings as dividends and retain the rest for reinvestment purpose.

When dividends are paid to the stockholders the firm's cash is reduced. A firm may decrease its dividend payout and use the retained funds to expand its capacity, to pay off some of its debt or to increase investment. In this way, the firm's dividend policy is closely related with the firm's investment and financing decisions.

A stock dividend simply refers to the dividends paid to existing stockholders in the form of additional shares of common stock. Unlike cash dividends it does not result into the cash outflows. The purpose of stock dividends is to conserve cash in the firm, so that it can be used in new projects. The stock dividend does not affect the equity position of stockholders, rather it represents a recapitalization of a company which takes place in the form of transfer of certain amount from the firm's retained earnings to capital stock amount.

If a company declares only cash dividend, then there is no problem to take the dividend amount but it is not necessary to pay dividend in the cash form. Company can pay dividend to shareholder in the form of stock i.e. bonus share. So, if company declares stock dividend, it is difficult to obtain the amount that really shareholder has gained. In such condition, shareholders get additional number of shares as dividend and simultaneously price of stock declines, as a result of increased number of outstanding stock. So, to get the real amount of dividend, there are no any model or formula developed yet. In this study, models have been developed considering practical as well as theoretical aspect.

Model for dividend:

i. In the case of stock dividend:

Total div. Amount = cash div. + stock div. %  $\times$  next year's MPS

ii. In the case of 'right issued' at par:

Total dividend amount = cash div. + right issued %  $\times$  next year's MPS

### 3.4.3 Return on Common Stock Investment (R)

Return is the income received on an investment plus any change in market price, usually expressed as a percent of the starting or beginning market price of the investment.

Symbolically,

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

Where,

R = Actual rate of return on common stock at time 't'.

D<sub>t</sub> = Cash dividend received at time 't'.

P<sub>t-1</sub> = Price of stock at time (t-1)

### 3.4.4 Standard deviation (σ)

Standard deviation is simple the square root of variance of returns. It is a statistical tool to measure the variability of a distribution of return around its mean. It measures the unsystematic risk on the stock investment. The rate of returns is given in percentage, the standard deviation of an asset will also be in percentage. The standard deviation is denoted by sigma (σ).

Symbolically,

$$\sigma = \sqrt{\frac{\sum(R_j - \bar{R}_j)^2}{n - 1}}$$

where,

σ = Standard deviation of returns on stock j during the time period 'n'.

R<sub>j</sub> = Return on common stock 'j' investment.

$\bar{R}_j$  = Expected return on common stock.

### 3.4.5 Expected Return of Common Stock [E (R<sub>j</sub>)]

One of the main objectives of the study is to determine the expected return on common stock investment. Generally, this rate is obtained by arithmetic mean of the past years return.

Symbolically,

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

Where,

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

$n$  = Number of years that the return is taken.

$\sum$  = Sign of summation.

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

It is the standardized measure of risk per unit of return. It is used in comparing the risk and expected returns of different assets and is calculated as the standard deviation divided by the expected return. Higher coefficient of variation indicates higher risk. It provides a meaningful basis for comparison when there are two or more than two investments with different expected return and standard deviations.

Symbolically,

$$C.V = \frac{\sigma_j}{\bar{r}_j}$$

Where,

C.V= Coefficient of variation

$\sigma$ = Standard deviation of assets 'j'

$\bar{r}_j$ = Average return of assets 'j'

### 3.4.7 Beta Coefficient ( $\beta$ )

The beta coefficient is an index of systematic risk. Beta can be used for an ordinal ranking of the systematic risk of assets. It measures the sensitivity of a stock's return on the market portfolio. An assets with  $\beta > 1$  is an aggressive asset because it is more volatile than the market portfolio. With defensive assets,  $\beta < 1$ , and the response of the asset will be less than that of the market. Mathematically the systematic risk beta is measured as the covariance of the stock returns with the market returns expressed per unit of market variance as follows:

Symbolically,

$$\beta_j = \frac{\text{Cov.} (R_j, R_m)}{\sigma_m^2}$$

Where,

$\beta_j$  = beta coefficient of stock 'j'

Cov. ( $R_j, R_m$ ) = Covariance between  $R_j$  and  $R_m$  and is equal to

$$\text{Cov.} (R_j, R_m) = \frac{(R - R_j) (R_m - R_m)}{n - 1}$$

$\sigma_m^2$  = Variance of market return

### 3.4.8 Correlation coefficient ( $\rho_{AB}$ )

Correlation is a statistical concept measuring the extent to which two variables tend to move together. It measures the relationship between series of numbers. Covariance also shows the relationship between two assets whether it is positive or negative or zero but it does not show the magnitude of the relationship between them. Correlation shows both the magnitude and the direction of the relationship between the returns of two assets. Correlation is a normalized covariance with specific limits, Correlation always falls between -1 and +1. While it may be difficult to interpret covariance numbers without studying the data. Correlation coefficient rescales the covariance to facilitate comparison with corresponding values of other pairs of random variables.

Correlation coefficient always lies between -1 and +1. A value of -1 represents perfect negative correlation and a value of +1 represent perfect positive correlation. Most cases lie between these two extreme values. When the two variables have no relationship, they are uncorrelated and the correlation coefficient is zero. Correlation and Covariance are related by the following equation

$$\text{COV.}_{AB} (\sigma_{AB}) = \rho_{AB}$$

Therefore,

$$\rho_{AB} = \frac{\text{Cov.}_{AB}}{\sigma_A \sigma_B}$$

Where,

$\sigma_{AB}$  = Covariance between the returns of assets A and assets B.

$\rho_{AB}$  = Correlation between the returns of assets A and assets B.

$\sigma_A$  = Standard deviation of returns of Assets A.

$\sigma_B$  = Standard deviation of returns of Assets B.

There are various cases of correlation and risk condition, which are presented below:

#### **3.4.8.1 Perfect Positively Correlation ( $\rho_{AB} = +1$ )**

A perfectly positive correlation between the returns of two stocks means there is one-to-one increase or decrease between the returns of two stocks. Returns on two perfectly correlated stocks would move up and down together and portfolio consisting of two such stocks would be exactly as risky as the individuals stocks. Thus, diversification does nothing to reduce risk if the portfolio consists of perfectly positively correlated stock.

#### **3.4.8.2 Perfect negatively correlation ( $\rho_{AB} = -1$ )**

A perfectly negative correlation between the returns of two stocks means that an unit (decrease) in the return of one stock in accompanied by the same unit decrease (increase) in the return of another stock. Return on two perfectly negatively correlated stocks would move perfectly together but in exactly opposite direction. In this condition, risk can be completely eliminated. Perfect negative correlation almost never found in the real world.

#### **3.4.8.3 No relationship between return ( $\rho_{AB} = 0$ )**

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

#### **3.4.8.4 Intermediate risk ( $\rho_{AB} = +0.5$ )**

Most stocks are positively correlated, but not perfectly. On average, the returns on two stocks would lie on the range of +0.4 and +0.75, under this condition, combining stocks into portfolios reduces risk but doesn't eliminated at completely.

#### **3.4.9 Portfolio Return ( $\bar{r}_p$ )**

Portfolio is combination of two or more securities or assets Portfolio return refers to the return on total investment when an investor invests in more than one assets or portfolio return is simply a weighted average of individual stock returns. It equals to the weighted average of the returns of individual assets held in the proportion of the funds invested in the assets. The sum of weight of all assets in a portfolio always equals to one as an investor spreads his/her total fund among the assets. The weight or proportion of an asset in the total portfolio is found out by dividing the amount invested in each asset held in the portfolio by the total amount invested in the portfolio.

Symbolically,

$$r_p = w_A r_A + w_B r_B$$

Where,

$r_p$  = Expected return on portfolio of stock A and stock B.

$w_A$  = Weight of stock A.

$w_B$  = Weight of stock B.

$$w_A + w_B = 1.$$

### 3.4.10 Portfolio Risk ( $\rho$ )

Portfolio risk refers to the possibility that an investment portfolio will not earn the expected or desired rate of return. It can be measured in terms of portfolio variance and portfolio standard deviation. Portfolio risk is measured by the combined standard deviation of the standard deviations of individual stock return.

Symbolically,

$$\rho = \sqrt{w_A^2 \sigma_A^2 + w_B^2 \sigma_B^2 + 2w_A w_B \text{Cov.}(R_A, R_B)}$$

Where,

$\sigma_A$  = Standard deviation of portfolio returns of Stock A

$\sigma_B$  = Standard deviation of portfolio returns of Stock B.

$\text{Cov.}(R_A, R_B)$  = Equivalent representation covariance of returns between assets A and B.

### 3.4.11 Risk Minimizing Portfolio

It is the portfolio with the lowest level of risk in the efficient frontier. It is the ratio of the two assets, which minimize the risk ( $\rho$ ). It is also called risk minimizing weight or optimal weighted.

Symbolically,

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

Where,

$w_A$  = Weight of stock A that minimize the portfolio risk of stock A and stock B.

$\sigma_A$  = Standard deviation of stock A.

$\sigma_B$  = Standard deviation of stock B.

# **CHAPTER FOUR**

## **PRESENTATION AND ANALYSIS OF DATA**

### **4.1 Data Presentation and Analysis**

The chapter data presentation and analysis is the main body of the study. Detail data of market price per share and dividend per share of each commercial bank, NEPSE index of each industry or sector and the market are presented and their interpretation and analysis are included in this chapter.

On the background of various reading and literature review in the preceding chapter, it is tried to analyze and diagnose the recent Nepal stock market movement, with taking a special reference with commercial banks of Nepal. Different tables and figures are used to make the result more simple and understandable.

Among the listed commercial banks only four commercial banks are taken as sample namely:

- Nabil Bank Ltd (NABIL)
- Nepal SBI Bank Ltd. (SBI)
- Himalayan Bank Ltd. (HBL)
- Everest Bank Limited (EBL)

As the title is “Risk and Return Analysis of Commercial Banks”, it is necessary to analyze the common stock of selected Commercial banks.

#### **4.1.1 Nepal SBI Bank Ltd (SBI)**

##### **4.1.1.1 Introduction**

Nepal SBI Bank Ltd. (NSBL) is the first Indo-Nepal joint venture in the financial sector sponsored by three institutional promoters, namely State Bank of India(SBI), Employees Provident Fund(EPF) and Agricultural Development Bank Ltd.(ADBL) through a Memorandum of Understanding signed on 17th July 1992. NSBL was incorporated as a public limited company at the Office of the Company Registrar on April 28, 1993 under Regd. No. 17-049/50 with an Authorized Capital of Rs.12 Crores and was licensed by Nepal Rastra Bank on July 6, 1993 under license No. NRB/I.Pa./7/2049/50. NSBL commenced operation with effect from July 7, 1993 with one full-fledged office at Durbar Marg, Kathmandu with 18 staff members. Now bank is having 538 Nepalese employees working in 56 branches, 6 extension counters, 3 Regional Offices & the Corporate Office. Under the Banks & Financial Institutions Act, 2063, Nepal Rastra Bank granted fresh license to NSBL classifying it as an "A" class licensed institution on April 26, 2006 under license No. NRB/I.Pra.Ka.7/062/63.

The Authorized, Issued and Paid-Up Capitals have been increased to Rs.200 Crores, Rs.186.93 Crores and Rs.186.93 Crores respectively. A core management team viz. Central Management Committee (CENMAC) consisting of the Managing Director, Chief Operating Officer, Chief Financial Officer and Assistant General Manager(Credit) oversees the overall banking operations in the Bank. ADBL divested its stake in the Bank by selling its entire 5% promoter shares to SBI on 14th June, 2009. Consequently, the Bank's corporate status has undergone change from its previous status as a Joint-venture Bank to a Foreign Subsidiary Bank of SBI. Presently 55 percent of ownership and rest is held by a local partner viz. Employee Provident Fund (15%) and general public (30%).

SBI has arrangements with over 1500 various international / local banks to exchange financial messages through SWIFT in all business centers of the world to facilitate trade related banking business, reinforced by dedicated and highly skilled teams of professionals. Nepal SBI Bank Ltd. (NSBL) has also been actively involved in Corporate Social Responsibility (CSR) activities as a part of social responsibility initiatives, Bank Ltd. has extended its hands to the victims of the floods and landslides by providing financial support of Rs.200,000/- to the “Prime Minister Natural Disaster Relief Fund” with a view to partner with the nation to rehabilitate, reinstate and provide relief to the victims.

#### 4.1.1.2 Data

**Table 4.1: MPS and Dividend Data of SBI** (in Rs)

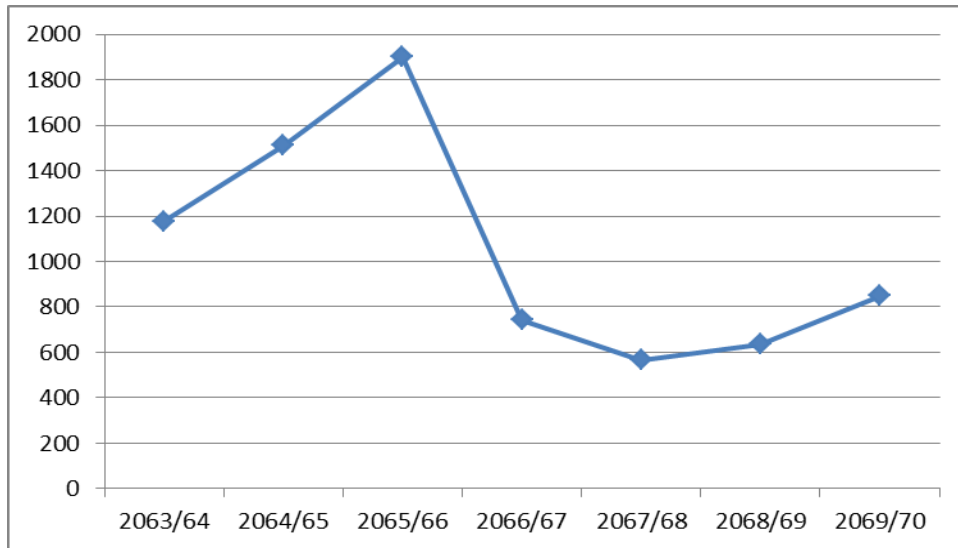
FT	High MPS	Low MPS	Closing MPS	DPS
2063/64	1176	505	1176	4.95
2064/65	2660	1000	1511	0
2065/66	1938	1050	1900	0.76
2066/67	1905	556	741	1.18
2067/68	785	400	565	1.24
2068/69	764	400	635	1.15
2069/70	959	476	850	2.46

*Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 and SBI Bank Annual Report, 2063/64-2069/70.*

Market Price, Dividend Per Share of common stock of SBI are shown in table 4.1. From the above table, we can see that the Closing Market Price Per Share and Dividend Per Share has change every year. In 2063/64 Dividend Per Share was Rs.4.95. And in the year 2065/66 DPS was Rs.0.76. Likewise, in the year 2066/67, 2067/68, 2068/69 and

2069/70 the DPS was Rs.1.18, Rs.1.24, Rs.1.15 and Rs.2.46 respectively. From the above table it shows that the Shareholders got highest DPS i.e Rs.4.95 in the year 2063/64 and lowest in the year 2065/66 i.e Rs.0.76.

**Fig. 4.1: Year-end Price Movement of SBI**



The above figure shows the Year-end price movement of Nepal SBI bank. During the year 2063/64 the closing MPS was Rs.1176. And in the year 2064/65 and 2065/66 the MPS was increased from Rs.1511 to Rs.1900. Then after MPS was decreased to Rs.565 from Rs.741 in the year 2067/68. In 2069/70 MPS was increased to Rs.850 from Rs.635.

#### 4.1.1.3 Realized Returns (R), Standard Deviation ( $\sigma$ ) and Expected Returns ( $\bar{R}$ )

**Table 4.2: Realized Rate of Returns, Expected Returns and S.D. of SBI**

FY	Closing MPS (Rs.)	Dividend (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2063/64	1176	4.95	0.93	0.8	0.64
2064/65	1511	0	0.28	0.12	0.01
2065/66	1900	0.76	0.26	0.10	0.01
2066/67	741	1.18	(0.61)	(0.77)	0.59
2067/68	565	1.24	(0.24)	(0.40)	0.16
2068/69	635	1.15	0.13	(0.03)	0.00
2069/70	850	2.46	0.34	0.20	0.04
	<b>Total</b>		<b>1.09</b>	<b>0.02</b>	<b>1.45</b>

Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 and SBI Bank Annual Report, 2063/64-2069/70.

We have,

$$\begin{aligned} \text{Expected } (\bar{R}) &= \frac{\sum R}{n} \\ &= \frac{1.09}{7} \\ &= 0.16 \end{aligned}$$

$$\begin{aligned} \text{S.D. } (\sigma) &= \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} \\ &= \sqrt{\frac{1.45}{7 - 1}} \\ &= \sqrt{0.242} \\ &= 0.49 \end{aligned}$$

$$\begin{aligned}
\text{C.V.} &= \frac{\sigma}{\bar{R}} \\
&= \frac{0.49}{0.16} \\
&= 3.06
\end{aligned}$$

Table 4.2, shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of Nepal SBI is 0.16. And Standard Deviation and C.V. is 0.49 and 3.06 respectively.

**Fig. 4.2: Annual Return of Common Stock of SBI**



From the Figure 4.2, we can analyze yearly-realized return. The above figure shows that the realized rate of return in the year 2063/64 is 0.93. And yearly realization rate in the year 2064/65 and 2065/66 is 0.28 and 0.26 respectively, after 2065/66 realized rate of return has been decreased and reach to negative i.e -0.61 and -0.24 respectively. And in the year 2069/70 the rate of return reached to 0.34. It means that in the year 2069/70 the stock price as well as DPS was increased.

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

### **4.1.2.1 Introduction**

Himalayan Bank was established in 1993 in joint venture with Habib Bank Limited of Pakistan. Despite the cut-throat competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities- Loans and Deposits.

Legacy of Himalayan lives on in an institution that's known throughout Nepal for its innovative approaches to merchandising and customer service. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. Other financial institutions in the country have been following our lead by introducing similar products and services. Therefore, Himalayan Bank stand for the innovations that bring about in this country to help Customers besides modernizing the banking sector. With the highest deposit base and loan portfolio amongst private sector banks and extending guarantees to correspondent banks covering exposure of other local banks under credit standing with foreign correspondent banks. The most recent rating of HBL by Bankers' Almanac as country's number 1 Bank easily confirms bank's claim.

All Branches of HBL are integrated into Globus (developed by Temenos), the single Banking software where the Bank has made substantial investments. This has helped the Bank provide services like 'Any Branch Banking Facility', Internet Banking and SMS Banking. Living up to the expectations and aspirations of the Customers and other stakeholders of being innovative, HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. HBL also has a dedicated offsite 'Disaster Recovery Management System'. Looking at the number of Nepalese workers abroad and their need for formal money transfer channel. HBL has developed exclusive and proprietary online money transfer software- Himal Remit TM. By deputing bank's own staff with technical tie-ups with local exchange houses and banks, in the Middle East and Gulf region, HBL is the biggest inward remittance handling Bank in Nepal. All this only reflects that HBL has an outside-in rather than inside-out approach where Customers' needs and wants stand first.

Corporate Social Responsibility (CSR) holds one of the very important aspects of HBL. Being one of the corporate citizens of the country, HBL has always promoted social activities. Many activities that do a common good to the society have been undertaken by HBL in the past and this happens as HBL on an ongoing basis. Significant portion of the sponsorship budget of the Bank is committed towards activities that assist the society as large.

Himalayan Bank Limited holds of a vision to become a Leading Bank of the country by providing premium products and services to the customers, thus ensuring attractive and substantial returns to the stakeholders of the Bank. The Bank's mission is to become preferred provider of quality financial services in the country. There are two components in the mission of the Bank; Preferred Provider and Quality Financial Services; therefore HBL believe that the mission will be accomplished only by satisfying these two important components with the Customer at focus. Bank has been providing its services from 44 branches (18 inside valley and 26 outside valley). Likewise bank provides SMS bank banking, internet banking, card services, international banking, remit, safe deposit lockers to valued customers. The Bank always strives positioning itself in the hearts and minds of the customers. To become the Bank of first choice is the main objective of the Bank.

#### 4.1.2.2 Data

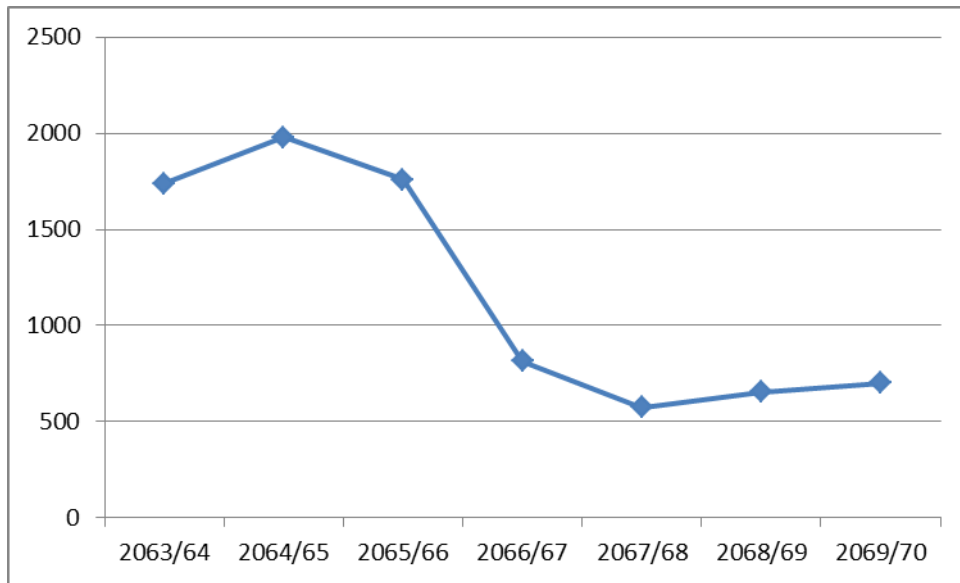
**Table 4.3: MPS and Dividend Data of HBL** (in Rs)

FT	High MPS	Low MPS	Closing MPS	DPS
2063/64	1760	950	1740	9.10
2064/65	2856	1340	1980	15.68
2065/66	2730	1119	1760	7.43
2066/67	1780	676	816	3.77
2067/68	885	380	575	7.52
2068/69	850	438	653	5.36
2069/70	923	620	700	3.42

*Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 & Himalayan Bank Annual Report, 2063/64-2069/70.*

Market price and dividend records of common stock of HBL are shown in Table 4.3. As per table MPS and DPS of HBL is very high in FY 2064/65. Likewise, MPS was lowest i.e Rs.575 in 2067/68. In 2069/70 DPS was Rs.3.42 i.e lowest than that of respective years.

**Fig. 4.3: Year-end Price Movement of HBL**



Year-end price movement of HBL is shown in the fig. 4.3. In the year 2063/64 Closing Price of HBL is Rs.1740. And in 2064/65 the closing price increased and reached to Rs.1980. After 2064/65 the curve start sloping downward because the closing price start decreasing, and reached to lowest point i.e Rs.575. Then after the curve start rising slowly and reached to Rs.700 in the year 2069/70.

### 4.1.2.3 Realized Returns (R), Standard Deviation ( $\sigma$ ) and Expected Returns ( $\bar{R}$ )

**Table 4.4: Realized Rate of Returns, Expected Returns and S.D. of HBL**

FY	Closing MPS (Rs.)	Dividend (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2063/64	1740	9.1	0.59	0.47	0.22
2064/65	1980	15.68	0.14	0.02	0.00
2065/66	1760	7.43	(0.10)	(0.22)	0.05
2066/67	816	3.77	(0.50)	(0.62)	0.38
2067/68	575	7.52	(0.20)	(0.32)	0.10
2068/69	653	5.36	0.15	0.03	0.00
2069/70	700	3.42	0.77	0.65	0.42
	<b>Total</b>		<b>0.85</b>	<b>0.01</b>	<b>1.17</b>

Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 & Himalayan Bank Annual Report, 2063/64-2069/70.

We have,

$$\begin{aligned} \text{Expected } (\bar{R}) &= \frac{\sum R}{n} \\ &= \frac{0.85}{7} \\ &= 0.12 \end{aligned}$$

$$\begin{aligned} \text{S.D. } (\sigma) &= \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} \\ &= \sqrt{\frac{1.17}{7 - 1}} \\ &= \sqrt{0.195} \\ &= 0.44 \end{aligned}$$

$$\begin{aligned}
 \text{C.V.} &= \frac{\sigma}{\bar{R}} \\
 &= \frac{0.44}{0.12} \\
 &= 3.66
 \end{aligned}$$

Table 4.4, shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of HBL is 0.12. Standard Deviation of HBL is 0.44 and C.V. is 3.66.

**Fig. 4.4: Annual Return of Common Stock of HBL**

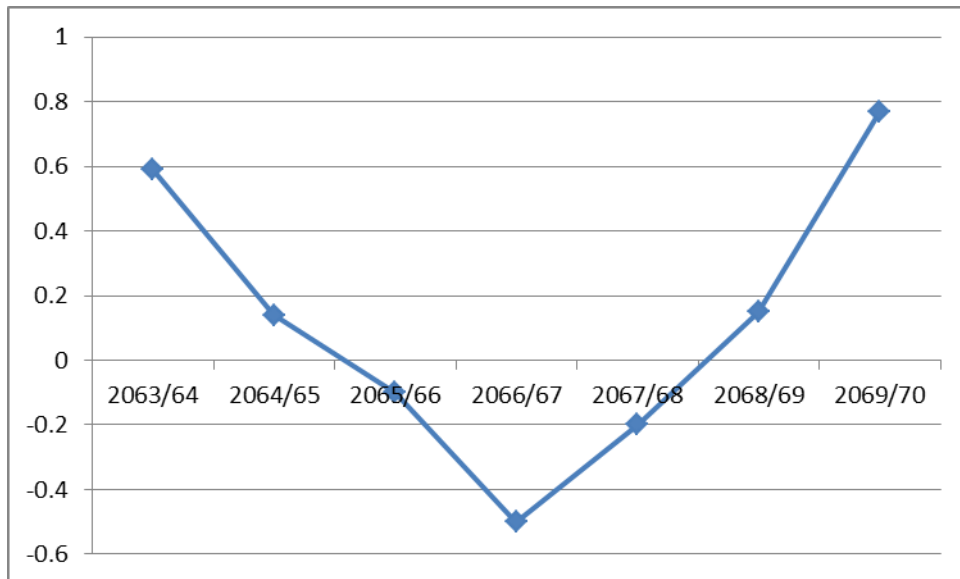


Figure 4.4 shows Annual Return of Common Stock of HBL. The above figure shows that the realization rate of return turn to negative in the year 2065/66 from 0.59 to -0.10. After the year 2067/68 the curve increased and reached to 0.15 and 0.77 in the year 2068/69 and 2069/70 respectively.

### **4.1.3 Everest Bank Limited (EBL)**

#### **4.1.3.1 Introduction**

Everest Bank Limited (EBL) started its operations in 1994 with a view and objective of extending professionalized and efficient banking services to various segments of the society. The bank is providing customer-friendly services through its Branch Network. All the branches of the bank are connected through Anywhere Branch Banking System (ABBS), which enables customers for operational transactions from any branches. The bank has 52 Branches, 73 ATM Counters, 5 extension counter & 22 Revenue Collection across the country making it a very efficient and accessible bank for its customers, anytime, anywhere. With an aim to help Nepalese citizens working abroad, the bank has entered into arrangements with banks and finance companies in different countries, which enable quick remittance of funds by the Nepalese citizens in countries like UAE, Kuwait, Bahrain, Qatar, Saudi Arabia, Malaysia, Singapore and U K.

Bank has set up its representative offices at New Delhi (India) to support Nepalese citizen remitting money and advising banking related services. Joint Venture Partner Punjab National Bank (PNB), joint venture partner (holding 20% equity in the bank) is the largest nationalized bank in India. As a joint-venture partner, PNB has been providing top management support to EBL under Technical Service Agreement. With its presence virtually in all the important centers at India, Punjab National Bank offers a wide variety of banking services which include corporate and personal banking, industrial finance, agricultural finance, financing of trade and international banking. Among the clients of the Bank are Indian conglomerates, medium and small industrial units, exporters, non-resident Indians and multinational companies. The large presence and vast resource base have helped the Bank to build strong links with trade and industry.

The bank has been conferred with “Bank of the Year 2006, Nepal” by the banker, a publication of financial times, London. The bank has been conferred with the "Best Managed Commercial Bank" by ASIAN PAINT NEWBIZ Award 2013. Likewise The bank adjudged as "Number 1 Bank" under CAMELS (along with Customer Base & Branch Network) rating conducted by KAROBAR national daily (a leading business media house of Nepal). The bank was bestowed with the “NICCI Excellence award” by Nepal India chamber of commerce for its spectacular performance under finance sector. Recognizing the value of offerings a complete range of services, bank has been extending various customer friendly products such as Home Loan, Education Loan, EBL Flexi Loan, EBL Property Plus (Future Lease Rental), Home Equity Loan, Vehicle Loan, Loan Against Share, Loan Against Life Insurance Policy and Loan for Professionals. EBL was one of the first bank to introduce Any Branch Banking System (ABBS) in Nepal. Likewise EBL introduced Cash Deposit Kiosk for the first time in Nepal through which the Customers can deposit Cash conveniently.

EBL has introduced Mobile Vehicle Banking system to serve the segment deprived of proper banking facilities through its Birtamod Branch, which is the first of its kind. EBL has introduced branchless banking system first time in Nepal to cover unbanked sector of Nepalese society. EBL is first bank that has launched e-ticketing system in Nepal. EBL customer can buy yeti airlines ticket through internet. Likewise Corporate Social Responsibility (CSR) holds one of the very important aspects of EBL. Being one of the corporate citizens of the country, EBL has always promoted social activities.

#### 4.1.3.2 Data

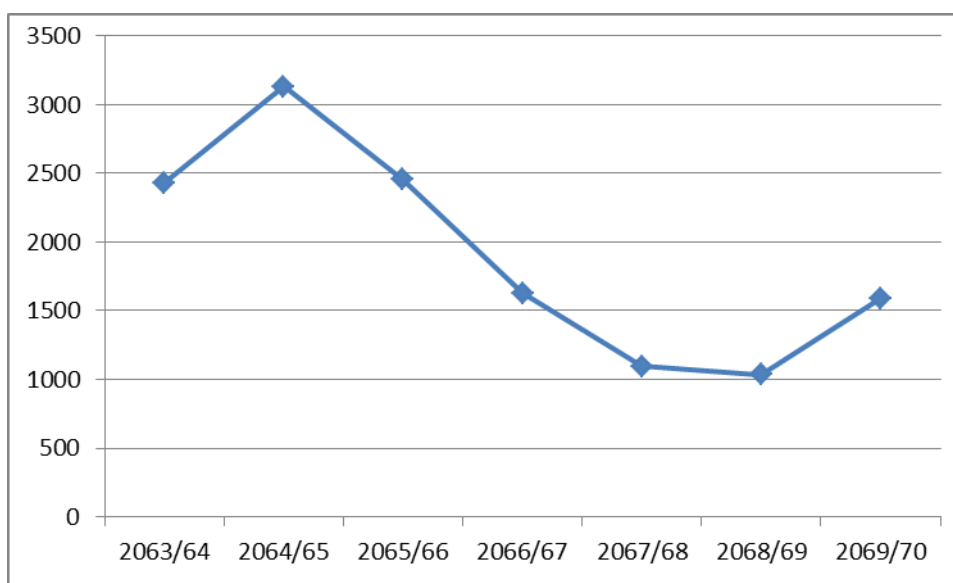
**Table 4.5: MPS and Dividend Data of EBL** (in Rs)

FT	High MPS	Low MPS	Closing MPS	DPS
2063/64	2430	1100	2430	7.42
2064/65	3195	1804	3132	18.37
2065/66	3672	1855	2455	29.99
2066/67	2703	1071	1630	30.05
2067/68	1598	781	1094	41.59
2068/69	1218	650	1033	9.37
2069/70	1729	910	1591	45.94

*Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 & Everest Bank Annual Report, 2063/64-2069/70.*

Market price and Dividend records of common stock of EBL are shown in Table 4.5. The highest MPS is in the year 2064/65 i.e Rs.3132 and the lowest MPS is in the year 2068/69 i.e Rs.1033. Likewise, the highest DPS is in the year 2069/70 i.e Rs.45.94 and lowest is in the year 2063/64 i.e Rs.7.42.

**Fig. 4.5: Year-end Price Movement of EBL**



Year-end price movement of EBL is shown in the fig. 4.5. The above figure shows that year end price in the year 2063/64 is Rs.2430. And in the year 2064/65 the MPS increased and reached to Rs.3132 then after the MPS start decreasing and reached to Rs.1033 in the year 2068/69. Likewise, MPS reached to Rs.1591 in the year 2069/70.

#### 4.1.3.3 Realized Returns (R), Standard Deviation ( $\sigma$ ) and Expected Returns ( $\bar{R}$ )

**Table 4.6: Realized Rate of Returns, Expected Returns and S.D. of EBL**

FY	Closing MPS (Rs.)	Dividend (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2063/64	2430	7.42	0.77	0.63	0.4
2064/65	3132	18.37	0.32	0.20	0.04
2065/66	2455	30	(0.19)	(0.33)	0.11
2066/67	1630	30.05	(0.30)	(0.44)	0.19
2067/68	1094	41.59	(0.29)	(0.43)	0.18
2068/69	1033	9.37	(0.01)	(0.15)	0.02
2069/70	1591	45.94	0.68	0.54	0.29
	<b>Total</b>		<b>0.98</b>	<b>0.02</b>	<b>1.23</b>

Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 & Everest Bank Annual Report, 2063/64-2069/70.

We have,

$$\begin{aligned}\text{Expected } (\bar{R}) &= \frac{\sum R}{n} \\ &= \frac{0.98}{7} \\ &= 0.14\end{aligned}$$

$$\begin{aligned}\text{S.D. } (\sigma) &= \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} \\ &= \sqrt{\frac{1.23}{7 - 1}} \\ &= \sqrt{0.205} \\ &= 0.45\end{aligned}$$

$$\begin{aligned}\text{C.V.} &= \frac{\sigma}{\bar{R}} \\ &= \frac{0.45}{0.14} \\ &= 3.21\end{aligned}$$

Year-end price and dividend amounts are used to calculate yield and capital gain yield is added to find return for each year. Table 4.6, shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of EBL is 0.14. Standard Deviation of EBL is 0.45 and C.V. is 3.21.

**Fig. 4.6: Annual Return of Common Stock of EBL**

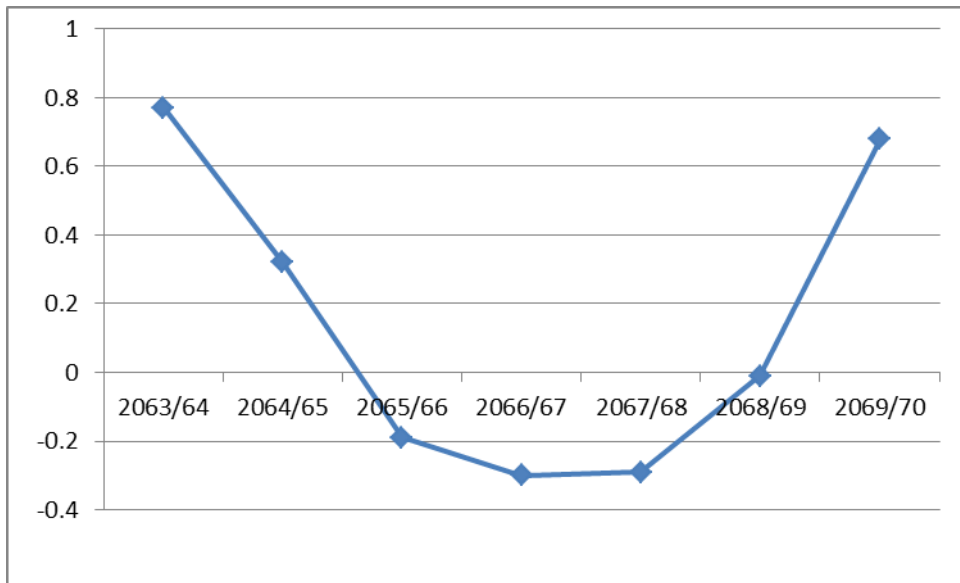


Figure 4.6 shows the Annual Return of Common Stock of EBL. The Rate of return in the year 2063/64 is 0.77 then after the curve decline and reached to negative at -0.19, -0.30, -0.29 and -0.01 in the fiscal year 2065/66, 2066/67, 2067/68 and 2068/69 respectively. After the fiscal year 2067/68 the curve start rising upward and reached to 0.68 in the year 2069/70.

#### 4.1.4 Nabil Bank Ltd. (NABIL)

##### 4.1.4.1 Introduction

Nabil Bank Limited is the nation's first private sector bank, commencing its business since July 1984. Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, Nabil provides a full range of commercial banking services through its 48 points of representation. In addition to this, Nabil has presence through over 1300 Nabil Remit agents throughout the nation. Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. Operations of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes international standard banking software that supports the E-channels and E-transactions.

Nabil is moving forward with a Mission to be **“1st Choice Provider of Complete Financial Solutions”** for all its stakeholders; Customers, Shareholders, Regulators, Communities and Staff. Nabil is determined in delivering excellence to its stakeholders in an array of avenues, not just one parameter like profitability or market share. It is reflected in its Brand Promise **“Your Bank at your service”**. The entire Nabil Team embraces a set of Values **“C.R.I.S.P”**, representing the fact that Nabil consistently strives to be Customer Focused, Result Oriented, Innovative, Synergistic and Professional. Nabil Bank Limited was honored with **“Best Presented Accounts Award 2012/13”** in a function organized by Institute of Chartered Accountants of Nepal (ICAN) the regulatory body of Accounting and Auditing. Likewise Nabil Bank Limited was honored with **“SAFA Best Presented Annual Report Awards 2012 and SAARC Anniversary Awards for Corporate Governance Disclosures 2012”** among private sector banks by South Asian Federation of Accountants (SAFA) on 3rd May 2014.

The Privilege Banking Unit is committed to serve us through their sophisticated and state-of-the-art products and services. All branches are connected to each other through V-SAT and radio links and no matter where we open our deposit accounts, we can have full access to our accounts from any of the branches spread all over Nepal - either for statements or deposits or withdrawals of cash. For those who are Internet-savvy, they can have access over their accounts from the comfort of their homes or office through the Internet using NabilNet, Nabil Internet banking system. For investment or safety, we can choose our accounts from an array of deposit schemes that the bank offer. Nabil's range of card products, wide network of ATMs and extended banking counters including 365 days banking from Kantipath Branch all complement to exclusive banking experience with Nabil. Bank offer different privileges in the forms of personalized banking and discounts for high-value accounts.

The basis of the every existence of a corporate body lies in creating values and then sharing the values with its stakeholders. In a broader perspective, stakeholders do not only entail shareholders but encompass a larger spectrum that include employees, depositors, borrowers, creditors, regulators depositors, borrowers, creditors, regulators, business partners and the general public. The institutions like banks interact extensively with these stakeholders and it is Very common to expect sharing off air values by the stakeholders. Nabil reveres such expectation and feels a moral duty to share Created The compensation of value received which could take form of capital or services. However at times we share our value with our stakeholders, particularly the philanthropic institutions or individuals working for noble cause, with no such expectation of value in exchange or in Monetary terms. Such contribution has been An essential part of Nabil's business which is Evident through its involvement and Partnerships with various institutions on Different occasions from the last so many years.

During the year 2012-13, the Bank entered into a three years partnership with the international Centre for Integrated Mountain Development (ICIMOD) for improving Facilities at the ICIMOD Knowledge Park at Godavari. In addition, the Bank has also made contribution of NRs.100K for environmental awareness event organized by Alternative Energy Promotion Centre (AEPC). Further more, the Bank has contributed NRs.300K for constructing Traffic Police Office Building at Durbar Marga.

#### 4.1.4.2 Data

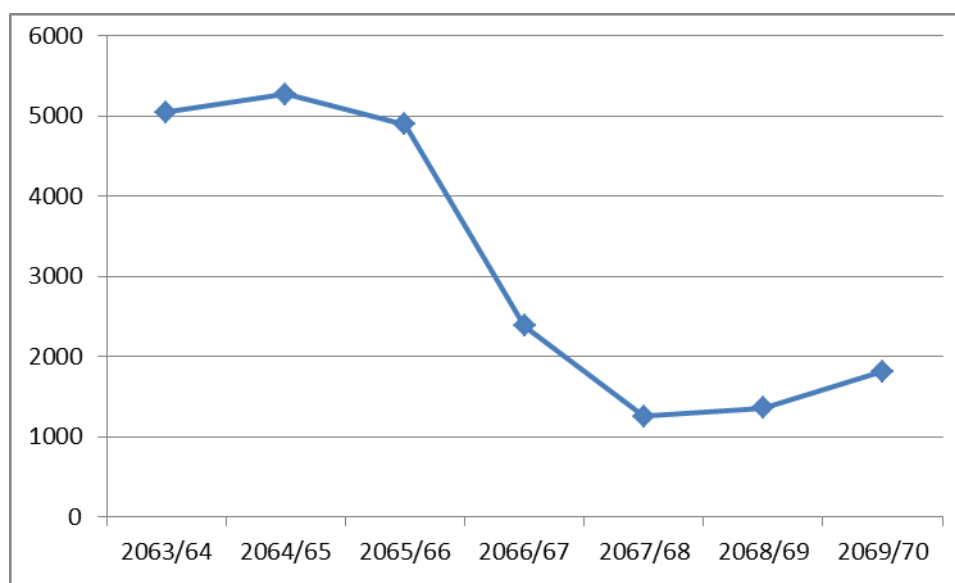
**Table 4.7: MPS and Dividend Data of NABIL** (in Rs)

FT	High MPS	Low MPS	Closing MPS	DPS
2063/64	5050	2025	5050	137.08
2064/65	6700	3410	5275	64.98
2065/66	6400	3050	4899	37.37
2066/67	5240	1665	2384	25.18
2067/68	2337	790	1252	21.20
2068/69	1585	781	1355	33.37
2069/70	2000	1101	1815	33.29

Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 & NABIL Bank Annual Report, 2063/64-2069/70.

Market price and dividend per share of common stock of NABIL are shown in Table 4.7. The maximum MPS of NABIL bank is Rs.5275 in the year 2064/65 and the minimum price is in the year 2067/68 i.e Rs.1252. Likewise the maximum DPS is in the year 2063/64 i.e Rs.137.08 and the minimum DPS is in the year 2067/68 i.e Rs.21.20.

**Fig. 4.7: Year-end Price Movement of NABIL**



Year-end price movement of NABIL Bank is shown in the fig. 4.7. The above figure shows that year end price in the year 2063/64 is Rs.5050. And in the year 2064/65 the

MPS increased and reached to Rs.5275 then after the MPS start decreasing and reached to Rs.1355 in the year 2068/69. Likewise, MPS reached to Rs.1815 in the year 2069/70.

#### 4.1.4.3 Realized Returns (R), Standard Deviation ( $\sigma$ ) and Expected Returns ( $\bar{R}$ )

**Table 4.8: Realized Rate of Returns, Expected Returns and S.D. of NABIL**

FY	Closing MPS (Rs.)	Dividend (Rs.)	$R = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$R - \bar{R}$	$(R - \bar{R})^2$
2063/64	5050	137.08	1.32	1.11	1.23
2064/65	5275	64.98	0.06	(0.15)	0.02
2065/66	4899	37.37	(0.06)	(0.27)	0.07
2066/67	2384	25.18	(0.38)	(0.59)	0.35
2067/68	1252	21.2	(0.05)	(0.26)	0.07
2068/69	1355	33.37	0.20	(0.01)	0.00
2069/70	1815	33.29	0.40	0.19	0.04
<b>Total</b>			<b>1.49</b>	<b>0.02</b>	<b>1.78</b>

Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70 and NABIL bank annual Report, 2063/64-2069/70.

We have,

$$\begin{aligned} \text{Expected } (\bar{R}) &= \frac{\sum R}{n} \\ &= \frac{1.49}{7} \\ &= 0.21 \end{aligned}$$

$$\begin{aligned} \text{S.D. } (\sigma) &= \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} \\ &= \sqrt{\frac{1.78}{7 - 1}} \\ &= \sqrt{0.297} \\ &= 0.54 \end{aligned}$$

$$\begin{aligned}
\text{C.V.} &= \frac{\sigma}{\bar{R}} \\
&= \frac{0.54}{0.21} \\
&= 2.57
\end{aligned}$$

Table 4.8 shows the calculation of yearly-realized returns, expected return and standard deviations of returns. Expected return of the common stock of NABIL is 0.21. Standard Deviation is 0.54 and C.V. is 2.57.

**Fig. 4.8: Annual Return of Common Stock of NABIL**

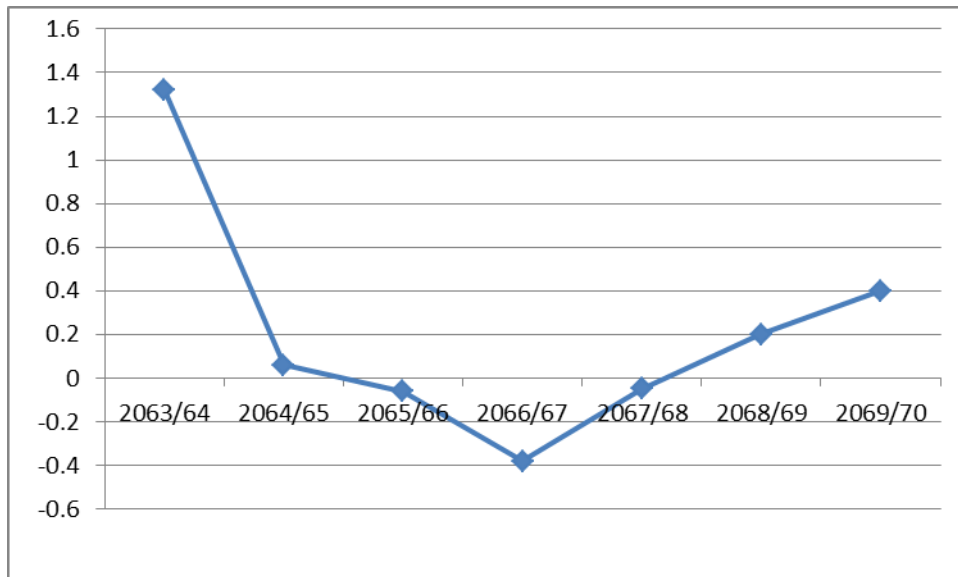


Figure 4.8 shows the Annual Return of Common Stock of NABIL Bank. The Rate of return in the year 2063/64 is 1.32. And in the year 2064/65 rate of return is 0.06 then after the curve decline and reached to negative at -0.06, -0.38 and -0.05 in the fiscal year 2065/66, 2066/67 and 2067/68 respectively. After the fiscal year 2067/68 the curve start rising upward to right and reached to 0.40 in the year 2069/70.

#### 4.1.5 Inter Bank Comparison

According to the return from the previous section, a comparative analysis of return and unsystematic risk is performed there. Expected return, standard deviation of returns, coefficient of variations of each bank for the year 2063/64 to 2069/70 is presented in table 4.9.

**Table 4.9: Expected Return, S.D. and Coefficient of Variation of Each Bank**

<b>Bank</b>	<b>Expected Return</b>	<b>Standard Deviation</b>	<b>C.V.</b>	<b>Remarks</b>
SBI	0.16	0.49	3.06	Lower C.V., Higher Return
HBL	0.12	0.44	3.66	Higher C.V., Lower Return
EBL	0.14	0.45	3.21	Lower C.V., Lower Return
NABIL	0.21	0.54	2.57	Lower C.V., Higher Return

Investor can get highest return from investment in common stock of NABIL Bank among the four banks and lowest from Himalayan Bank limited. Coefficient of Variation (C.V.) is the more appropriate basis of taking decision on the investment in single security because it measures risk per unit return of a stock. A project with a low C.V. has less risk per rupee than a project with higher C.V. Coefficient of Variation included Standard Deviation and Expected Return in it. Therefore, an investor should always be careful to invest in a security regarding its C.V. Like traffic red light, investor should provide utter care and be alert with C.V. From the above table we have found that NABIL Bank Ltd. has the best common stock for investment because of its minimum Coefficient of Variation.

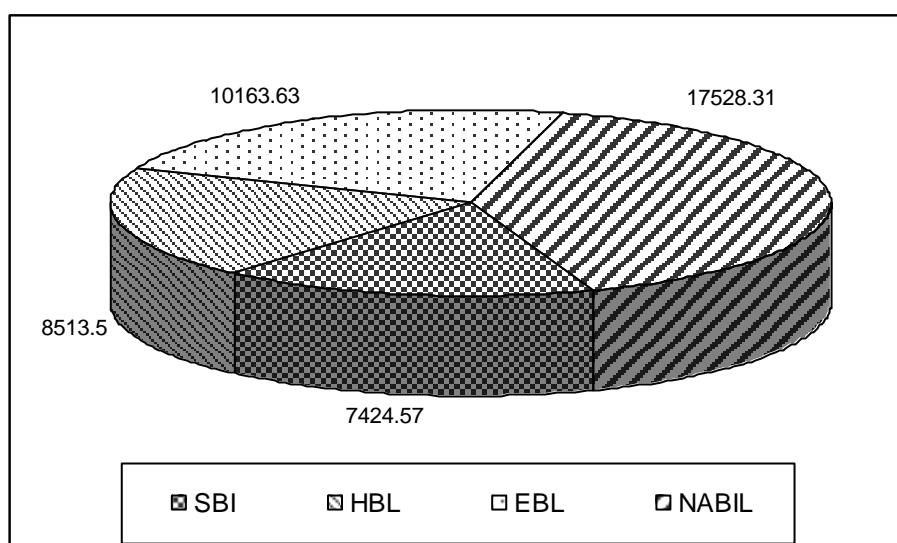
**Table 4.10: Market Capitalization of Banks (Rs. In Million)**

<b>Market capitalization as on Ashad 31, 2070</b>	
<b>Banks</b>	<b>Market Capitalization</b>
SBI	7424.57
HBL	8513.50
EBL	10163.63
NABIL	17528.31
<b>Total</b>	<b>43630.01</b>

*Source: Nepal Stock Exchange Annual Report, 2069/70*

Market capitalization represents the aggregate value of a company or stock. It is obtained by multiplying the number of shares outstanding by their current price per share. On the basis of Report Published by Nepal Stock Exchange, NABIL Bank has highest market capitalization i.e Rs.17528.31 Million. Everest Bank's Market Capitalization is Rs.10163.63 Million. And the market capitalization of Himalayan Bank and Nepal SBI bank is Rs.8513.50 and Rs.7424.57 Million respectively.

**Fig. 4.9: Market Capitalization of Selected Banks under Study at Ashad 31, 2070**



On the basis of the market capitalization, this is the total market value at the specific time period of each bank. Here only four commercial banks i.e. SBI, HBL, EBL and NABIL are taken into the consideration during the period of 2069/70. The above Chart shows that market capitalization of SBI bank is 17%. And that of HBL is 20%. Likewise, that of EBL and NABIL Bank is 23% and 40% respectively. Among four commercial bank NABIL has highest market capitalization.

**Table 4.11: Year wise Comparative Movement of Market Capitalization**

(Rs. In Million)

Banks	Years						
	2063/64	2064/65	2065/66	2066/67	2067/68	2068/69	2069/70
SBI	7618.17	9788.31	12308.26	6472.48	4935.16	5546.59	7424.57
HBL	14270.26	16054.04	14270.26	9924.31	6993.24	7941.88	8513.50
EBL	9185.40	11838.96	9279.90	10412.77	6988.69	6599.01	10163.63
NABIL	24795.25	36259.98	33675.38	23023.41	12091.15	13085.87	17528.31

Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70.

Table 4.11 shows Year wise Comparative Movement of Market Capitalization. In the year 2063/64 the market capitalization of SBI bank was Rs.7618.17. Highest market capitalization of SBI bank is in the year 2065/66 i.e Rs.12308.26 and lowest in the year 2067/68 i.e Rs.4935.16. The highest market capitalization of HBL is in the year 2064/65 i.e Rs.16054.04 million and lowest is in the year 2067/68 i.e Rs.6993.24. Likewise, In the year 2064/65 EBL has highest market capitalization i.e Rs.11838.96 and lowest in the year 2068/69 i.e Rs.6599.01. The highest market capitalization of NABIL Bank is in the year 2064/65 and lowest in the year 2067/68 i.e Rs.12091.15.

#### 4.1.6 Inter-Industry Comparison

To compare the size of industries, table 4.12 and fig 4.10 are presented below. We can observe that the banking industry has majority value of total market share i.e. 64.07 percent. Though the percentage value shown in the figure is in the round value but the 'trading' has covered the lowest market share value i.e. 985.32 million is equal to 0.02 percent.

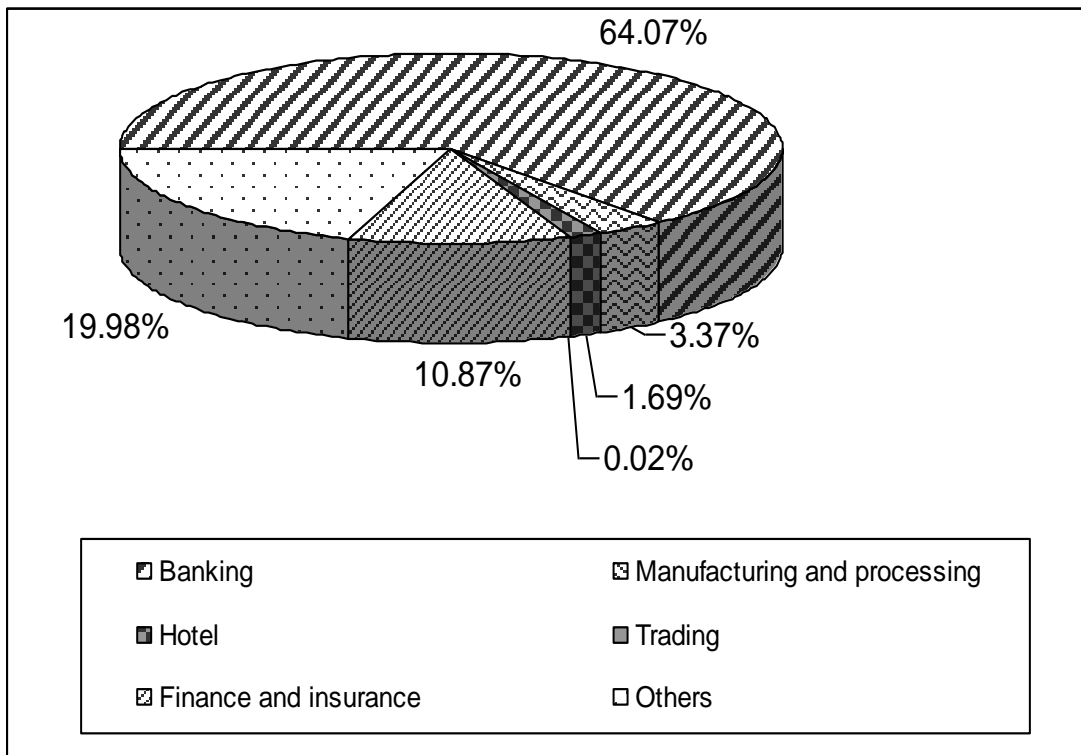
**Table 4.12: Market Capitalization of Each Industry at Ashad 31, 2070**

<b>Industry</b>	<b>Market Capitalization (Rs. In Million)</b>	<b>Percent</b>
Banking	292851.74	64.07%
Manufacturing and processing	15413.45	3.37%
Hotel	8691.97	1.69%
Trading	985.32	0.02%
Finance and insurance	49704.48	10.87%
Others	89418.42	19.98%
<b>Total</b>	<b>457065.38</b>	<b>100%</b>

Source: Nepal Stock Exchange, 2069/70

Table 4.12 shows Market capitalization of each industry. The above table shows that banking cover 64.07% of total market capitalization. Manufacturing industry covers 3.37%. And that of Hotel, Trading, Finance and Others are 1.69%, 0.02%, 10.87% and 19.98% respectively.

**Fig. 4.10: Market Capitalization of Each Industry at Ashad 31, 2070**



From figure 4.10 we can analyze that banking has highest market capitalization. It covers almost 64.07%. And others has 19.98% and its in second place. And trading industry has least percentage i.e 0.02%. Likewise manufacturing and hotel covers 3.37% and 1.69% respectively.

**Table 4.13: Industry wise Market Capitalization** (Rs. In million)

Industry	2063/64	2064/65	2065/66	2066/67	2067/68	2068/69	2069/70
Banking	135588.41	259955.25	302219.29	206282.52	165775.68	192836.17	292851.74
Manufacturing and Processing	6199.99	7516.87	7706.09	7592.03	10495.13	11830.16	15413.45
Hotel	3261.11	4809.65	4851.95	5285.58	5448.35	6457.91	8691.97
Trading	796.36	1170.24	1696.36	1617.51	1387.48	1116.90	985.32
Finance and Insurance	9889.32	37674.43	43007.13	29869.59	27476.98	24860.41	22293.60
Others	24.71	18.69	94369.16	69019.16	62868.42	75468.42	89418.42

*Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70.*

Table 4.13 shows that in the year 2065/66 Banking industry has highest market capitalization and in the year 2063/64 the market capitalization is lowest. Similarly, market capitalization of manufacturing is highest in the year 2069/70 i.e Rs.15413.45 million and lowest in the year 2063/64 i.e Rs.6199.99 million. Similarly, in the year 2066/67 finance sector is having highest market capitalization i.e Rs.29869.59 and lowest in the year 2063/64 i.e Rs.9889.32.

**Table 4.14: Industry-wise NEPSE Index at Closing Date of FY 2063/64 to 2069/70**

Year/ Industry	Banking	Mfg. and Pro.	Hotel	Trading	Fin. and Ins.	Others	Market
2063/64	789.21	348.63	251.47	155.37	471.82	818.12	683.95
2064/65	985.65	423.66	370.88	204.08	1152.74	768.26	963.36
2065/66	780.87	434.32	367.42	295.83	697.61	738.99	749.10
2066/67	456.93	427.89	400.26	282.08	397.38	540.48	477.73
2067/68	328.70	591.52	412.59	241.97	303.78	492.31	362.85
2068/69	358.57	666.76	489.04	191.97	267.01	590.98	389.74
2069/70	505.48	868.72	657.49	169.36	254.08	700.22	518.33

*Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70.*

Table 4.14 shows NEPSE Index from 2063/64-2069/70. As per Stock exchange trading report, banking sector has highest index in the year 2064/65 (985.65) and lowest in the year 2067/68 (328.70). Similarly highest index of manufacturing is in the year 2069/70 i.e 868.72 and lowest in the year 2063/64. Similarly highest index of finance is 1152.74 in the year 2064/65 and lowest is 254.08 in the year 2069/70. Likewise, highest index of market is in the year 2064/65 i.e 963.36 and lowest in the year 2067/68 i.e 362.85.

**Table 4.15: Expected Return, S.D. of Return and C.V. of Industries**

<b>Industry</b>	<b>Expected Return</b>	<b>S.D.</b>	<b>C.V.</b>	<b>Remarks</b>
Banking	0.13	0.43	3.31	Higher C.V
Mfg. and Pro.	0.18	0.144	0.8	Lower C.V.
Hotel	0.21	0.19	0.90	Lower C.V
Trading	0.01	0.19	1.9	Lower C.V.
Fin. and Ins.	0.26	0.73	2.81	Higher C.V.
Others	0.14	0.39	2.83	Higher C.V.
Market	0.10	0.41	4.10	

Expected rate of return, standard deviation and coefficient of variation are taken as main concern to make comparison between industries. Return of each industry is calculated on the basis of industry wise NEPSE index. Year-end industry-wise NEPSE index is given in Table 4.14. Detail of calculation of each variable of each industry is shown in Appendix (E –J).

Expected return of the portfolio of Finance and Insurance industries lies on the first position and that hotel industries lies on the second position. The expected return of finance and hotel industry is 26% and 21%. In comparison with rest industries ‘banking industries’ possesses highest coefficient of variation i.e 3.31.

#### 4.1.7 Comparison with Market

##### 4.1.7.1 Market Risk and Return

There is only one stock market in Nepal, known as Nepal stock exchange shortly NEPSE. Overall market movement of the country is represented by the NEPSE index. Portfolio market return, its standard deviation and coefficient of variation are shown in Table 4.16.

**Table 4.16: Calculation of Market Return, S.D. and C.V.**

FY	Nepse Index (NI)	$R_m = \frac{NI_t - NI_{t-1}}{NI_{t-1}}$	$(R_m - \bar{R}_m)$	$(R_m - \bar{R}_m)^2$
2063/64	683.95	0.77	0.67	0.45
2064/65	963.36	0.41	0.31	0.1
2065/66	749.10	(0.22)	(0.32)	0.10
2066/67	477.73	(0.36)	(0.46)	0.21
2067/68	362.85	(0.24)	(0.34)	0.12
2068/69	389.74	0.07	(0.03)	0.00
2069/70	518.33	0.33	0.23	0.05
<b>Total</b>		<b>0.76</b>	<b>0.06</b>	<b>1.03</b>

*Source: Nepal Stock Exchange Trading Report, 2063/64-2069/70.*

We have,

$$\begin{aligned} \text{Expected Return } (\bar{R}_m) &= \frac{\sum R_m}{n} \\ &= \frac{0.76}{7} \\ &= 0.10 \end{aligned}$$

$$\begin{aligned} \text{S.D. } (\sigma_m) &= \sqrt{\frac{\sum (R_m - \bar{R}_m)^2}{n - 1}} \\ &= \sqrt{\frac{1.03}{7 - 1}} \\ &= \sqrt{0.172} \\ &= 0.41 \end{aligned}$$

$$\begin{aligned}
C.V._m &= \frac{\sigma_m}{R_m} \\
&= \frac{0.41}{0.10} \\
&= 4.1
\end{aligned}$$

NEPSE index is very high in the year 2064/65 and thereafter NEPSE has been in decreasing trend till 2067/68. It is lowest i.e. at 362.85 in the FY 2067/68. The movement of NEPSE index during the observed year i.e. from 2063/64 to 2069/70 is shown in the figure 4.11. Market return in FY 2064/65 was very high and is very lower in F/Y 2067/68 i.e. 963.36 and 362.85 respectively.

In comparison with market return (10%), finance industries (26%) and hotel industry (21%) have higher return. Remaining industries viz. banking industry (2%), trading industry (2%), others industry (2%), finance industry (1%) have lower expected return.

In comparison with Market risk (41%), Manufacturing and processing industry (14.4%), Hotel Industry (19%), Trading industry (19%), banking (43%), finance (7%) and Others industry (39%) have lower risk than that of market.

**Fig. 4.11: NEPSE Index Movement**

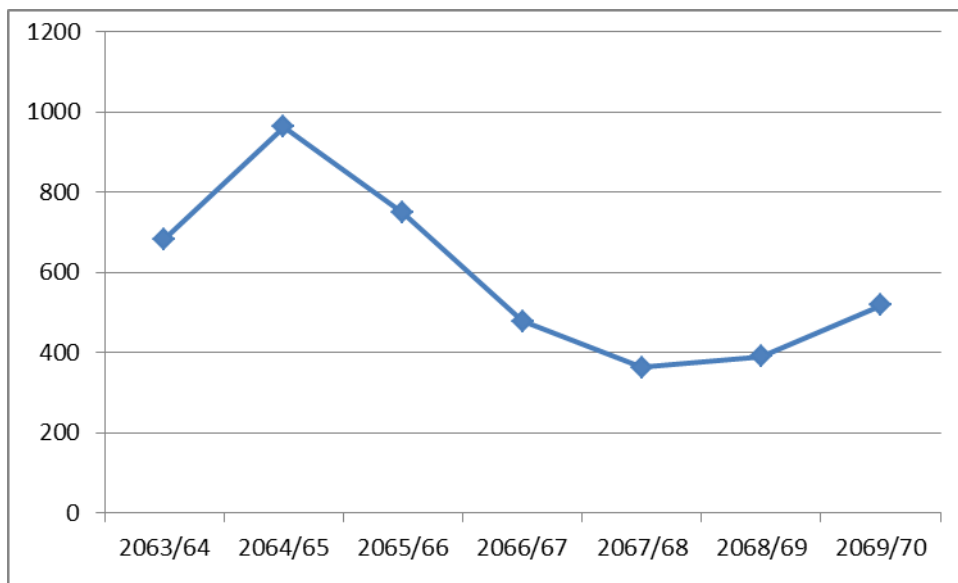


Figure 4.11 shows the NEPSE movement in graph. The figure shows that the NEPSE was 683.95 in 2063/64. Similarly figure shows NEPSE Index keeps on increasing and reached to highest point in the year 2064/65 i.e. 963.36. Then after index start decreasing and reached to 362.85 in the year 2067/68. Then after again NEPSE Index start increasing and reached to 518.33 in 2069/70.

## 4.2 Analysis of Market Sensitivity

Beta coefficient explains the market sensitivity. Higher the beta greater the sensitivity and higher will be the reaction to the market movement. Beta measures the systematic risk, which cannot be eliminated by mean of diversification.

Beta coefficient of market is always equal to one. . This statement can be proved as follows:

$$\beta_i = \frac{\text{Cov.}(R_i, R_m)}{\sigma_m^2} = \frac{\sigma_i \sigma_m \rho_{im}}{\sigma_m^2}$$

Where,

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

Hence,

$$\begin{aligned} \beta_m &= \frac{\text{Cov.}(R_m, R_m)}{\sigma_m^2} \\ &= \frac{\sigma_m \sigma_m \rho_{mm}}{\sigma_m^2} = 1, \text{ since } \rho_{mm} = 1 \end{aligned}$$

Hence, Beta coefficient of market is always equal to 1.

**Table 4.17: Beta Coefficient of each Bank**

Banks	Beta( $\beta$ )	Remarks
SBI	1.07	Risky
HBL	0.92	Less Risky
EBL	1.04	Risky
NABIL	1.12	Risky

Interpretation:

If  $\beta = 1$ , Stock is of average stock.

If  $\beta = 0.5$ , Stock is only half as risky, as the average risk.

If  $\beta = 2.$ , Stock is twice as risky as the average risk.

Since the NABIL, EBL and SBI bank have higher beta coefficient than that of market, the stocks of these banks are supposed to be aggressive. Himalayan bank have lower beta coefficient than market, so it is defensive stock. As per beta coefficient, NABIL's

stock is highly sensitive with market return. If the market return rises by 1%, NABIL's stock return will rise by 1.12%.

#### 4.2.1 Portfolio Analysis

A portfolio is a combination of different investment assets. The portfolio would be able to reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be added to a portfolio. It reduces a portfolio's total diversifiable risk to zero. Previous analysis to risk and return is based on the investment in single security. The expected return of portfolio is simply a weighted average of the expected return of the securities comprising that portfolio the weights are equal to the proportion of total fund invested in each security. The sum of weight must be 100%. Analysis have shown that many Nepalese private investor placed their entire wealth in single asset or investment. If they construct a portfolio or group of investment in such kind of assets, which are negatively correlated. They can reduce unsystematic risk dramatically without losing their return. Therefore, we need to extend our analysis of risk and return to portfolio context.

Here, we are going to analyze the portfolio. The analysis is based on two assets portfolio and the tools for analysis are described in the chapter - three, research Methodology.

Here the portfolio of the common stock of NABIL (let's suppose stock A) and common stock of Nepal SBI (let's suppose stock B) is analyzed. The following table 4.18 shows the calculation of covariance, correlation and the proportion of stock of the return of the given two stocks.

**Table 4.18: Cov ( $R_A, R_B$ ), Correlation ( $\rho_{AB}$ ) and Weights of Stock A and Stock B**

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$\frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{(R_B - \bar{R}_B)^2}$
2063/64	1.11	0.8	0.89
2064/65	(0.15)	0.12	(0.02)
2065/66	(0.27)	0.1	(0.03)
2066/67	(0.59)	(0.77)	0.45
2067/68	(0.26)	(0.40)	0.10
2068/69	(0.01)	(0.03)	0.00
2069/70	0.19	0.2	0.04
<b>Total</b>			<b>1.43</b>

We have,

$$\begin{aligned}\text{Cov}(R_A, R_B) &= \frac{\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n - 1} \\ &= \frac{1.43}{7 - 1} \\ &= 0.24\end{aligned}$$

The proportion of stock A and stock B, which minimizes the risk in the portfolio

$$\begin{aligned}W_A &= \frac{\sigma_B^2 - \text{Cov}(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{Cov}(R_A, R_B)} \\ &= \frac{0.242 - 0.24}{0.297 + 0.242 - 2 * 0.24} \\ &= \frac{0.002}{0.059} \\ &= 0.034 \text{ or } 3.4\%\end{aligned}$$

$$\begin{aligned}W_B &= 1 - W_A \\ &= 1 - 0.034 \\ &= 0.966 \text{ or } 96.6\%\end{aligned}$$

Where,

$\sigma_A^2$  = Variance of stock of NABIL

$\sigma_B^2$  = Variance of stock of SBI

$\text{Cov}(R_A, R_B)$  = Equivalent representation of covariance of covariance of returns between stock of NABIL and SBI

$W_A$  = Proportion of stock of NABIL.

$W_B$  = Proportion of stock of SBI

**Portfolio return:**

$$\begin{aligned}R_p &= W_A R_A + W_B R_B \\ &= 0.034 \times 0.16 + 0.966 \times 0.21 \\ &= 0.2083\end{aligned}$$

**Portfolio risk:**

$$\begin{aligned}\sigma_p &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2 W_A W_B \text{Cov.}(R_A, R_B)} \\ \sigma_p &= \sqrt{0.001 \times 0.297 + 0.933 \times 0.242 + 2 \times 0.034 \times 0.966 \times 0.24} \\ \sigma_p &= \sqrt{0.2418} \\ &= 0.49\end{aligned}$$

**Correlation:**

$$\begin{aligned} \rho_{AB} &= \frac{Cov(R_A, R_B)}{\sigma_A \cdot \sigma_B} \\ &= \frac{0.24}{0.54 \times 0.49} \\ &= 0.91 \end{aligned}$$

Since  $W_A = 0.034$ , and  $W_B = 0.966$ , this result indicates that if the investor wanted to minimize risk, he/she would have to invest 3.4% of his/her capital in stock A i.e. common stock of NABIL and 96.6% in stock B i.e. common stock of SBI.

The correlation between the return of the two securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1 then the portfolio cannot reduce any level of risk. And if the correlation is perfectly negative or -1, then the proper combination of the two securities can reduce unsystematic risk even upto zero. It means the positive correlation between securities is not so beneficial and vice-versa. Here, incase of portfolio of NABIL'S common stock and SBI's common stock, the correlation is positive correlation that's why the portfolio construction between these two stocks is not beneficial.

Again, the portfolio of the common stock of HBL (let's suppose stock A) and common stock of EBL (let's suppose stock B) is analyzed. The following table 4.19, shows the calculation of covariance, correlation and the proportion of stock of the return of the given two stocks.

**Table 4.19: Cov ( $R_A, R_B$ ), Correlation ( $\rho_{AB}$ ) and Weights of Stock A and Stock B**

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$\frac{(R_A - \bar{R}_A)(R_B - \bar{R}_B)}{(R_B - \bar{R}_B)^2}$
2063/64	0.47	0.63	0.29
2064/65	0.02	0.20	0.004
2065/66	(0.22)	(0.33)	0.07
2066/67	(0.62)	(0.44)	0.27
2067/68	(0.32)	(0.43)	0.14
2068/69	0.03	(0.15)	(0.004)
2069/70	0.65	0.54	0.35
<b>Total</b>			<b>1.12</b>

We have,

$$\begin{aligned}\text{Cov}(R_A, R_B) &= \frac{\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n - 1} \\ &= \frac{1.12}{7 - 1} \\ &= 0.19\end{aligned}$$

The proportion of stock A and stock B, which minimizes the risk in the portfolio

$$\begin{aligned}W_A &= \frac{\sigma_B^2 - \text{Cov}(R_A, R_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{Cov}(R_A, R_B)} \\ &= \frac{0.205 - 0.19}{0.195 + 0.205 - 2 * 0.19} \\ &= \frac{0.015}{0.02} \\ &= 0.75 \text{ or } 75\%\end{aligned}$$

$$\begin{aligned}W_B &= 1 - W_A \\ &= 1 - 0.75 \\ &= 0.25 \text{ or } 25\%\end{aligned}$$

Where,

$\sigma_A^2$  = Variance of stock of HBL

$\sigma_B^2$  = Variance of stock of EBL

$\text{Cov}(R_A, R_B)$  = Equivalent representation of covariance of covariance of returns between stock of HBL and EBL

$W_A$  = Proportion of stock of HBL.

$W_B$  = Proportion of stock of EBL

**Portfolio return:**

$$\begin{aligned}R_p &= W_A R_A + W_B R_B \\ &= 0.75 * 0.12 + 0.25 * 0.14 \\ &= 0.125\end{aligned}$$

**Portfolio risk:**

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{Cov.}(R_A, R_B)}$$

$$\sigma_p = \sqrt{0.562 * 0.195 + 0.062 * 0.205 + 2 * 0.75 * 0.25 * 0.19}$$

$$\begin{aligned} \sigma_p &= \sqrt{0.19} \\ &= 0.44 \end{aligned}$$

**Correlation ( $\rho_{AB}$ ):**

$$\begin{aligned} \rho_{AB} &= \frac{\text{Cov}(R_A, R_B)}{\sigma_A \cdot \sigma_B} \\ &= \frac{0.19}{0.44 * 0.45} \\ &= \frac{0.19}{0.198} \\ &= 0.95 \end{aligned}$$

Since  $W_A = 0.75$ , and  $W_B = 0.25$ , this result indicates that if the investor wanted to minimize risk, he/she would have to invest 75% of his/her capital in stock A i.e. common stock of HBL and the lower part 25% in stock B i.e. common stock of EBL.

The correlation between the return of the two securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1 then the portfolio cannot reduce any level of risk. And if the correlation is perfectly negative or -1, then the proper combination of the two securities can reduce unsystematic risk even upto zero. It means the positive correlation between securities is not so beneficial and vice-versa. Here, incase of portfolio of HBL'S common stock and EBL's common stock, the correlation is positive correlation that's why the portfolio construction between these two stocks is not beneficial.

**4.3 Major Findings of the Study**

Details of data, its presentation and analysis reveal that standard deviation of NABIL Bank is 54% which is highest of all the banks selected for study. Standard deviation of Nepal SBI Bank, Himalayan Bank and Everest Bank are 49%, 44% and 45% respectively. Depending upon this parameter i.e. S.D., Himalayan Bank stock is said to be relatively less risky. On the other hand, expected return of NABIL is 21% indicating its higher position in return and Nepal SBI Bank, Himalayan Bank and Everest Bank have 16%, 12% and 14% respectively in terms of expected return. Thus, both the parameters differ as to which stock to choose - as per S.D. investors must choose either

Himalayan Bank or Everest Bank (as it has lowest S.D.). While as per expected return, investors must choose either NABIL Bank or Nepal SBI Bank. To remove this difficulty regarding the choice of individual stocks, we can use other relative measure of risk i.e. Coefficient of Variance (C.V.). Stock of NABIL Bank, which has its C.V. least of all i.e. 2.57, is the best investment alternative as it has least risk per unit of expected return. CV's for other three banks – Himalayan, Everest and Nepal SBI are 3.66, 3.21 and 3.06 respectively.

Market Capitalization of the selected banks in 2069/70 i.e. Nepal SBI, Himalayan, Everest and NABIL are Rs.7424.57, Rs.8513.50, Rs.10163.63 and Rs.17528.31 (Rs. in Million) respectively. NABIL is in its highest position regarding the market capitalization and then Everest followed by Himalayan and Nepal SBI Bank. Out of the total market capitalization of various industries, banking sector covers most of the share i.e. 64.07%. Analysis and interpretation as to the industry wise NEPSE index shows that Manufacturing and Hotel sector has higher return than all others. Standard deviation seems in its lowest position for this sector.

Overall market risk and return can be accessed through over all NEPSE index. NEPSE index is very high in the year 2064/65 and it has decreased then after. It is lowest i.e. 362.85 in 2067/68. In comparison with Market risk (41%), Manufacturing and processing industry (14.4%), Hotel industry (19%), Trading industry (19%) and Others have lower risk than that of market risk, where as Banking industry (43%) and Finance industry (73%) have higher standard deviation. Beta Coefficient, which is sometimes called correct measure of risk shows the stocks return sensitivity relative to market. Beta coefficient of SBI, EBL and NABIL are 1.07, 1.04 and 1.12 respectively and are greater than 1, which indicates that return of stocks of SBI, EBL and NABIL are more volatile than that of market. For example, every 1% change in market return leads to 1.12% change in NABIL stock's return. Most of all of the banks have positive beta showing positive relationship with market return.

Investing in a single asset is riskier job. If investor constructs a portfolio i.e. group of investments, S/He can reduce risk dramatically without losing considerable return. Therefore, a brief analysis of risk and return is extended to portfolio context.

The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The weights are equal to the proportions of the total funds invested in each security. While the portfolio expected return is a straight forward weighted average of returns on the individual securities. The portfolio standard deviation is not the weighted average of individual security's standard deviation. Proper selection and combination of stocks from this sector to form portfolio will be very useful. Portfolio risks made up of stocks of Nepal SBI and NABIL were 49%, while it is 49% and 54% respectively if held individually. To what extent various Commercial Banks stocks are useful to form a portfolio is determined by the associated co-movement of returns of the stock and measured by their Correlation Coefficient.

Correlation Coefficient of NABIL and Nepal SBI is 0.91. Himalayan and Everest Bank is 0.95. Portfolio risk made up of stocks NABIL and Nepal SBI is 49% and Himalayan and Everest Bank is 44%. Portfolio made up of stocks Himalayan and Everest will be more useful than the portfolio made up of stocks NABIL & Nepal SBI. Likewise, portfolio made from combining SBI and NABIL do little toward reduction of the risk of individual stock as it has moderately positive correlation.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Summary**

Trade off between risk and return is the central focus of finance. And its major part stock market has greatest glamour, not only for the professionals or institutional investors but for the individual or private as well. Risk and return, a new and complex concept is also foundation of modern investment. Here, risk is defined as the variability of the return of a period. The greater the variability of the returns, the riskier the investment whereas an investment involves the sacrifice of current rupees for future rupees or reward, that future rupees or reward is called the return. It includes both current income and capital gains or losses that arise due to the increase or decrease on price of the security.

We have seen that every investment has the risk factor. And we should minimize the risk to maximize the return. For this we must follow the following statement, 'not to put all the eggs in one basket' It means appropriate portfolio should be constructed instead of investing in a single security. A portfolio is the combination of different investment assets. It would be able to reduce unsystematic or diversifiable risk. For this study, here, I have taken four commercial banks, which are listed in NEPSE. An analysis of the risks and return in common stocks of these banks are made in this study.

Stock market investment is the main focus of the study. Stock market investment can be both rewarding and fun so long as sufficient time is given to appreciate its many facets and characteristics. The relationship between risk and return described by investors perception about risk and their demand for compensation, all the investors will like to invest in non-risky assets. So, risk plays a vital role in the analysis of investment and to reach an investment decision. Higher risk gives bigger premium and the tradeoff between the two assumes a linear relationship between risk and risk premium.

Due to the various limitations and constraints, only four commercial banks viz. Nepal SBI Bank Limited, Himalayan Bank Limited, Nabil Bank Limited and Everest Bank Limited are taken as sample for the study. Total population of the study is commercial banks listed in NEPSE. A brief introduction in chapter - 1, review of literature in chapter-2, research methodology in chapter-3, data presentation and analysis in chapter-4, have been presented in a very simple and clear way as far as possible.

#### **5.2 Conclusions**

Details of data, its presentation and analysis reveal that standard deviation of NABIL is 54% which is highest of all the banks selected for study and the lowest standard deviation of HBL is 44% which is present low risk. Depending upon this parameter i.e.

S.D., HBL stock is said to be relatively less risky. On the other hand, expected return of SBI and NABIL is 16% and 21% respectively indicating its highest position in return and lowest return of HBL and EBL is 12% and 14% respectively. Thus, both the parameters differ as to which stock to choose - as per S.D. investors must choose HBL and EBL (as it has lowest S.D.) while as per expected return investors must choose SBI and NABIL. Market Capitalization of the selected banks, NABIL is in its highest position regarding the market capitalization and then NABIL followed by EBL, HBL and SBI. Out of the total market capitalization of various industries, banking sector covers most of the share i.e. 64.07%. Overall market risk and return can be accessed through over all NEPSE index. NEPSE index is very high in the year 2064/65 and it has decreased thereafter. It is lowest in the year 2067/68. Beta Coefficient, which is sometimes called correct measure of risk shows the stocks return sensitivity relative to market. Most of all of the banks have positive beta showing positive relationship with market return.

### **5.3 Recommendation**

Basically, this study has focused on individual investors who are going to invest their wealth on banking sector. Moreover, other components of stock market are also considered to some extent. Based on this study, individual investors can invest their wealth on right stocks. On the basis of the analysis and findings of this study, the following recommendations are prescribed. The recommendations are presented separately i.e. number-wise to different aspect of the study, which will be more beneficial and ease to understand and to improve present stock performance by the banks under study.

- Risk and return of banking sector is very divergent. It is suggested to analyze risk and return sincerely before investing in this sector. It is not always reliable to reach in a decision based on the risk and return. It is highly preferable to use CV. to reach to ideal investment alternatives. According to CV, NABIL is the best of all, as it has least C.V.
- Although there is chance of more return than that of expected, there is also a chance of heavy loss because stock market investment a risky job. So investor must be well aware of this fact and must be able to visualize and analyze the whole things. It is possible to beat the stock market but proper analysis of individual security, industry and overall market is always essential. General knowledge about economic, political and technological trend is advantageous.
- Investors need to diversify their fund to reduce risk. Efficient portfolio depends on market movement. For the portfolio construction Investor should select the stocks that have higher return and negative correlation or moderate positive correlation between stocks of different companies and sector. Similar, stocks

cannot diversify risk properly. Investors should follow the following guidelines: focus on fundamentals but keep an eye on technical, diversify moderately and periodically review and revise the portfolio. Investor like higher return but risk is inevitable thing attached with return. To reduce risk, portfolio evaluation from time to time is necessary. Managing portfolio construction, select the stocks those have higher return with less or negative correction. For our purpose, correlation of returns of the stocks of NABIL and SBI are least of all and accordingly, are the best of all for portfolio construction.

- Before making an investment decision in stock, assessment of personal risk attitude, needs and requirements will always be helpful. To make several discussions with stockbroker before reaching at the decision on the basis or reliable information rather than rumor and imagination will ultimately favor the investor. Investor should make their investment decisions based on financial parameters of the banks. They should not rush over the rumors.
- Aggressive investors play the equity game actively and vigorously. In addition to general suggestion the aggressive equity investors should bear in mind the following:
  - Focus on investments you understand and play your own game.
  - Monitor the environment with keenness.
  - Scout for special situations in the secondary market.
  - Pay need to growth shares.
  - Beware of the games operators play.
  - Invest selectively in new Issues.
  - Anticipate earnings ahead of market.
  - Leverage your portfolio when you are bullish.
  - Take swift corrective action.
- Conservative equity investors seek to minimize the investment risk as well as the time and effort devoted to portfolio management. Conservative equity investors should bear in mind the following suggestion specially applicable to them.
  - Apply stiff serenading criteria.
  - Look for relatively safe opportunities in the primary market.
  - Participate in the schemes of mutual funds.
  - Join a suitable portfolio management scheme.
  - Consult an investment advisor.
  - Refrain from short-term switch-hitting.
- To provide different type of securities at the same place to investors, NEPSE should manage the trading of government securities. It will increase the opportunities for well diversification of funds to investors and it will also increase the private investor's participation in government securities.

- Nepal Stock Exchange needs to modernize the trading system and effective information channel. It needs to develop different program for private investors. These programs will contribute to increase investor's rationality as well as market efficiency.
- The listed companies should operate their activity smoothly. They should publish their annual reports and information timely and correctly which will help to the investors to take the investment decision on their common stocks.
- At last, once again, common stock investment is risky. So investors should learn about the operations of the security market, the characteristics or various investment avenues available to them, the concept of time value of money, the basic models of security evaluation, the approach of fundamental analysis, the tools of technical analysis, the insights provided by modern investors research, and the way of resolving the key issues relating to the process of portfolio management. Now after learning above topics and subject matter investors should translate the knowledge and insights to gain from common stock investment.
- Further studies can be conducted by increasing sample size, study period by using other financial and statistical tools. Primary data also can be analyzed.

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# Appendix

## APPENDIX A

Beta Coefficient ( $\beta_j$ ) of the common stock of NABIL

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2063/64	1.11	0.67	0.74
2064/65	(0.15)	0.31	(0.04)
2065/66	(0.27)	(0.32)	0.09
2066/67	(0.59)	(0.46)	0.27
2067/68	(0.26)	(0.34)	0.09
2068/69	(0.01)	(0.03)	0.00
2069/70	0.19	0.23	0.04
Total			1.19

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{1.19}{7 - 1} = 0.19$$

$$\beta_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{0.19}{0.17} = 1.12$$

## APPENDIX B

Beta Coefficient ( $\beta_j$ ) of the common stock of SBI

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2063/64	0.8	0.67	0.54
2064/65	0.12	0.31	0.04
2065/66	0.10	(0.32)	(0.03)
2066/67	(0.77)	(0.46)	0.35
2067/68	(0.40)	(0.34)	0.14
2068/69	(0.03)	(0.03)	0.00
2069/70	0.20	0.23	0.05
Total			1.09

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{1.09}{7 - 1} = 0.182$$

$$\beta_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{0.182}{0.17} = 1.07$$

## APPENDIX C

Beta Coefficient ( $\beta_j$ ) of the common stock of HBL

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2063/64	0.47	0.67	0.31
2064/65	0.02	0.31	0.01
2065/66	(0.22)	(0.32)	0.07
2066/67	(0.62)	(0.46)	0.29
2067/68	(0.32)	(0.34)	0.11
2068/69	0.03	(0.03)	(0.001)
2069/70	0.65	0.23	0.15
Total			0.939

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{0.939}{7 - 1} = 0.157$$

$$\beta_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{0.157}{0.17} = 0.92$$

## APPENDIX D

Beta Coefficient ( $b_j$ ) of the common stock of EBL

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2063/64	0.63	0.67	0.42
2064/65	0.20	0.31	0.06
2065/66	(0.33)	(0.32)	0.11
2066/67	(0.44)	(0.46)	0.20
2067/68	(0.43)	(0.34)	0.15
2068/69	(0.15)	(0.03)	0.004
2069/70	0.54	0.23	0.12
Total			1.06

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{1.06}{7 - 1} = 0.177$$

$$\beta_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{0.177}{0.17} = 1.04$$

## APPENDIX E

Realized return, Standard Deviation and expected return and Coefficient of variance of  
banking sector

Year	Year End Price (P)	$R = \frac{BI_1 - BI_0}{BI_0}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2063/64	789.21	0.08	0.67	0.45
2064/65	985.65	0.30	0.17	0.03
2065/66	780.87	(0.20)	(0.33)	0.11
2066/67	456.93	(0.41)	(0.54)	0.29
2067/68	328.70	(0.20)	(0.33)	0.11
2068/69	358.57	(0.10)	(0.03)	0.00
2069/70	505.48	0.50	0.37	0.14
Total		0.89		1.13

*Source: Nepal Stock Exchange, 2063/64-2069/70*

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.89}{7} = 0.13$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{1.13}{7 - 1}} = \sqrt{0.188} = 0.43$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.43}{0.13} = 3.31$$

Where

$BI_0$  = Starting Banking sector's Index

$BI_1$  = Ending Banking sector's Index

## APPENDIX F

Realized return, Standard Deviation and expected return and Coefficient of variance of hotel sector

Year	Year End Price (P)	$R = \frac{HI_1 - HI_0}{HI_0}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2063/64	251.47	0.39	0.18	0.03
2064/65	370.88	0.47	0.26	0.07
2065/66	367.42	(0.009)	(0.22)	0.05
2066/67	400.26	0.09	(0.12)	0.01
2067/68	412.59	0.03	(0.18)	0.03
2068/69	489.04	0.18	(0.03)	0.00
2069/70	657.49	0.34	0.13	0.02
Total		1.50		0.21

*Source: Nepal Stock Exchange, 2063/64-2069/70*

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{1.50}{7} = 0.21$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{0.21}{7 - 1}} = \sqrt{0.035} = 0.19$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.19}{0.21} = 0.90$$

Where

$HI_0$  = Starting Hotel sector's Index

$HI_1$  = Ending Hotel sector's Index

## APPENDIX G

Realized return, Standard Deviation and expected return and Coefficient of variance of manufacturing sector

Year	Year End Price (P)	$R = \frac{MI_1 - MI_0}{MI_0}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2063/64	348.63	0.16	(0.02)	0.001
2064/65	423.66	0.23	0.05	0.002
2065/66	434.32	0.03	(0.15)	0.002
2066/67	427.89	(0.01)	(0.19)	0.04
2067/68	591.52	0.4	0.22	0.05
2068/69	666.76	0.13	(0.05)	0.002
2069/70	868.72	0.30	0.12	0.01
Total		1.24		0.125

*Source: Nepal Stock Exchange, 2063/64-2069/70*

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{1.24}{7} = 0.18$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{0.125}{7 - 1}} = \sqrt{0.03} = 0.144$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.144}{0.18} = 0.8$$

Where

$MI_0$  = Starting Manufacturing sector's Index

$MI_1$  = Ending Manufacturing sector's Index

## APPENDIX H

Realized return, Standard Deviation and expected return and Coefficient of variance of trading sector

Year	Year End Price (P)	$R = \frac{TI_1 - TI_0}{TI_0}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2063/64	155.37	0.05	(0.05)	0.003
2064/65	204.08	0.4	0.030	0.09
2065/66	295.83	0.4	0.30	0.09
2066/67	282.08	(0.04)	(0.14)	0.02
2067/68	241.97	(0.01)	(0.11)	0.01
2068/69	191.97	(0.02)	(0.12)	0.01
2069/70	169.36	(0.1)	(0.11)	0.01
Total		0.68		0.233

*Source: Nepal Stock Exchange, 2063/64-2069/70*

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{0.68}{7} = 0.1$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{0.233}{7 - 1}} = \sqrt{0.0388} = 0.19$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.19}{0.1} = 1.9$$

Where

$TI_0$  = Starting Trading sector's Index

$TI_1$  = Ending Trading sector's Index

## APPENDIX I

Realized return, Standard Deviation and expected return and Coefficient of variance of  
Finance and Insurance sector

Year	Year End Price (P)	$R = \frac{FI_1 - FI_0}{FI_0}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2063/64	471.82	1.18	0.92	0.85
2064/65	1152.74	1.14	1.18	1.39
2065/66	697.61	(0.04)	(0.30)	0.09
2066/67	397.38	(0.4)	(0.66)	0.44
2067/68	303.78	(0.23)	(0.49)	0.24
2068/69	267.01	(0.12)	(0.38)	0.14
2069/70	254.08	(0.04)	(0.30)	0.09
Total		1.79		3.24

*Source: Nepal Stock Exchange, 2063/64-2069/70*

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{1.79}{7} = 0.26$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{3.24}{7 - 1}} = \sqrt{0.54} = 0.73$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.73}{0.26} = 2.81$$

Where

$FI_0$  = Starting Finance and Insurance sector's Index

$FI_1$  = Ending Finance and Insurance sector's Index

## APPENDIX J

Realized return, Standard Deviation and expected return and Coefficient of variance of other sector

Year	Year End Price (P)	$R = \frac{OI_1 - OI_0}{OI_0}$	$(R - \bar{R})$	$(R - \bar{R})^2$
2063/64	818.12	0.99	0.85	0.72
2064/65	768.26	(0.06)	(0.20)	0.14
2065/66	738.99	(0.03)	(0.17)	0.003
2066/67	540.48	(0.2)	(0.34)	0.12
2067/68	492.31	(0.08)	(0.22)	0.05
2068/69	590.98	0.20	0.06	0.003
2069/70	700.22	0.18	0.04	0.002
Total		1		0.938

*Source: Nepal Stock Exchange, 2063/64-2069/70*

We have,

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{1}{7} = 0.14$$

$$\text{S.D. } (\sigma) = \sqrt{\frac{\sum (R - \bar{R})^2}{n - 1}} = \sqrt{\frac{0.938}{7 - 1}} = \sqrt{0.1563} = 0.395$$

$$\text{C.V.} = \frac{\sigma}{\bar{R}} = \frac{0.395}{0.14} = 2.83$$

Where

$OI_0$  = Starting other sector's Index

$OI_1$  = Ending other sector's Index

Particulars		PRINCIPAL INDICATORS (At Least for Previous 5 Years)				
		Indicators				
		F.Y. 2060/2061	F.Y. 2061/2062	F.Y. 2062/2063	F.Y. 2063/2064	F.Y. 2064/2065
1. Percent of Net Profit/Gross Income	%	9.95	7.98	14.63	26.95	22.67
2. Earnings Per Share	Rs.	14.26	13.29	18.27	39.35	28.33
3. Market Value per Share	Rs.	307.00	335.00	612.00	1,176.00	1511.00
4. Price Earning Ratio	%	21.54	25.21	33.49	29.89	53.34
5. Dividend (including bonus) on share capital	%	-	-	5.00	47.59	0.00
6. Cash Dividend on Share Capital	%	-	-	5.00	12.59	0.00
7. Interest Income/Loans & Advances	%	8.10	7.72	7.38	7.01	6.75
8. Staff Expenses/Total Operating Expenses	%	8.77	9.72	10.43	9.09	10.98
9. Interest Expenses /Total Deposit and Borrowings	%	3.50	2.83	2.88	3.36	2.93
10. Exchange Gain/Total Income	%	5.01	4.50	5.38	5.23	4.76
11. Staff (Statutory) Bonus/ Total Staff Expenses	%	27.24	27.01	28.33	39.30	31.73
12. Net Profit/Loans & Advances	%	1.12	0.87	1.53	2.69	2.05
13. Net Profit/ Total Assets	%	0.72	0.55	0.90	1.83	1.44
14. Total Credit/Deposit	%	76.85	77.87	69.32	82.66	88.32
15. Total Operating Expenses/Total Assets	%	4.46	3.74	3.72	4.21	3.97
16. Adequacy of Capital Fund on Risk Weightage Assets						
a. Core Capital	%	9.47	8.68	10.53	10.53	9.97
b. Supplementary Capital	%	1.47	0.79	3.04	2.76	2.35
c. Total Capital Fund	%	10.95	9.47	13.57	13.29	12.32
17. Liquidity (CRR)	%	7.74	5.26	5.83	5.60	5.72
18. Non Performing Credit/Total Credit	%	6.25	6.54	6.13	4.56	3.83
19. Weighted Average Interest Rate Spread	%	3.55	3.68	3.33	3.01	3.11
20. Book Net worth	Rs.	636,636,726	689,013,061	971,729,028	1,153,313,329	1,404,264,131
21. Total Shares	No.	4,268,759	4,318,656	6,402,361	6,477,984	8,745,278
22. Total Staff	No.	151	164	174	189	249
23. Return on Shareholder's Equity	%	9.71	8.33	12.04	22.10	17.64
24. Book Value Per Share	Rs.	146.80	159.54	151.78	178.04	160.57
25. Return on Net Fixed Assets	%	97.60	86.36	175.38	262.20	206.09
26. Total Interest Earning to External Assets	%	7.00	6.56	6.31	6.86	6.38
27. Total Cost to Net Interest Income & Other Income	%	37.34	31.46	32.84	32.54	35.66



SCHEDULE 31

PRINCIPAL INDICATORS  
(FOR 5 YEARS)

Particulars	Indicators	F. Y.	F. Y.	F. Y.	F. Y.	F. Y.
		2065/2066	2066/2067	2067/2068	2068/2069	2069/2070
1. Percent of Net Profit/Gross Income	%	19.14	15.36	13.21	11.25	16.47
2. Earnings Per Share	Rs.	36.18	23.69	24.85	22.93	32.75
3. Market Value per Share	Rs.	1,900.00	741.00	565.00	635.00	850.00
4. Price Earning Ratio	Times	52.52	31.28	22.73	27.69	25.95
5. Dividend (including bonus) on share capital	%	42.11	17.50	17.50	17.50	20.00
6. Cash Dividend on Share Capital	%	2.11	5.00	5.00	5.00	7.50
7. Interest Income/Loans & Advances	%	7.56	9.80	11.24	11.27	11.20
8. Staff Expenses/Total Operating Expenses	%	10.42	6.80	9.13	8.22	12.32
9. Interest Expenses /Total Deposit and Borrowings	%	2.93	4.11	4.92	5.14	4.16
10. Exchange Gain/Total Income	%	3.71	2.76	2.01	2.37	2.18
11. Staff (Statutory) Bonus/ Total Staff Expenses	%	26.64	29.23	20.37	19.19	21.04
12. Net Profit/Loans & Advances	%	2.03	2.18	2.14	1.81	2.64
13. Net Profit/ Total Assets	%	1.05	1.03	1.01	0.83	1.19
14. Total Credit/Deposit	%	55.84	51.48	51.20	49.62	49.55
15. Total Operating Expenses/Total Assets	%	3.88	5.04	6.07	6.06	5.22
16. Adequacy of Capital Fund on Risk Weightage Assets						
a. Core Capital	%	10.03	10.89	10.32	9.16	9.59%
b. Supplementary Capital	%	1.89	1.36	1.20	2.05	2.80%
c. Total Capital Fund	%	11.92	12.25	11.52	11.21	12.39%
17. Liquidity (CRR)	%	6.67	9.03	7.00	8.33	9.58
18. Non Performing Credit/Total Credit	%	2.02	1.48	1.10	0.54	0.37
19. Weighted Average Interest Rate Spread	%	2.84	2.76	2.86	2.70	3.38
20. Book Net worth	Rs.	1,702,571,354	2,440,863,070	2,869,602,150	3,196,710,863	3,798,957,417
21. Total Shares	No.	8,745,278	16,536,239	18,693,033	20,939,898	23,557,385
22. Total Staff	No.	323	485	505	538	538
23. Return on Shareholder's Equity	%	18.58	16.05	16.19	15.02	20.31
24. Book Value Per Share	Rs.	194.68	147.61	153.51	152.66	161.26
25. Return on Net Fixed Assets	%	124.76	93.66	111.41	67.06	116.61
26. Total Interest Earning to External Assets	%	5.14	6.72	7.71	7.45	7.52

SCHEDULE 30(D) : OPERATIONAL RISK

PARTICULARS	AS ON		AS ON	
	JULY 16, 2007	JULY 15, 2008	JULY 15, 2009	JULY 15, 2010
Net Interest Income	977,832,001	1,008,171,370	1,139,302,634	1,139,302,634
Commission and Discount Income	160,447,272	193,224,228	167,819,993	167,819,993
Other Operating Income	52,324,749	40,228,872	62,103,241	62,103,241
Exchange Fluctuation Income	199,130,134	151,037,322	207,669,178	207,669,178
Additional/Reduction in Interest Suspense during the period	61,415,150	(151,240,143)	10,917,784	10,917,784
<b>Gross Income (a)</b>	<b>1,454,949,306</b>	<b>1,242,121,649</b>	<b>1,608,412,620</b>	<b>1,608,412,620</b>
Atts (b)	15%	15%	15%	15%
<b>Fixed percentage of Gross Income [c=(a*b)]</b>	<b>218,242,396</b>	<b>186,318,247</b>	<b>241,261,923</b>	<b>241,261,923</b>
Capital Requirement for operational risk (d) (average of c)	215,274,189			
Risk Weight (reciprocal of capital requirement of 10% in times (d))	10			
<b>Equivalent Risk Weight Exposure [e=(d*d)]</b>	<b>2,152,741,838</b>			

(Amount in Rs.)

SCHEDULE 30(E) : MARKET RISK

S.NO.	CURRENCY	OPEN POSITION (FCY)	MID RATE	OPEN POSITION (NPR)	RELEVANT OPEN POSITION
1	AED	(17,505)	19.63	(343,536)	343,536
2	AUD	(12,111)	62.16	(752,731)	752,731
3	CAD	(22,293)	68.50	(1,520,765)	1,520,765
4	CHF	(32,024)	71.38	(2,285,847)	2,285,847
5	CNY	(52,230)	11.33	(591,505)	591,505
6	DKK	(17,030)	14.38	(244,469)	244,469
7	EUR	(91,856)	108.60	(9,970,397)	9,970,397
8	GBP	(26,934)	126.85	(3,416,443)	3,416,443
9	HKD	(97,640)	9.94	(970,542)	970,542
10	INR	(91,355,682)	0.83	(76,627,926)	146,237,926
11	JPY	(33,542,388)	0.83	(27,974,335)	27,974,335
12	KRW	(5,500)	20.16	(111,489)	111,485
13	NOK	(12,100)	11.75	(142,327)	1,432,327
14	QAR	(11,342)	19.79	(224,401)	224,401
15	SAR	(30,127)	19.26	(580,195)	580,195
16	SEK	(109)	9.80	(1,069)	960
17	SGD	(43,016)	53.73	(2,343,268)	2,343,268
18	THB	(67,009)	2.25	(150,259)	150,259
19	USD	(69,045)	77.90	(46,089,495)	46,089,495
<b>Total Open Position (a)</b>					<b>248,600,890</b>
<b>Fixed Percentage (b)</b>					<b>5%</b>
<b>Capital Charge for Market Risk [c=(a*b)]</b>					<b>12,430,195</b>
<b>Risk Weight (reciprocal of capital requirement of 10% in times (d))</b>					<b>10</b>
<b>Equivalent Risk Weight Exposure [e=(c*d)]</b>					<b>124,301,950</b>

(Amount in Rs.)

SCHEDULE 31 : PRINCIPAL INDICATORS FOR LAST FIVE YEARS

PARTICULARS	UNIT	FY	FY	FY	FY	FY	
		2004/2005 2005/2006	2006/2007 2007/2008	2008/2009 2009/2010	2010/2011 2011/2012	2012/2013 2013/2014	2014/2015 2015/2016
Net Profit/Total Income	Percent	32.98	35.16	34.00	34.00	41.59	39.95
Per Share Income	Rs.	47.91	59.24	60.66	62.74	61.50	61.50
Price Earning Ratio	Ratio	9.00	11.00	17.60	18.00	17.60	17.60
Dividend in Share Capital (Including Bonus)	Percent	10.20	18.57	28.69	31.56	28.43	28.43
Cash Dividend in Share Capital	Percent	11.58	35.00	40.00	45.00	43.56	43.56
Interest Income/Loan and Advances	Percent	10.75	10.32	9.98	25.00	12.00	12.00
Staff Expenses/Total Operating Expenses	Percent	41.95	41.57	47.40	45.31	47.54	47.54
Interest Expenses in Total Deposit	Percent	2.26	2.46	2.55	2.59	2.70	2.70
FX Fluctuation Gain/Total Income	Percent	7.80	9.42	6.71	8.27	8.51	8.51
Staff Bonus/Total Staff Expenses	Percent	24.53	22.28	19.78	24.51	22.81	22.81
Net Profit/Loan and Advances	Percent	2.48	3.12	2.89	3.26	3.04	3.04
Net Profit/Total Assets	Ratio	1.11	1.56	1.47	1.76	1.91	1.91
Total Loan/Deposits	Percent	50.07	55.27	56.57	61.23	71.49	71.49
Total Operating Expenses/Total Income	Percent	29.16	30.02	30.32	29.14	29.49	29.49
Capital Adequacy Ratio:							
A. Core Capital	Percent	8.33	8.65	9.61	9.26	8.81	8.81
B. Supplementary Capital	Percent	2.68	2.62	1.51	3.06	2.21	2.21
C. Total Capital Fund	Percent	11.01	11.26	11.13	12.42	11.02	11.02
Liquidity (CAR)	Percent	7.86	3.52	3.02	5.13	6.76	6.76
Non-performing Loan/Total Loan	Percent	7.44	6.06	3.61	2.36	2.16	2.16
Weighted Average Interest Rate Spread	Percent	3.19	3.30	3.57	3.66	3.66	3.66
Book Networth per share	Number	230.50	228.72	281.74	247.95	256.52	256.52
Total Share	Number	6,435,000	7,722,000	8,106,100	10,135,125	12,162,150	12,162,150
Total Staff	Number	501	561	584	591	591	591

**Schedule 31 : Principal Indicators for Last Five Years**

Particulars	Unit	FY	FY	FY	FY	FY
		2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
		2065/2066	2066/2067	2067/2068	2068/2069	2069/2070
Net Profit/Total Income	Percent	39.96	22.13	25.46	24.65	25.19
Per Share Income	Rs.	61.90	31.80	44.66	39.94	34.19
Per Share Market Value	Rs.	1760	816	575	653	700
Price Earning Ratio	Ratio	28.43	25.66	12.88	16.35	20.47
Dividend on Share Capital (Including Bonus)	Percent	43.56	36.84	36.84	28.42	15.00
Cash Dividend on Share Capital	Percent	12.00	11.84	16.84	13.42	10.00
Interest Income/Loan and Advances	Percent	9.18	10.81	13.12	13.14	11.27
Staff Expenses/Total Operating Expenses	Percent	47.54	46.83	47.06	47.03	44.49
Interest Expenses on Total Deposit	Percent	2.70	4.13	5.90	5.90	3.99
FX Fluctuation Gain/Total Income	Percent	8.51	4.80	3.66	5.00	5.00
Staff Bonus/Total Staff Expenses	Percent	22.81	15.41	19.30	17.97	16.78
Net Profit/Loan and Advances	Percent	3.04	1.82	2.83	2.74	2.38
Net Profit/Total Assets	Ratio	1.91	1.19	1.91	1.76	1.54
Total Loan/Deposits	Percent	73.58	77.43	80.57	75.36	77.36
Total Operating Expenses/Total Income	Percent	29.49	25.60	22.88	24.00	27.83
Capital Adequacy Ratio:						
A. Core Capital	Percent	8.81	8.68	8.88	9.60	8.96
B. Supplementary Capital	Percent	2.21	2.04	1.80	1.43	2.60
C. Total Capital Fund	Percent	11.02	10.72	10.68	11.02	11.55
Liquidity ( CRR )	Percent	6.76	6.76	5.75	8.72	6.08
Non-performing Loan/Total Loan	Percent	2.16	3.52	4.22	2.09	2.89
Weighted Average Interest Rate Spread	Percent	3.66	4.21	3.96	4.25	4.25
Book Networth per share	Rs.	25652	226.79	199.77	193.00	192.02
Total Share	Number	12,162,150	16,000,000	20,000,000	24,000,000	27,600,000
Total Staff	Number	591	577	647	793	830

## Main Indicators

Schedule- 4.31

	Particulars	Indicators	FY 2003/04 (FY 060/61)	FY 2004/05 (FY 061/62)	FY 2005/06 (FY 062/63)	FY 2006/07 (FY 063/64)	FY 2006/07 (FY 063/64)	FY 2008/09 (FY 063/64)
1	Net Profit/Total Income	%	18.3	19.9	22.2	21.6	24.2	24.92
2	Per share Earning (after tax income)	Rs.	45.58	54.22	62.78	78.42	91.82	99.99
3	Market price per share	Rs.	680	870	1379	2430	3132	2455
4	Price/Earning Ratio	Ratio	14.93	16.04	21.97	30.99	34.11	24.55
5	Dividend on share- Bonus Share	%		20	-	30	30	30
6	Cash Dividend	%	20	-	25	10	20	30
7	Interest Income/Loans & advances	%	9.2	8.0	7.6	6.9	7.1	7.57
8	Employee expenses/Total operating expenses	%	10.3	12.4	11.5	11.0	15.4	12.53
9	Interest expenses/Total deposits & borrowing	%	3.9	2.9	2.8	2.7	2.6	2.98
10	Exchange Income/Total Income	%	3.5	3.2	2.2	2.1	3.5	2.44
11	Staff bonus/total employee expenses	%	48.2	46.3	48.7	52.8	41.7	47.68
12	Net Profit/Loans & advances	%	2.4	2.2	2.3	2.1	2.4	2.61
13	Net Profit/Total Assets	%	1.5	1.4	1.5	1.4	1.7	1.73
14	Total Loans & advances/Total Deposits	%	75.6	78.2	73.4	77.4	78.6	73.43
15	Total operating expenses/Total Assets	%	6	4.1	3.9	3.6	3.7	4.04
16	Capital Adequacy Ratio:							
	a) Core Capital	%	9.58	8.88	8.21	7.82	9.04	7.73
	b) Supplementary Capital	%	1.49	4.69	4.11	3.38	2.40	2.82
	c) Total Capital Funds	%	11.07	13.57	12.32	11.20	11.44	10.55
17	Cash Reserve Ratio (CRR)	%	1.6	1.9	1.9	2.9	3.4	2.83
18	NPAs/Total Loans & advances	%	1.7	1.63	1.27	0.80	0.68	0.48
19	Weighted Average Interest Rate Spread	%	3.98	4.06	3.99	3.91	4.34	4.40
20	Book Net worth (Rs. in Lacs)	Rs.	5403	6926	8228	10615	15812	20036
21	Total Shares	Number	3150000	3150000	3780000	3780000	4914000	6388210
22	Total Employee	Number	250	257	306	393	449	521
23	Others-							
	- Per employee Business (Rs. in Lakh)	Rs.	566.6	700.3	782.3	821.1	954	1082
	- Employee expenses/Total Income	%	6.2	7.1	6.7	6.3	8.5	7.29

Note : CRR have been calculated on the basis of year end figures.



## Main Indicators

Schedule 4.31

Particulars	Indicator	Financial Years				
		2008/09	2009/10	2010/11	2011/12	2012/13
1 Net Profit/Total Income	%	24.92	16.49	14.27	14.36	17.69
2 Per Share Earning (after tax income)	Rs.	99.99	100.16	83.18	88.55	91.88
3 Market Price Per Share	Rs.	2455	1630	1094	1033	1591
4 Price/Earning Ratio	Times	24.55	16.27	13.15	11.67	17.32
5 Dividend on Share- Bonus Share	%	30	30	10	30	10
6 Cash Dividend	%	30	30	50	-	50
7 Interest Income/Loans & Advances	%	7.57	9.95	12.22	12.30	10.49
8 Employee Expenses/Total Operating Expenses	%	12.53	10.52	9.13	9.53	14.66
9 Interest Expenses/Total Deposits & Borrowing	%	2.98	4.18	6.05	5.75	3.72
10 Exchange Income/Total Income	%	2.44	-	0.05	-	0.08
11 Staff Bonus/Total Employee Expenses	%	47.68	52.48	45.41	44.26	45.49
12 Net Profit/Loans & Advances	%	2.61	2.95	2.94	2.98	3.33
13 Net Profit/Total Assets	%	1.73	2.09	2.10	2.11	2.39
14 Total Loans & Advances/Total Deposits	%	73.43	76.24	76.98	73.22	76.57
15 Total Operating Expenses/Total Assets	%	4.04	5.20	6.95	6.62	4.79
16 Capital Adequacy Ratio:						
a) Core Capital	%	8.52	8.39	8.46	9.61	9.31
b) Supplementary Capital	%	2.82	2.38	1.97	1.41	2.28
c) Total Capital Funds	%	11.34	10.77	10.43	11.02	11.59
17 Cash Reserve Ratio (CRR)	%	14.26	15.53	9.55	17.22	15.19
18 NPAs/Total Loans & Advances	%	0.48	0.16	0.34	0.84	0.62
19 Weighted Average Interest Rate Spread	%	4.40	4.78	4.60	5.32	5.68
20 Book Net Worth (Rs. in Lacs)	Rs.	22054	27571	36407	40173	46678
21 Total Shares	Number	6388210	8304673	11196095	12316357	16011264
22 Total Employee	Number	534	568	586	625	643
23 Others						
- Per Employee Business (Rs. in Lakh)	Rs.	1082	1146	1242	1386	1585
- Employee Expenses/Total Income	%	7.29	4.50	4.49	4.65	5.56

Note: CRR Amount has been taken as Year end Balance.

## Principal Indicators

Schedule 31

S. N.	Particulars	Indicators	Financial Year						
			2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
1	Net Profit/Gross Income	%	34.33	35.32	32.16	29.68	30.56	24.11	22.29
2	Earnings Per Share	Rs.	105.49	129.21	137.08	115.86	113.44	83.81	70.67
3	Market Value per Share	Rs.	1,505	2,240	5,050	5,275	4,899	2,384	1,252
4	Price Earning Ratio	Times	14.27	17.34	36.84	45.53	43.19	28.45	17.72
5	Dividend (including bonus) on share capital	%	70.00	85.00	140.00	100.00	85.00	70.00	30.00
6	Cash Dividend on Share Capital	%	70.00	85.00	100.00	60.00	35.00	30.00	30.00
7	Interest Income/Loans & Advances	%	8.70	8.29	8.14	8.04	8.82	10.41	12.50
8	Employee Expense/Total Operating Expense	%	31.50	28.93	24.41	21.17	23.96	13.79	11.91
9	Interest Expense on Total Deposit and Borrowings	%	1.68	2.09	2.54	2.64	3.22	4.43	6.15
10	Exchange Gain/Total Income	%	12.24	10.31	10.02	7.81	7.47	6.17	4.60
11	Staff Bonus/ Total Employee Expenses	%	42.20	40.86	41.43	41.42	43.50	44.29	42.05
12	Net Profit/Loans & Advances	%	5.32	5.24	4.62	3.96	4.02	3.47	3.73
13	Net Profit/ Total Assets	%	3.06	3.23	2.72	2.32	2.55	2.37	2.43
14	Total Credit/Deposit	%	75.05	68.63	68.13	68.18	73.87	71.17	78.29
15	Total Operating Expenses/Total Assets	%	3.73	3.86	3.97	3.86	4.34	5.54	6.91
16	Capital Adequacy								
	a. Core Capital	%	11.35	10.78	10.40	8.75	8.74	8.77	8.83
	b. Supplementary Capital	%	1.09	1.52	1.64	2.35	1.96	1.73	1.75
	c. Total Capital Fund	%	12.44	12.31	12.04	11.10	10.70	10.50	10.58
17	Liquidity (CRR)	%	3.83	3.26	6.00	8.37	9.03	3.02	4.90
18	Non Performing Loans/Total Loans	%	1.32	1.38	1.12	0.74	0.80	1.48	1.77
19	Weighted Average Interest Rate Spread	%	5.01	4.90	4.15	3.94	4.16	4.40	4.37
20	Book Net Worth per Share	NRs.	337	381	418	354	324	265	225
21	Total Shares	Number	4,916,544	4,916,544	4,916,544	6,892,160	9,657,470	14,491,240	20,297,694
22	Total Permanent Employees	Number	426	441	427	416	505	557	657
23	Weighted Average Number of Ordinary Shares Outstanding	Number	4,916,544	4,916,544	4,916,544	6,442,910	9,089,256	13,590,702	18,929,598
24	Return on Equity	%	29.86	32.16	30.47	30.72	42.22	36.39	29.69
25	Return on Assets	%	3.08	3.23	2.72	2.32	2.55	2.38	2.43
26	Dividend Payout Ratio	%	66.36	65.78	102.13	92.33	79.62	89.05	42.45
27	Earnings Yield	%	7.01	5.77	2.71	2.20	2.32	3.52	5.64
28	Dividend Yield	%	4.65	3.79	2.77	1.90	1.74	2.94	2.40
29	Cost to Income Ratio	%	45.81	44.25	48.34	51.14	52.11	56.31	63.50
30	Total Assets to Shareholders' Fund	times	10.29	11.91	13.25	15.24	14.01	13.59	12.73
31	Shareholders' Fund to Liability including Contingent Liability	%	8.25	7.22	6.66	5.74	5.98	6.21	6.61
32	Number of Offices	Number	18	18	19	28	328	39	49
33	Number of ATMs	Number	13	14	20	32	48	63	68

## Note:

- Gross Income in S.N. 1 comprises of Interest Income, Commission and Discount, Other Operating Income and Exchange Income.
- EPS in S.No.2 is restated in line with Nepal Accounting Standard (NAS) 26 Earning Per Share that requires computation of EPS dividing earnings attributable to equity holders by weighted average number of shares. Weighted average number of ordinary shares outstanding (in S.No.23) during the period is the number of ordinary shares outstanding at the beginning of the period, adjusted by the number of ordinary shares bought back or issued during the period multiplied by a time-weighting factor. The time-weighting factor is the number of days that the shares are outstanding as a proportion of the total number of days in the period. Bank's basic and diluted EPS is same since there are no potential ordinary shares outstanding as on the balance sheet date.
- Market Value per Share in S.N. 3 is the closing price quoted in Nepal Stock Exchange on Thursday, the 14th July 2011, being last trading day for the week.
- The interest income in S. N. 7 is the interest income from loans and advances (excluding staff loans) only. The loans and advances are the average loans and advances for the entire financial year. The average balance during the year was Rs. 35,844,114,123.
- Total Operating Expense in S.N. 8 comprises Interest Expense, Staff Expense and Other Operating Expense.
- The Deposits and Borrowings in S.N.9 are the average deposits and borrowings (including debentures) for the entire financial year. The average balances of deposits and borrowing during the year were Rs. 47,472,586,863.53 and Rs. 616,586,076.71, respectively.
- Total Income in S.N. 10 is same as Gross Income in S.N. 1 comprising of Interest Income, Commission and Discount, Other Operating Income and Exchange Income.
- The Loans and Advances in S.N. 12 is same as Loans and Advances in S.N. 7 and is the average balance for the entire financial year.
- Total Assets in S.N. 13 and S.N. 15 are average balance of assets computed by averaging outstanding balance of previous financial year and current financial year.
- Credit and Deposit in S.N. 14 is the outstanding balance as of balance sheet date.
- CRR in the S.N. 17 is computed on the basis of cash and cash equivalents and deposits outstanding on the balance sheet date. The CRR (as per NRB Directives) for the last week of the current financial year is 5.64%.
- NPA ratio in S.N. 18 for year 2009/10 restated as 1.48 from 1.47 after restatement of non-performing assets which also included restructured / rescheduled loans.
- Earnings Yield represent earning (attributable to equityholders) per market value of share.
- Dividend Yield represent dividend per market value of share.

## Principal Indicators

Schedule 31

(As at 15 July 2013)

S.N.	PARTICULARS	INDICATORS	FINANCIAL YEAR					
			2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
1	Net Profit/Gross Income	%	29.68	30.56	24.11	22.29	23.74	32.66
2	Earnings Per Share	Rs.	115.86	113.44	83.81	70.67	83.23	95.14
3	Market Value per Share	Rs.	5,275	4,899	2,384	1,252	1,355	1,815
4	Price Earning Ratio	Times	45.53	43.19	28.45	17.72	16.21	19.08
5	Dividend (including bonus) on share capital	%	100.00	85.00	70.00	30.00	60.00	65.00
6	Cash Dividend on Share Capital	%	60.00	35.00	30.00	30.00	40.00	40.00
7	Interest Income/Loans & Advances	%	8.04	8.82	10.41	12.50	12.85	11.64
8	Employee Expense/Total Operating Expense	%	21.17	23.96	13.79	11.91	12.26	19.59
9	Interest Expense on Total Deposit and Borrowings	%	2.64	3.22	4.43	6.15	5.74	3.67
10	Exchange Gain/Total Income	%	7.81	7.47	6.17	4.60	6.26	7.20
11	Staff Bonus/ Total Employee Expenses	%	41.42	43.50	44.29	42.05	48.26	48.90
12	Net Profit/Loans & Advances	%	3.96	4.02	3.47	3.73	4.14	5.04
13	Net Profit/ Total Assets	%	2.32	2.55	2.37	2.43	2.80	3.25
14	Total Credit/Deposit	%	68.18	73.87	71.17	78.29	77.91	74.90
15	Total Operating Expenses/Total Assets	%	3.86	4.34	5.54	6.91	6.73	4.84
16	Adequacy of Capital Fund on Risk Weighted Assets							
	a. Core Capital	%	8.75	8.74	8.77	8.83	9.30	9.98
	b. Supplementary Capital	%	2.35	1.96	1.73	1.75	1.71	1.61
	c. Total Capital Fund	%	11.10	10.70	10.50	10.58	11.01	11.59
17	Liquidity (CRR)	%	8.37	9.03	3.02	4.90	8.60	9.32
18	Non Performing Loans/Total Loans	%	0.74	0.80	1.48	1.77	2.33	2.13
19	Weighted Average Interest Rate Spread		3.94	4.16	4.40	4.37	4.95	5.48
20	Book Net Worth per Share	Rs.	354	324	265	225	269	275
21	Total Shares	Number	6,892,160	9,657,470	14,491,240	20,297,694	20,297,694	24,368,414
22	Total Permanent Employees	Number	416	505	557	657	650	742
23	Weighted Average Number of Ordinary Shares Outstanding	Number	6,442,910	9,089,256	13,590,702	18,929,598	20,297,694	23,320,064
24	Return on Equity	%	29.35	33.93	30.27	29.02	30.25	32.78
25	Return on Assets	%	2.32	2.55	2.38	2.43	2.80	3.25
26	Dividend Payout Ratio	%	92.33	79.62	89.05	42.45	71.80	68.32
27	Earnings Yield	%	2.20	2.32	3.52	5.64	6.17	5.24
28	Dividend Yield	%	1.90	1.74	2.94	2.40	4.43	3.58
29	Cost to Income Ratio	%	51.14	52.11	56.31	63.50	57.16	48.60
30	Total Assets to Shareholders' Fund	times	15.24	14.01	13.59	12.73	10.09	9.56
31	Shareholders' Fund to Liability including Contingent Liability	%	5.74	5.98	6.21	6.61	7.71	8.33
32	Number of Offices	Number	28	38	49	49	52	51
33	Number of ATMs	Number	32	48	63	68	78	81

contd.

**NEPSE Index during Ashadh 2064**

Date	Com.	Manufact.	Hotel	Other	Hydro	Trading	Insurance	Finance	Dev.	NEPSE
	Bank	& Pros.			Power				Bank	
1-Jul-07	655.21	342.29	242.55	812.43		155.37	579.81	464.99	515.11	593.65
2-Jul-07	662.27	342.29	242.55	817.01		155.37	580.66	464.72	516.54	598.52
3-Jul-07	666.18	342.29	242.55	818.12	833.8	155.37	592.55	464.89	518.48	602.87
4-Jul-07	677.38	346.43	242.55	818.12	845.49	155.37	592.55	465.67	515.83	611.08
5-Jul-07	681.89	346.43	242.55	818.12	836.46	155.37	592.74	466.83	517.93	613.47
9-Jul-07	684.56	348.63	242.94	818.12	836.31	155.37	596.84	466.65	536.69	615.43
10-Jul-07	692.44	348.63	242.94	818.12	835.82	155.37	596.88	468.87	538.44	620.61
11-Jul-07	710.57	348.63	245.91	818.12	840.42	155.37	604.48	470.42	538.82	633.02
12-Jul-07	726.88	348.63	247.45	818.12	838.54	155.37	605.05	470.16	536.47	643.15
15-Jul-07	748.48	348.63	247.45	818.12	847.93	155.37	605.05	470.41	536.66	657.47
16-Jul-07	789.21	348.63	251.47	818.12	847.93	155.37	612.46	471.82	539.66	683.95

**NEPSE Index**

**Mid July 2007- Mid July 2008**

Date	Com.	Manufact.	Hotel	Other	Hydro	Trading	Insurance	Finance	Dev.	NEPSE
	Bank	& Pros.			Power				Bank	
30-Jun-08	960.78	418.82	373.95	817.47	1218.48	212.55	827.23	1099.06	1136.76	937.46
1-Jul-08	952.13	418.82	373.57	817.47	1214.75	213.40	828.43	1100.37	1125.70	931.30
2-Jul-08	918.81	418.82	372.41	817.47	1193.91	212.55	822.02	1089.80	1103.53	906.24
3-Jul-08	953.14	418.82	372.41	817.47	1176.12	212.55	824.48	1095.89	1113.44	928.39
6-Jul-08	947.40	422.91	372.41	817.47	1183.82	212.55	818.20	1094.67	1144.29	926.93
7-Jul-08	952.14	427.67	372.41	817.47	1191.30	212.55	817.03	1093.74	1133.33	929.72
8-Jul-08	961.37	427.67	373.57	817.47	1206.16	212.55	817.11	1096.37	1129.70	936.46
9-Jul-08	973.39	426.07	373.57	817.47	1209.97	212.55	817.69	1096.85	1139.30	944.86
10-Jul-08	978.99	426.07	373.57	817.47	1218.15	212.55	817.20	1099.16	1146.39	949.52
13-Jul-08	983.34	424.90	373.57	817.47	1221.67	212.55	815.98	1103.29	1156.32	953.46
14-Jul-08	988.21	424.90	370.88	817.47	1245.51	212.55	815.98	1111.72	1165.59	959.26
15-Jul-08	985.65	423.66	370.88	768.26	1323.99	204.08	817.25	1152.74	1285.89	963.36

**NEPSE Index**

**Mid July 2008- Mid July 2009**

Date	Com.	Manufact.	Hotel	Other	Hydro	Trading	Insurance	Finance	Dev.	NEPSE
	Bank	& Pros.			Power				Bank	
2-Jul-09	685.03	434.32	367.42	646.19	904.62	295.83	631.05	678.82	700.35	667.43
5-Jul-09	695.77	434.32	367.42	653.24	915.44	295.83	630.90	674.29	708.55	675.16
6-Jul-09	697.42	434.32	367.42	652.07	904.09	295.83	629.31	675.37	719.28	676.14
7-Jul-09	711.03	434.32	367.42	655.59	916.55	295.83	630.56	677.53	728.16	685.55
8-Jul-09	729.87	434.32	367.42	652.07	912.74	295.83	627.40	679.33	740.44	696.16
9-Jul-09	736.57	434.32	367.42	663.81	919.18	295.83	631.13	682.01	744.66	702.88
12-Jul-09	750.96	434.32	367.42	663.81	910.97	295.83	635.67	684.45	743.94	711.06
13-Jul-09	754.67	434.32	367.42	681.43	912.75	295.83	635.48	690.89	751.45	717.46
14-Jul-09	780.24	434.32	367.42	723.72	980.45	295.83	656.41	696.86	767.44	743.69
15-Jul-09	780.87	434.32	367.42	738.99	1044.81	295.83	656.41	697.61	772.56	749.10

## NEPSE Index

Mid July 2009- Mid July 2010

Date	Com.	Manufact.	Hotel	Other	Hydro	Trading	Insurance	Finance	Dev.	NEPSE
	Bank	& Pros.			Power				Bank	
1-Jul-10	444.92	427.89	417.76	560.45	725.26	276.77	549.24	410.14	474.81	470.91
4-Jul-10	438.52	427.89	422.11	540.48	755.69	276.77	549.53	407.62	474.49	464.69
5-Jul-10	434.08	427.89	422.11	534.60	755.30	276.77	548.61	402.98	474.13	460.70
6-Jul-10	440.54	427.89	413.41	532.26	740.71	276.77	549.19	401.20	473.45	463.24
7-Jul-10	436.92	427.89	413.41	538.13	736.22	276.77	550.68	400.30	472.62	461.87
8-Jul-10	435.42	427.89	416.89	528.73	757.14	282.08	551.51	399.60	471.57	460.07
11-Jul-10	436.39	427.89	399.50	528.73	748.29	282.08	549.23	399.12	472.17	460.02
12-Jul-10	437.01	427.89	399.50	535.78	752.95	282.08	544.19	399.18	473.25	461.62
13-Jul-10	440.88	427.89	399.50	535.78	778.18	282.08	542.78	398.37	476.01	464.65
14-Jul-10	442.46	427.89	399.50	538.13	821.76	282.08	544.76	397.57	478.40	467.33
15-Jul-10	456.93	427.89	400.26	540.48	881.00	282.08	548.52	397.38	478.53	477.73

## NEPSE Index

Mid July 2010- Mid July 2011

Date	Com.	Manufact.	Hotel	Other	Hydro	Trading	Insurance	Finance	Dev.	NEPSE
	Bank	& Pros.			Power				Bank	
30-Jun-11	289.94	570.95	402.42	486.44	564.80	241.97	426.32	301.24	291.16	336.68
3-Jul-11	288.46	577.98	405.81	469.99	562.19	241.97	419.92	301.33	288.82	333.23
4-Jul-11	288.98	571.14	405.81	475.87	569.71	241.97	414.48	300.55	286.01	333.93
5-Jul-11	296.24	574.69	405.81	494.66	573.13	241.97	412.45	299.69	286.65	340.82
6-Jul-11	301.69	574.45	409.20	493.49	602.60	241.97	411.29	299.59	286.39	344.46
7-Jul-11	300.40	569.52	405.81	475.87	608.33	241.97	410.32	298.86	284.86	340.95
10-Jul-11	306.32	586.44	409.20	485.26	600.01	241.97	412.88	298.62	286.26	346.00
11-Jul-11	308.53	607.22	412.59	469.99	615.77	241.97	410.87	299.99	286.43	346.03
12-Jul-11	313.43	607.22	412.59	487.61	644.04	241.97	409.92	301.64	286.61	352.21
13-Jul-11	320.77	603.16	412.59	485.26	651.66	241.97	407.76	302.60	289.30	356.45
14-Jul-11	328.70	591.52	412.59	492.31	673.44	241.97	407.14	303.78	294.15	362.85

## NEPSE Index

Mid July 2011- Mid July 2012

Date	Com.	Manufact.	Hotel	Other	Hydro	Trading	Insurance	Finance	Dev.	NEPSE
	Bank	& Pros.			Power				Bank	
28-Jun-12	347.11	666.76	487.40	563.96	626.07	191.97	480.90	265.64	247.62	377.48
1-Jul-12	344.85	666.76	491.09	552.22	620.64	191.97	482.97	265.25	247.72	374.51
2-Jul-12	342.06	666.76	492.45	554.57	612.93	191.97	482.82	265.39	246.55	372.92
3-Jul-12	344.71	666.76	492.45	553.39	614.91	191.97	481.40	265.44	246.15	374.25
4-Jul-12	347.96	666.76	497.49	558.09	623.88	191.97	485.40	265.64	245.84	377.18
5-Jul-12	347.91	666.76	491.69	558.09	630.09	191.97	487.35	266.45	246.40	377.39
8-Jul-12	346.93	666.76	490.93	563.96	639.56	191.97	486.13	266.72	244.68	377.72
9-Jul-12	348.11	666.76	490.55	575.71	649.09	191.97	483.61	266.11	244.49	380.12
10-Jul-12	353.74	666.76	495.98	585.11	660.72	191.97	489.27	266.36	245.50	385.30
11-Jul-12	353.83	666.76	489.42	575.71	664.20	191.97	494.19	266.47	244.03	384.09
12-Jul-12	352.46	666.76	489.04	575.71	663.67	191.97	494.49	266.68	245.60	383.48
15-Jul-12	358.57	666.76	489.04	590.98	683.56	191.97	497.86	267.01	245.52	389.74

17-Jun-13	487.13	877.48	658.36	616.82	1028.99	173.77	883.58	252.32	252.90	493.44
18-Jun-13	484.51	877.48	658.17	614.47	1029.94	173.77	873.68	250.84	251.66	491.08
19-Jun-13	483.14	878.17	658.92	610.95	1029.60	173.77	876.92	252.00	251.73	490.04
20-Jun-13	480.60	878.17	657.79	610.95	1029.30	173.77	880.42	251.77	251.19	488.55
23-Jun-13	479.89	878.17	657.79	608.60	1025.85	177.05	877.59	252.13	250.48	487.63
24-Jun-13	482.78	878.17	657.04	606.25	1028.81	177.05	875.11	252.33	250.11	488.99
25-Jun-13	489.12	878.17	656.85	614.47	1029.57	177.05	879.22	252.63	250.47	493.96
26-Jun-13	495.10	878.17	655.72	622.70	1016.85	177.05	880.80	252.31	250.17	498.10
27-Jun-13	490.47	878.17	655.72	622.70	1025.65	177.05	873.52	254.39	249.91	495.60
30-Jun-13	486.79	878.17	655.72	622.70	1016.80	177.05	875.95	254.00	249.41	493.18
1-Jul-13	487.42	878.17	695.74	622.70	1025.39	177.05	878.73	253.84	248.90	494.35
2-Jul-13	487.50	878.17	692.49	622.70	1023.49	177.05	876.20	253.55	249.19	494.28
3-Jul-13	486.82	878.17	694.11	625.05	1028.70	177.05	877.54	253.84	250.01	494.46
4-Jul-13	486.22	878.06	675.10	622.70	1028.41	177.05	881.44	252.91	250.91	493.67
7-Jul-13	486.94	878.63	668.90	622.70	1027.30	177.05	888.48	253.82	252.60	494.45
8-Jul-13	490.82	879.10	666.26	656.76	1022.55	169.36	888.53	253.83	253.59	500.99
9-Jul-13	496.90	879.10	663.99	659.11	1028.11	169.36	902.33	255.60	254.89	505.67
10-Jul-13	502.96	879.10	662.10	622.70	1037.10	169.36	920.33	255.45	256.01	505.38
11-Jul-13	500.21	868.72	662.86	646.19	1041.43	169.36	917.28	253.84	256.11	506.53
14-Jul-13	501.64	868.72	663.24	669.68	1065.28	169.36	918.92	254.01	256.29	511.15
15-Jul-13	505.48	868.72	657.49	700.22	1080.92	169.36	937.14	254.08	257.20	518.33
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