RISK AND RETURN ANALYSIS OF THE COMMERCIAL BANKS

(With References to NABIL, NIBL, SCBL, HBL, EBL and BoK)

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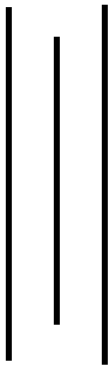
A Thesis Submitted to:
Office of the Dean
Faculty of Management
Tribhuvan University



In partial fulfillment of the requirement for the Degree of
Master of Business Studies (M.B.S)

Kathmandu, Nepal
October, 2009

RECOMMENDATION

This is to certify that the Thesis

Submitted by:

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RISK AND RETURN ANALYSIS OF THE COMMERCIAL BANKS
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has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

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DECLARATION

I hereby declare that the work reported in this thesis entitled **"RISK AND RETURN ANALYSIS OF THE COMMERCIAL BANKS (With References to NABIL, NIBL, SCBL, HBL, EBL and BoK)**" submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master's Degree in Business Study (M.B.S.) under the supervision of **Associate Professor Achyut Raj Bhattarai** and **Shashi Kumar Sharma** of Shanker Dev Campus.

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ACKNOWLEDGEMENT

This report on **Risk and Return Analysis of the Commercial Banks** has been prepared as per the course of Master of Business Studies, second year. This report has attempted to explore the risks and returns of some of the major joint-venture commercial banks and try to compare them with the risk and return of the commercial banking sector and also with that of the market risk and return before reaching into some deciding conclusions.

In this effort of preparing the report, I am especially grateful to Asso. Prof. Achyut Raj Bhattarai and Shashi Kumar Sharma, my teachers, who has given me fruitful suggestions and guidance to frame out this report. I am also thankful to the officers and staffs of NEPSE together with staffs of various commercial banks for making me available different resource materials and data. Similarly, I also want to remember the help that I have received from the library staffs of various campuses, especially staffs of Shankar Dev Campus and Central Libraries, T.U.

Last but not the least, I am most indebted to my loving husband Prabin Shakya for his great support and encouragement that help to give a fine accomplishment to this report.

Aneeva Shakya
Researcher

ABBREVIATIONS

$\bar{R}$	-	Expected Return
%	-	Percent
&	-	And
AD	-	Anno – Domini
AGM	-	Annual General Meeting
ANZ	-	Australia and Newzeland
BI	-	Banking Index
BoK	-	Bank of Kathmandu Limited
CB	-	Commercial Bank
Co.	-	Company
CS	-	Common Stock
CV	-	Coefficient of Variance
DPS	-	Dividend per Share
EBL	-	Everest Bank Limited
EPS	-	Earning Per Share
FY	-	Fiscal Year
HBL	-	Himalayan Bank Limited
Jr.	-	Junior
Ltd	-	Limited
MPS	-	Market Price per Share
Mr.	-	Mister
NABIL	-	Nabil Bank Limited
NEPSE	-	Nepal Stock Exchange.
NFR	-	Nominal-risk Free Rate
NI	-	Nepse Index
NIBL	-	Nepal Investment Bank Limited.
OI	-	Others Sector Index
P/pp	-	Page
R	-	Realized Rate of Return

RFR	-	Real-risk Free Rate
Rs	-	Rupees
SCBL	-	Standard Chartered Bank Limited
SD	-	Standard Deviation
TU	-	Tribhuvan University
US$	-	United States Dollar
USA	-	United States of America

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CHAPTER - I

INTRODUCTION

1.1 General Background of the Study

With the per capita income of US$ 250 per annum, Nepal represents one of the poorest countries in the world. Despite per capita growth rates averaging 2.2 percent per annum in the last decade, poverty reduction in Nepal has been much slow.

A sustained and self reliant growth of any economy is much more fueled by the development of the capital market that mobilizes the saving of the people and provides it at the disposal of the spending units like the central government, state, local bodies, statutory corporation etc. together with the business enterprises and individuals to meet their regular and planned development expenditures including that for expansion, diversification and modernization of their existing enterprises or for setting up of new ones. This case is very much true even in case of Nepal to lift up her economy.

Among the capital market too, the role of the security market is much immense that offers a platform for the transaction of securities like government bond, corporate bond or debentures, ordinary shares, preference shares, mutual funds etc.

In Nepal, the establishment and operation of Security Marketing Center in the year 1976 had geared up the issue of securities, which was later converted into the Stock Exchange Center. The Security Exchange Act had been enacted only in 1983 AD but it was only in the year 1993 AD that Security Exchange Center was converted into Nepal Stock Exchange, in short NEPSE.

According to the Security Exchange Act 1983, each and every company wishing to transact their shares in the market must list up their shares in the Nepal Stock Exchange. "Until the end of the year 2001, 115 companies had been listed their securities in the NEPSE with the market capitalization of Rs 46349.4 millions. However, by the end of

the year 2007, only 135 companies have been listed, with the market capitalization of Rs. 35240.4 millions".

Among the listed securities in the NEPSE, Commercial Banks dominates the position in terms of the paid-up value with Rs 4856.16 millions paid-up value of commercial banks shares being listed by the end of the year 2004. Commercial banks also occupy the major portion among the listed companies on the basis of amount traded, number of transaction, market capitalization etc.

A rational investor will also try to maximize the value of his/her investment. For this he/she has to invest in securities only after evaluating their risks and returns.

The returns from holding an investment over some period say a year is simply any cash payments received due to ownership, plus the change in market price, derived by the beginning price.

"Of all the forms of securities, common stocks appear to be the most romantic. While fixed income Investment Avenue may be more important to most of the investors, equity shares seem to capture their interest the most due to the potential reward and penalties associated with equity. Shares make them an interesting even exciting proposition, no wonder; equity investment is a favorite topic for conversation in parties and get-togethers."

Generally, investors are risk averse who always seek higher return for more risk as risk premium. So, the primary problem in investment is to identify the security, which has low risk and high return.

Investors generally do not invest their money in the only risky asset. The investor should invest their money in portfolio of many assets. It will help to the investor to minimize the risk. Therefore, an investor is concerned with the portfolio risk, which is the sum of the relevant risk of individual assets included in portfolio. The revenant risk of an asset is

defined as the portion of its total risk that changes proportionately with market risk. Some stocks are riskier than other and even in years when the overall money into one stock goes down. Therefore, putting all your money into one stock is extremely risky. The single best weapon against risk is diversification.

In Nepalese context, most of the potential investors and the shareholders themselves have understood least about the risk- return behavior of the stocks. And they hardly bother to know about these aspects before making investment in securities. Most of the general Nepalese investors invest only in a single security and that too without any analysis of risk and return. Their investment would not be grounded on any logic that helps to reduce the overall risk and maximize the overall return. Hence, the analysis of risk and return of individual stock and the industry together with their relationship with stock price of other industries and NEPSE index should be well analyzed and studied for the proper investments in stocks. Many investors are afraid to invest in stocks. People participation in securities investment and its dynamic trading plays a vital role in overall economic development. For this purpose potential investors must be able to analyze risk and return of individual stock and portfolio as well. This will increase their confidence and ultimately increase the degree of market efficiency, which is essential to spread economic development of the nation.

1.1.1 Concept of Risk and Return

"Risk, defined most generally is the probability of the occurrence of unfavorable outcomes. But risk has different meanings in different context. Two measures developed from the probability distribution have been used as initial measures of return and risk. These are the mean and the standard deviation of the probability distribution."

Risk is related to the future uncertainty. Risk is defined in Webster's as "a hazard; a peril; exposure to loss or injury." Thus, "risk refers to the chance that some favorable event occurs. It is a quantity presented in terms of statistical values. There is risk in skydiving that is risk of life; risk in bet on horses and again in investment on speculative stocks that is the risk of losing money or investment. Risk is an important element since investments with greater risk require a higher return than investment with lower risk."

The return is income received on an investment, which is expressed as dividend, plus any change in market price of share and usually expressed in percent. Again return is the income received on an investment which is expected as dividend, plus any change in market price of the share (MPS) and usually expressed in percent. There may be occasions when actual return on the investment may vary from the expected return. This variability of returns from those that are expected is defined as risk. The greater the variability, the riskier the securities is said to be. The return is a reward from investment. It may include both the current income and capital gains or losses that arise by the increase or decrease of security price. Generally, investors invest in seek of returns. Investors may like returns and dislike risk. People will invest in riskier assets only if they expect to receive higher returns. A return along with risk is considered as two sides of the business coin.

Thus, return is anything that an investor wants for his investment. It is the positive outcome for his good decision making. An investment in an asset may have positive, negative or zero returns. An asset would have positive return when an investor gains something in terms of cash or other assets. Similarly an asset would have negative return when an investor loses his cash or asset. When there is neither increase nor decrease of assets due to the investment, the return is obviously zero.

1.1.2 Commercial Banks

A bank is a business organization that receives and holds deposit funds other, makes loans and extends credit and transfers funds by written order deposit. According to Nepal Commercial Banks Act 2031 B.S. " A Commercial Bank refers to such type of bank other than specified banks related to cooperative, agricultural, industrial and other which deals in money exchange, accepting deposits and advancing loans etc." (Commercial Bank Act; 2031:25). Commercial banks are those financial institutions deal in accepting deposits to persons and institutions and giving loans against securities. They provide working capital needs of trade industry and even to agricultural sectors. Moreover commercial banks also provide technical and administrative assistance to industries, trade and business enterprises. They transfer monetary source from saver to users. In addition

to above, the main purpose is to uplift the backward sector of economy. Commercial banks are organization on a joint stock company system, primarily for the purpose of earning profit.

"Commercial bank is a corporation which accepts demand deposits subject to check and makes short term loans to business enterprises, regardless of the scope of its other service."

In this way commercial banks are those banks, which are engaged in commercial banking transaction. It develops saving habits in people. CB's plays vital role for development of a developing country. In Nepalese context, commercial banks have comparatively good performance among the public limited companies. Because most of the banks are counted within the top ten positions among the listed companies on the basis of amount traded, number of transaction, market capitalization etc. As a public limited company, Nepal Bank Limited is only one Nepalese commercial bank, which is listed in NEPSE.

1.2 Significance of the Study

- The study will be helpful for investors as well as commercial banks in Nepal.
- It provides the consolidated basic data and information about the NEPSE and commercial banks under study.
- This study will cover the investors' perception upon the risk and return factors while investing in common stocks of commercial banks.
- It will provide the brief information on risk and return from the investors' perspectives.

1.3 Statement of the Problem

- It has been more than a decade since the establishment of Nepal Stock Exchange. The number of companies being listed has been increased tremendously.
- People's interest in investing on shares has also been growing. But the pour of money on stocks has been much guided by the mere interest rate than the very concept of the investment.

- General people who invest in shares have less or even no reason on why they have invested in the particular shares.
- When people invest in more than one share and create a portfolio, they don't have any answer on why they are investing in the shares of particular companies. Market rumors and influence of friends used to be major reasons of many people's investment in many a case.

Thus, there is less study of risk and return analysis of the stock. People are more willing to invest their savings in shares of commercial banks but they don't know what relationship is there between the portfolio return of the common stocks of commercial banks and overall market portfolio return. They hardly bother to understand what relation exists between portfolio beta of the commercial banks and market beta. Thus, lack of proper analysis of risks and returns of stocks before investing on them is the major problem of Nepalese stock market.

1.4 Objectives of the Study

The primary objective of the present study is to analyze the risk and return of listed commercial banks in Nepal. The specific objectives of the proposed study are as follows:

a. To study the risk and return of the sampled commercial banks (6 out of 27 banks) and also analyze their coefficient of variance.
b. To perform the comparative analysis of the risk and return on the common stocks of the selected banks.
c. To find out how sensitive the stock price of the selected commercial banks and the banking sector as a whole with that of the NEPSE.
d. To provide the valuable suggestions about the risk and returns on stocks of the commercial banks that could be the deciding factors for the investors in their investment.

1.5 Scope of the Study

The study mainly focuses on the risk and return analysis of the stocks of the commercial banks. Thus the stocks of 8 listed commercial banks are taken as the sample for the study.

But the stocks of all the listed banks and other companies in NEPSE are considered as population and data related to them are used in obtaining the market risk and return situation.

Again, the data of the last seven years has been utilized to run this study. The proposed study has not only explored the major outcomes on the risk and return behaviors of the sampled banks but has also studied their current relation with the risk and return of the stocks of the commercial banks as a whole and with the overall market portfolio. Finally, it has given some recommendations useful for future investment.

1.6 Limitations of the Study

The present study has undergone various constraints and limitations. The major limitations of this study are as below.

1. There are 27 commercial banks in Nepal that are in operation, among them 18 banks are listed in NEPSE. Only six joint-venture commercial banks are taken for study and other banks are ignored by the study.
2. The study has analyzed the risk and return of the banks only taking the last seven fiscal years from 2057/58 to 2063/64.
3. The study is basically concerned only with the risk and return of the listed commercial banks i.e., other aspects of the banks have not been taken under consideration.
4. The study has made recommendations without being focused on the future uncertainties. Only the historical data are judged for arriving at the conclusions.

1.7 Organization of the Study

The study has presented the systematic presentation of the research design, analysis, presentation and findings of the study. It has divided into five chapters

Chapter -I: Introduction

The first chapter of the study is introduction, which highlighted the basic information of the research area, various problems, objectives, importance, limitations and organization of the study.

Chapter - II: Review of Literature:

The second chapter of the study assures readers that they are familiar with important research that has been carried out in similar areas by earlier scholars in related areas. It also establishes that the study as link in a chain of research that is developing and emerging knowledge about concerned field.

Chapter - III: Research Methodology

The third chapter refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. It describes the various research methods (i.e. research design, source of data, data collection techniques, data collection methods).

Chapter - IV: Data Presentation and Analysis

The developed information has finished in required form in fourth chapter. Information is presented and analyzed (i.e. both primaries as well as secondary source) by using various financial and statistical tools in specified form to meet the stated objective of study.

Chapter - V: Summary, Conclusion and Recommendations

On the basis of the results from data analysis, the researcher concluded about the research work. Besides, it also gives important suggestions to the concerned organization for better improvement.

CHAPTER - II

LITERATURE REVIEW

On the ground of the research topic, this chapter shows a competent exploration of the background to the work and a comprehensive review of the relevant literature. In this regard, basic academic course books on finance, recently published books especially related to the topic, and relevant articles from some of the major research based journals and newspapers are reviewed.

Review of literature includes the following topics:

2.1 Conceptual Review (Book Review)

2.2 Review from Journals

2.3 Review from Other Thesis

2.4 Others

2.1 Conceptual Review (Book Review)

Central focus of the finance is trade off between risk and return. Varieties of books are available that deal with the theoretical aspect on this matter. Here, the relevant subjects of some of the well popular and worldwide accepted books are reviewed.

2.1.1 Investment

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

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

Investment is concerned with the management of an investor's wealth, which is the sum of current income and the present value of all future income. The term investment is conceptualized as income, saving or other collected fund. It covers wide range of activities. It is commonly known fact that an investment is possible only when there are adequate saving. Therefore both saving and investment are interrelated (Fisher and Jordan, 1995:104).

2.1.2 Common Stock

Common stock is a form of corporate equity ownership, a type of security. It is called "common" to distinguish it from preferred stock. In the event of bankruptcy, common stock investors receive their funds after preferred stock holders, bondholders, creditors, etc. On the other hand, common shares on average perform better than preferred shares or bonds over time.

Common stock is usually voting shares, though not always. Holders of common stock are able to influence the corporation through votes on establishing corporate objectives and policy, stock splits, and electing the company's board of directors. Some holders of common stock also receive preemptive rights, which enable them to retain their proportional ownership in a company should it issue another stock offering. Additional benefits from common stock include earning dividends and capital appreciation.

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

2.1.3 Relationship between Risk and Return

The expected return from any investment proposal will be linked in fundamental relationship to the degree of proposed risk. In order to be acceptable a higher risk

proposal must offer a higher forecast return than lower risk proposal (Hampton 1996:341).

"The observe difference in both the levels and variability of the rate of return across securities are indicative of the underlying risk and return in the market" Generally, there is a positive relationship between rate or return and risk. It means an investor can usually attain more return by selecting dominant assets that involve more risk. While it is not always true that a riskier asset will pay a higher average rate of return, it is usually in practice. The reason is that investors are risk averse. As a result, high-risk assets must offer investors' high return to induce them to make the riskier investment normally; investors are likely to prefer more return and less risk. It means investors will not choose an investment that guarantee less return when investments promising higher returns in the same level of risk class are readily available (Loric, Dodd and Kempton, 1985:1029).

2.1.4 Sources of Risk

An investment is commitment of money that is expected to generate addition money. Every investment entails some degree of risks. A major objective of financial institution is to increase the returns for its owner by taking minimum risk. The effective management of the risk is central to its performance. Indeed, it can be argued that the main business function of financial institution is managing these risks through the consumption of maximum time and efforts in understanding and managing the various source and kinds of risks factors with its different natures and complexities (Francis, Jack Clark, 1995: 23).

The primary risks factor that create investments uncertainties are as follows:

a. Interest Rate Risk

Asset transformation function is the key functions of financial institution. It involves buying primary securities or assets and issuing secondary securities or liabilities to fund assets purchase. The primary security purchased by financial institutions often has maturity and liquidity characteristics which are different from those of secondary security that financial institutions sell. In mismatching the maturities of asserts and liabilities as part of their asset transformation function (Francis, Jack Clark, 1995: 23).

b. Bull-Bear Market Risk

Market risk is incurred in the trading of assets and liabilities due to changes in market forces like interest rates, exchange rates. Furthermore, market risk is the risk related to uncertainty on the earning on its trading portfolios caused by changes in the market condition. The various market forces make securities price upward and downward. The upward trend of market price (Bull Market) and downward trend of market price (Bear Market) create a long lasting source of investment at risk. (Francis, Jack Clark, 1995: 24)

c. Credit Risk

It is also called default risk. Default risk is probability that the borrower is unable to fulfill the term promised under the loan agreement. It is that portion of investments total risks that result from changes in the financial integrity of the investment (Francis, Jack Clark, 1995: 24).

d. Liquidity Risk

Liquidity risk is sudden surges in liability withdrawal may leave as financial institution in a position of having to liquidate assets in a very short period of time and at low prices. Liquidity risks arises when its liability holders such as depositor or insurance policy maker etc demand immediate cash for the financial claim they hold with financial institution or when holders of loan commitment or credit line suddenly exercise their right to borrow or draw down their right of loan commitments that situation financial institution s must either borrow addition funds or sell assets to meet the demands for the withdrawal of funds (Francis, Jack Clark, 1995: 24).

e. Call-Ability Risk

Some bonds and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. Issuer like the call provision because it allows them to buy back outstanding preferred stock and/on bond with funds from a newer issue if market interest rate drop below the level being paid on the outstanding securities. There is chance of creating call-ability risk (Francis, Jack Clark, 1995: 24).

f. Convertibility Risk

Call ability risk and convertibility risks are in two aspects. First both are contractual stipulations that included in the term of original security issue. Second, both of these provisions alter the variability of return from the affected security. Convertibility risk is that portion of the variability of return from a convertible that the investment may be converted into the issuer's common stocks at a time or under terms to the investor's best interest (Francis, Jack Clark, 1995: 24).

g. Industrial Risk

An industry may be viewed as a group of companies that compete with each other to market homogeneous products. Industry risk is that portion of risk that can be an investment variability of return caused by events that affects the product and firms that make up an industry (Francis, Jack Clark, 1995: 24).

h. Political Risk

Political risk arises from the exploitation of a politically weak group for the benefits of politically strong group, with the efforts of various groups to improve their relative positions increasing the variability return from the affected assets. Regardless of whether the changes that cause political or by economic interests, the resulting variability of return is called political risk (Francis, Jack Clark, 1995: 25).

i. Other Risk

Beside these above mentioned risks, there are other risks like off balance sheet risk, technological and operational risk, country and sovereign risk, insolvency risk etc (Francis, Jack Clark, 1995: 25).

2.1.5 Expected Rate of Return

The future is uncertain. Investors do not know with certainty whether the economy will be growing rapidly or be in recession. As such, they do not know what rate of return their investments will yield. Therefore, they base their decisions on their expectations concerning the future.

The expected rate of return on a stock represents the mean of a probability distribution of possible future returns on the stock. "It is the rate of return to be realized from an investment, the weighted average of the probability distribution of possible assets. Thus the expected rate of return for any asset is the weighted average rate of return, using probability of each rate of return as the weight" (Brigham, Eugene F., Houston, Joel F, 1996:159).

2.1.6 Required Rate of Return

The required rate of return is the minimum rate of return (expressed as a percentage) that an investor requires before investing capital. The degree of risk associated with an investment is reflected in the required rate of return. Investors and analysts often use the required rate of return as a discount rate for future cash flows from an investment. For many investors, a beginning point in stock valuation is calculating the required rate of return. On occasion, the required rate of return is confused with the internal rate of return. "The capitalization or the discount rate is defined as the required rate of return. It is the minimum rate expected by the investors to buy or hold a security." The required rate of return is composed of a risk-free interest rate and a risk premium rate (Sheridon, Titman & Grinblantt, Mark, 1998:105).

2.1.7 Determinants of the Required Rate of Return

1. Real Risk –Free Rate (RFR)

The risk-free interest rate is the interest rate that it is assumed can be obtained by investing in financial instruments with no default risk. It is the basic interest rate if there were no uncertainty at all about the future, also called pure time value of money. RFR depends on the preference individual have for current consumption over future consumption and the set of investment opportunities in the country (Van Horne, 1997:205).

2. Nominal Risk Free Rate

It is the interest rate obtained after the adjustment of expected inflation and supply and demand aspect of funds (Van Horne, 1997:205).

2.1.8 Types of Risk

The total variance of the rate of return is the sum total of various risks which are primarily classified into two types.

i. Systematic Risk

ii. Unsystematic Risk

Hence, Total Risk = Systematic Risk + Unsystematic Risk

i. Systematic Risk

It refers to that portion of the variability of an individual security's return caused by factors affecting the market as a whole as such it can be thought of being non-diversifiable. It is because of this that it is also called market risk or relevant risk. The systematic risk is market related. In other words, it arises from the changes in the economy and market condition. For example, high inflation, recession, impact of political factors, wars, depression, long term changes etc which are beyond the control of company management. It affects all the firms in the market. The systematic risk is rewarded in the form of risk premium, Sometimes; systematic risk is called market risk. Systematic risk affects almost all assets in the economy, at least to some degree, whereas systematic risk affects at a small number of assets. The principle of diversification has an important implication to a diversified investor, only systematic risk matters. Systematic risk accounts for 25% to 50% of the total risk of any security. Some of the sources of systematic risk include

a. Interest rate changes
b. Changes in purchasing power
c. Changes in investor's expectation about the overall performance of the economy.

Because diversification cannot eliminate systematic risk, this type of risk is the predominant determinant of the individual security risk premium. This risk is also called beta risk (Weston and Brigham, 1982:89).

ii. Unsystematic Risk

It is also called diversifiable risk or company specific risk or unavoidable risk. It is such a risk which is unique to the firm. The unsystematic risk is non market factors related. In other word, it arises from the project specific factors. This portion of risk is possible to reduce or eliminate through diversification of their investments. It is inherent individual companies or projects. It is the variability in the security's return caused by such factors as:

a. Management capability and decisions
b. The availability of the raw materials
c. Strikes
d. The unique effects of government regulations such as pollution control
e. The effect of foreign competition
f. The particular levels of financial and operating leverage of the firm employees.

(Weston and Brigham, 1982:89)

2.1.9 Measurement of Risk and Return

i) Standard Deviation

Any measure of risk has a definite value and for this, the measure of the tightness of the probability distribution is necessary. The tighter the probability of expected future return, the smaller the risk of a given investment.

One such measure of risk is the use of standard deviation, the symbol for which is σ pronounced "sigma". The smaller the standard deviation, the tighter the probability distribution and accordingly, the lower is the risk of the stock.

The larger the standard deviation, the more variable is an investment's returns and the riskier is the investment. A standard deviation of 0 indicates no variability and thus no risk (Van Horne, 1997:38).

ii) Coefficient of Variation

The coefficient of variation shows the risk per unit of return, and it provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same.

If a choice has to be made between two investments which have the same expected returns but different standard deviation, most people would choose the one with the lower standard deviation and therefore same risk. Similarly given a choice between two investments with the same risk but different expected returns, investors would generally prefer the investment with the higher expected return. Investors want as much returns as little risk as possible and coefficient of variance helps to choose such investment or asset (Van Horne, 1997:39).

2.1.10 Concept of Co-variance

The covariance is a measure of relatedness that depends on the units of measurement. For example – the height of parents co-varies positively with the height of their children. However, the size of the covariance will differ depending on which unit the height is measured. The height measured in inches will be 144 times the covariance measured in feet. For this reason, it is often convenient to employ a measure of relatedness that does not depend on the unit of measure.

To compute a co-variance between two returns, it is necessary to pair each outcome for one return with a corresponding outcome for the other return. The set of probabilities attached to each pair is known as the joint distribution of the two returns. To compute a covariance with the forward-looking approach, the probability weighted average of the product of the two demeaned returns associated with each of the paired outcomes is determined using the joint distribution (Weston and Brigham, 1980:336).

2.2 Reviews from Journals and Articles

Although, there are very less articles published about the risk and return analysis of Nepalese commercial banks, some of the related articles published in national and international newspapers and journals are extracted below.

"There is growing empirical evidence that multiple factors are cross-sectionally correlated with average returns in the United States. Measured over a long time, stocks of small firms earn higher average returns than that of the bigger firms. Fama French (1992, 1996) and Lakonishock, Shleifer and Vishny (1994) show that value/stocks with high

book-to-market, earning to price, on cash-flow to price outperform growth stocks with low book-to-market, earning-to-price , on cash-flow to price. Moreover, stocks with high return over the year continue to outperform stocks with poor prior performance. The evidence that beta is also compensated for average returns is weaker.

The interpretation of evidence is strongly debated. Some believe that the premium are a compensation for pervasive risk factors, others attribute them to firm characteristics or an inefficiency in the way market incorporate information into prices. Yet others average that the premiums may be biased by survivorship or data snooping.

Again from the perspective of collecting independent samples, emerging market countries are particularly interesting because of their relative isolation from the capital markets of other countries. Compared to the developed markets, the correlation between most emerging markets and other stock markets has historically been low (Harvey, 1995) and until recently many emerging countries restricted investment by foreign investors. Interestingly, Bekaert and Harvey found that despite the recent trend toward abolition of these restrictions and the substantial inflows of foreign capital, some emerging equity markets have actually become more segmented from world capital markets. A large portion of the equity capital of emerging economies is held by local investors who are likely to evaluate their portfolios in light of local economies and market condition" (Rouwenhorst, K. Greet 1999/1439-40).

"The share transaction in NEPSE is mostly dominated by commercial banks followed by the finance companies in terms of number of share traded and transaction amount. The faith of the investors in the shares of commercial banks is growing. As the commercial banks are more and more diverse in their services, and with the new explore of investment areas, the banks are earning more profit each year. This has positively affected the investment of the investors.

However the investors seemed to have less willingness to find the long term consequences of the banks' current investment. They also, do not understand the reason behind the banks' growing profit amount. Without any proper analysis of risk and return

of these banks, it is possible that the investor's faith may collapse as the house of card in the days ahead" (Ghimire, Vijay, The Kantipur Daily, 2007:5).

Akhigbe and Whyte (2004) in their research paper, 'The Gram-Leach-Billey Act' of 1999: Risk implications for the Financial Service Industry have focused on risk implication of banking and private sectors. The research paper has included many other studies some of the studies find that bank expansion into banking activities can affect events that permitted only limited entry by banks into non banking activities. The study is conducted on systematic, unsystematic and total risk, such risk are calculated by using statistical tools i.e variance and standard deviation. The study has included 340 banks for the sample size than they partition two sub-samples: 46 large banks and 294 small banks. The major finding of the study is that evidence of a significant decline in systematic risk for the banks securities firm and insurance companies but a significant increase in total and unsystematic risk for the banks and insurance companies are less risk than other securities business. If security wants to decline in risk, security firm can be explained by their ability to diversify into less risky banking and insurance activities. The research paper result suggests that regulators should carefully monitor and supervise banking activities in new era of financial modernization to mitigate effects from the increase in risk (Akhigbe and Whyte: 2004).

Pagano's (2001) has a study on how theories of financial intermediation of corporate risk management influence Bank risk taking behavior. This paper has based on the relation for the risk taking and risk management behavior from a both corporate finance and banking perspective. That data set covers the period from 1986-94, 1986-90 and 1991-94 but overall time of study is nine year period. In this study, the research scholar has used mathematical tools that are the standard deviation, total risk (systematic and unsystematic risk), and interest rate risk. The main objective of the study is to examine the relation for risk taking and risk management behavior for both corporate financial and a banking perspective. After combining the theoretical insights from the corporate finance and banking literatures related to hedging and risk taking the paper reviewed empirical tests based on these theories to determine which of these theories are best supportive by the

data. Management incentives appear to be must consistently supported rational for describing how bank manage risk. In particular, moderate/high levels of equity ownership reduce bank risk while positive amount of stock option grants increase bank risk-taking behavior. The empirical tests of theory of corporate risk management need to consider individual subcomponents of total risk and the bank ability to trade these risks in a component financial market (Pagano's, 2001).

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

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

2.3 Reviews from Thesis and Reports

Three theses has been reviewed in this section which seems to be little relevant with the study. In a thesis submitted by Mr. Mohan Khatiwada in 1996, one of the objectives was to analyze the stock market performance. In this aspect, the finding was – "interest rate so

ascertained by financial institution for the year 1995 ranges from 12% to 12.75% per annum. As it is reviewed, commercial banks deposits accepted on fixed term carry 8% to 9.5% per annum interest rate in the same year.

Mohan Khatiwada (1996) in his study" Risk Analysis of commercial Banks" is related to this study to some extent. Although interest rate on fixed deposit in an immediate return was generated through savings, the return on securities cannot be exactly predicted. Some of the companies yield on their securities investment is very low as compared to the immediate return earned through fixed deposit.". But he had not stated the common stock return in any exact figure.

About the market price movement of common stock, Khatiwada summarized that leaving some exceptional cases aside, almost all the companies experienced their market price going down by less than 50% in 1995. Even the banking group could not spare the share price going down. More specifically, the year 1995 was a disheartening period for the stock price. It is because, almost all the companies share price during the year were down even in some cases below the face value. But the reason behind this deep declination in prices was not mentioned in the thesis. The study had also not focused on the analysis of individual security and the view point of the investors. (Khatiwada, Mohan MBA Thesis, TU, Kathmandu 1996:88)

Another thesis by Jeet Bahadur Sapkota on "Risk and Return Analysis of Commercial Bank" in 2001 is more relevant than the previous one. He had stated one of the objectives as an analysis of the volatility of different stocks and other relevant variables that should be considered while deciding investment in stocks. This objective is vague but in findings, he had written that – "most of the Nepalese investors still invest on different securities on the basis of expectation and assumption of individual security rather than analysis of effect of portfolio. Again analysis of coefficient of variance and the correlation analysis are seldom done for forming portfolio and making investment" (Sapkota, Jeet Bahadur, MBA thesis, T.U., Kathmandu 2001:32).

He has also said that the portfolio between the common stock of the same industry cannot reduce risk properly. So, portfolio should be so constructed that it reduces the overall risk and increase the overall return and for this, the securities having negative correlation should be selected.

A thesis report submitted by Sumita Shrestha, on "Stock Market and Investment" has made a conclusion that "though the Nepalese investors in the last decade had grown investment in the share of the commercial banks, development banks and finance companies a lot, their investment decisions are merely depends upon rumors and baseless expectations. A proper analysis of firm's financial positions and its potentiality of future growth are not given much priority for the investment." It was noticed in her study that there is a positive corelation between risk and return character of the company. Nepalese capital market being inefficien, the price index itself is not sufficient to give the information about the prevaling market. Situation and the company proper regualation should be introduced so that there is more transparancy in issuancnce, sales and distribution of the securities. Investors do not have any idea about the procedures of the securities issuance. Neither company or the stock brokers transmit any information to the investors about the current market situation and hence it becomes difficult for a common investors to invest in the securities. Both government authorities and the stock exchange regulator body should try to promote healthy practices so that the stock brokers do not give false information to the investors for their personal benefit which is a common practice in Nepal (Shrestha Sumita , MBA thesis, T.U., Kathmandu 2003:41).

2.4 Others

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

The study carried out by professor Dr. Manohar Krishna Shrestha (1995) in the title of “Shareholder’s Democracy and Annual General meeting feedback” is reviewed here. Dr.

Shrestha prefers to consider this book as assemblage of opinions which he had expresses in different occasions of various annual general meeting here he has critically analyzed the situation of common stock investors and the situation of common stock investors and the situations that is not improving till date.

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

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

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

Many general meeting feedbacks reveal no serious response to the feelings of shareholders. Thus it reflects unwillingness of the management and broad of directors to change their traditionally held activities towards shareholders (Dr. Manohar Krishna Shrestha, 1995:86).

CHAPTER - III

RESEARCH METHODOLOGY

This study has aimed to explore the risk and return aspects of various joint venture commercial banks during the last seven years. Being focused on the commercial banking sector, the study has done the comparative analysis between the commercial banking risk and return with that of risk and return of the other sectors and also with the market. It has also studied how sensitive the stocks of commercial banks with the NEPSE Index. And to fulfill their objective, a systematic research methodology has been adopted, which has been organized under the following heading.

1. Research Design
2. Population and Sample
3. Sources of Date and Data Collection Techniques
4. Specific Research Questions
5. Method of Analysis and Presentation.

3.1 Research Design

An attempt has been made in this paper to determine risk and return aspects of various joint venture commercial banks. The study has adopted historical and analytical research design. The data utilized are mostly secondary in nature. Some theoretical models have been used and discussed to analyze return and risk characteristics of those commercial banks. The research is based on historical data. For this purpose survey was conducted. Survey is non experimental research design, classified as either descriptive or exploratory, although there is no difference in classification. They are designed to obtain information from sample population. Survey is conducted to obtain detail information of existing variable by either structured questionnaires or structured (or unstructured interviews). Collected data is simply explored by using some statistical tools. As most of the data are quantitative, the research is based on scientific method. Detail analyses of different variables have been made using both the financial and statistical tools. The raw data have been arranged in the tables and various charts and bar-diagrams have been used

to clearly depict the data and findings. The period of study is between 2060/61 to 2063/64.

3.2 Population and Sample

The population of commercial banks would represent all the joint venture commercial banks that have been listed in the NEPSE. The population of the study thus includes: Nabil Bank Limited, Nepal Investment Bank Limited, Standard Chartered Bank Limited, Himalayan Bank Limited, Everest Bank Limited and Bank of Kathmandu Limited. However, due to the constraints of time and unavailability of data of some of the recently established banks, only the first six joint-venture commercial banks are taken as the sample, which have already been listed in the NEPSE during the period studied. The selected banks taken for the study are:

a. Nabil Bank Limited
b. Nepal Investment Bank Limited.
c. Standard Chartered Bank Limited
d. Himalayan Bank Limited
e. Everest Bank Limited.
f. Bank of Kathmandu Limited.

3.3 Sources of Data and Data Collection Techniques

Nature of Data

All the data are secondary in nature and no primary data have been used in the study. Secondary data are arranged in the respective tables and various analyses are done with the use of financial tools applicable.

Sources of Data

Related data of respective banks are extracted from the various annual reports of the banks under study. Data have also been taken surfing the websites of the respective banks. The market price of share of the banks was taken from the publications of NEPSE. Similarly, various publications of the banks and different articles published in the

newspapers and journals have been used as the source of the required material for the study.

Data Collection Techniques

Data are secondary in nature as they are extracted from various annual reports and websites of the commercial banks and NEPSE. Market price per share and dividend per shares are taken through the annual reports of the banks whereas prices of different stocks, NEPSE indices are collected from NEPSE. Data have also been collected through various books and previous thesis and reports in libraries of different campuses.

3.4 Tools for Analysis

3.4.1 Market Price of Share (P)

One of the major data of this study is market price of the stock. Market price of stock for a particular year should have represented the average price of the year, but for the sake of simplicity, prices of the stock at the closing date of the fiscal years are taken as the market price of stock for the particular years. And these data are taken from the annual reports of the respective banks. Here in this study, each year closing price is taken as the market price of stock which has specific time span of one year and the study has focused in annual basis. To get the real average, volume and price of each transaction in the whole year are essential which is tedious and impossible too, considering the data availability and maintenance.

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

3.4.2 Dividend (D)

Dividend per share (including Bonus) provided under the major indicator section of the respective banks have been used for the study. Dividend is the part of earning that is

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

Symbolically DPS can be expressed as follows:

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

If company declares only cash dividend, there is no problem while taking the exact amount of dividend that is relevant. But if the company declares stock dividend (bonus share), it is difficult to obtain the amount that really shareholders has gained. In this case, they get extra numbers of shares as dividend and simultaneously price of stock declines as a result of increased number of stocks. To get a real amount of dividend following model has been used through out.

Total Dividend Amount=Cash Dividend + Stock Dividend% X Next year MPS

3.4.3 Return on Common Stock Investment (R)

Return is income received on an investment plus any changes in the market price, usually expressed as a percent of the 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_t = Cash dividend received at time t.

P_t = Price of a stock at time t.

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

3.4.4 Expected Return of Common Stock $(\overline{R})$

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

Symbolically,

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

where,

$E(R_j)$ = $\overline{R_j}$ = Expected rate of return on stock j

N = Number of years that the return is taken.

$\sum$ = Sign of Summation.

3.4.5 Standard Deviation

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

Symbolically,

$$\sigma_j = \sqrt{\frac{(R_j - \overline{R}_j)^2}{n-1}}$$

where,

σ_j = standard deviation of returns on stock j during the time period n.

Rj = Probability distribution of the observation

$\overline{R}_j$ = Expected rate of return on stock j.

n = Number of years that the returns are taken

3.4.6 Coefficient of Variance (CV)

It is the ratio of standard deviation of returns to the mean of that distribution. It is a measure of relative risk and return. It measures the risk per unit of return. It provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same. The higher coefficient of variation, higher the risk.

Symbolically,

$$CV = \frac{\sigma_j}{\overline{R}_j}$$

Where,

C.V. = Coefficient of variation of stock

σ_j = standard deviation of returns on stock j.

$\overline{R}_j$ = Expected rate of return on stock j.

3.4.7 Beta (ß)

It is an index of systematic risk. It measures the sensitivity of a stock's return on the market portfolio. Higher the beta, higher the sensitivity and reaction to the market movement. Beta coefficient of a particular stock will be less that equal or more than 1, but the beta for market will be always 1.

Symbolically,

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

where,

B_j = Beta coefficient of stock j

$\text{Cov}(R_j R_m)$ = Covariance between R_j and R_m, and equal to

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

σ_m^2 = Variance of market return.

3.4.8 Correlation Coefficient

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

$\text{Covj} = \sigma_i \ \sigma_j \ \rho ij$

$$\rho ij = \frac{(\text{Covij})}{\sigma i \sigma j}$$

Where σ_i and σ_j are the standard deviations of returns for assets I and j and pij is correlation coefficient for asset I and j

3.4.9 Return on Market

It is the percentage increase in NEPSE index. Market return is the average return of the market as a whole.

$$\text{Rm} = \frac{\sum \text{Rm}}{\text{n}}$$

Where,

$\sum$ = sign of summation.

Rm=Market return

N=Number of samples period

3.4.10 Portfolio Risk and Return

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

have to choose that investment opportunity which maximizes return for a given level of return. Thus the combination of these investments is called portfolio.

3.4.11 Portfolio Return

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

E(Rp) = Wi E(Ri)+Wj E(Rj)

Where,

E(Rp)=Expected return on portfolio

Wi=Proportion of wealth investment in I assets.

Wj= Proportion of wealth investment in j assets.

E(Ri)=Expected return on i assets.

E(Rj)=Expected return on j assets.

3.4.12 Portfolio Risk

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

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

Where

σ_p=Standard deviation of stock i and j

Wi= Proportion of asset i

Wj=Proportion of asset j

σ_i =Variance of assets i

σ_j=Variance of assets j

Cov (Ri,Rj)=Covariance between the return of assets i and j

3.4.13 Portfolio Beta

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

$$\text{Portfolio beta(bp)} = \sum_{j=1}^{n} \text{Wjbj}$$

Where

Wj= proportion of the portfolio

bj=beta coefficient of asset j

bp=portfolio beta coefficient

3.5 Method of Analysis and Presentation

Methods of analysis are applied as simple as possible. Results are presented in tabular form and clear interpretation on it is given simultaneously. Detail calculations, which can not be shown in the body part of the report, are presented as annexes at the end of the report. To make report simpler and easily understandable; charts, bar diagrams and charts have been used. Summary, findings and recommendations are presented finally.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

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

4.1 Nabil Bank Limited (NABIL)

4.1.1 Introduction

Nabil Bank Limited (erstwhile Nepal Arab Bank Limited) was established on July 12, 1984 under a technical service agreement with Dubai Bank Limited, Dubai, which was later merged with Emirates Bank Ltd., Dubai. 50% of the total shares of Nabil Bank Limited is owned by N.B. International Limited, Ireland; 20% by local financial institutions and 30% by the Nepalese public.

The bank provides a complete range of personal, commercial and corporate banking and related financial services through its 28 branches and 17 ATMs in various parts of the country. Authorized capital, issued capital and paid-up capital of the bank by the end of Ashad 2064 were 50,00,00,000 , 49,16,54,400 and 49,16,54,400 respectively.

4.1.2 Analysis of Total Dividend

Table 4.1

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

FY	MPS in Rs	Cash DPS Rs	Stock Dividend (%)	Total Dividend (in Rs)	EPS (Rs.)	P/E Ratio
2057/58	1500	40	20	180	59.3	25.31
2058/59	700	30	-	30.00	55	12.67
2059/60	740	50	-	50.00	85	8.47
2060/61	1000	65	-	65.00	93	10.80
2061/62	1505	70	-	70	105	14.27
2062/63	2240	85	-	85	129	17.34
2063/64	5050	5	40	2155	138	36.84
Total						

Source: AGM Report of NABIL

The calculation of total dividend is annexed 1.

According to table 1, NABIL is paying cash dividend every year but stock dividend only in year 2057/58 and 2063/64. Highest total dividend is paid in the year 2063/64, i.e. 2155. P/E ratio of NABIL is maximum in the year 2063/64 i.e. 36.84 and minimum in the year 2059/60 i.e. 8.47. The closing MPS of NABIL is maximum of Rs. 5050 in the year 2063/64 and minimum of Rs. 700 in the year 2058/59.

Figure 4.1

Year and Price Movement of the Common Stock of NABIL

Figure 4.1 shows the trend line of market price in several year of NABIL. It can be seen that there is fluctuation of market price from year 2057/58 till 2063/64, and the trend line shows the rapid growth after 2060/61. There is minimum price in the year 2058/59 i.e. Rs. 700 and maximum in the year 2063/64 i.e. Rs. 5050.

4.1.3 Expected Return (Rj), Standard Deviation (σ) and Coefficient of Variation (C.V) of NABIL

Table 4.2

Expected Return, Standard Deviation and Coefficient of variation of NABIL

FY	MPS in Rs	Total Dividend	R= $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2057/58	1500	-	-	-	-
2058/59	700	30.00	-0.51	-1.08	1.16
2059/60	740	50.00	0.13	-0.44	0.19
2060/61	1000	65.00	0.44	-0.13	0.02
2061/62	1505	70	0.58	0.01	0.00
2062/63	2240	85	0.54	-0.03	0.00
2063/64	5050	2155	2.22	1.65	2.73
Total			3.4		4.10

Where,

R is calculated with the use of following formula:

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

The detail calculations of R for each fiscal year are given in Annex 2.

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{3.4}{6} = 0.567$$

The detail calculations of $(R-\bar{R})$ and $(R-\bar{R})^2$ for each fiscal year are given in Annex 3.

Standard Deviation (σ)

$$(\sigma) = \sqrt{\frac{(R - \bar{R})^2}{n-1}} = \sqrt{\frac{4.10}{6-1}} = 0.91$$

Coefficient of Variance

$$CV = \frac{\sigma}{\bar{R}} = \frac{0.91}{0.567} = 1.597$$

Expected return of NABIL is 0.567 with the total risk (measured by S.D) of 0.91. The C.V of NABIL is 1.597 which denotes that to get per unit return 1.597 risk must be sacrifice. So, higher the C.V higher will be the risk.

Following chart shows the realized rate of return per share of Nabil Bank Limited in the various years under study.

Figure 4.2

Realized Rate of Return per Share of Nabil Bank Limited

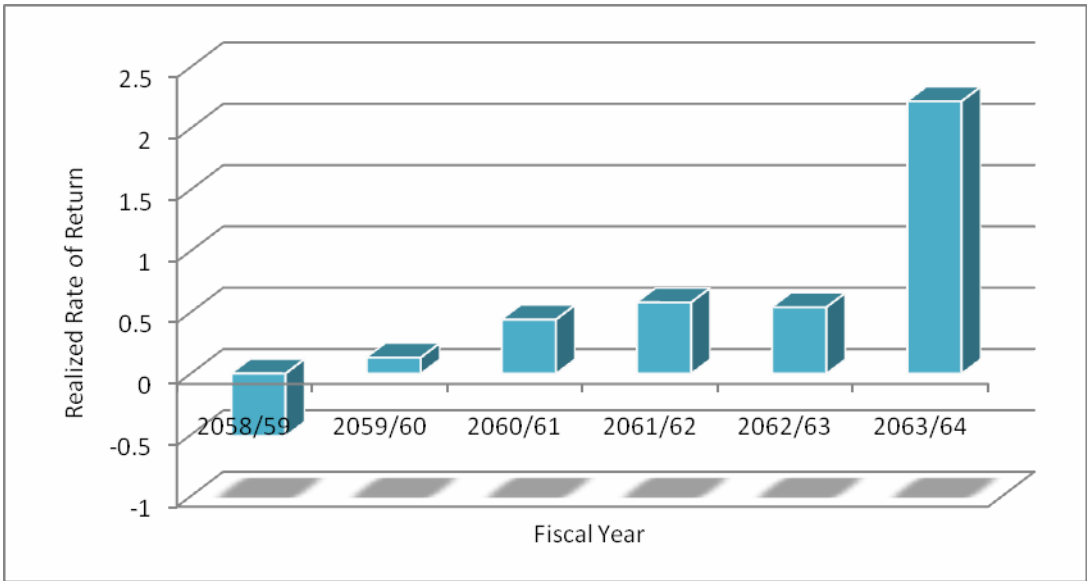


Figure 4.2 shows that the annual rate of return of C.S of NABIL in several years. The rate of return is maximum on 2063/64 i.e. 2.22 which shows highest return profitable while the return is negative in the year 2058/59 i.e -0.51.

4.2 Nepal Investment Bank Limited (NIBL)

4.2.1 Introduction

Nepal Investment Bank Limited was established on Falgun 16, 2042 BS under the name of Nepal Indo-Suez Bank Limited. The bank is managed by Banque Indonesia, Parh in accordance with Joint Venture and Technical Services Agreement signed between it and Nepalese promoters.

Nepal Investment Bank has its head office at Durbar Marg, Kathmandu and with seventeen branches and twenty ATM machines in various parts of the country, the bank renders its banking and financial services to its customers. The bank has the total asset of RS 13,25,54,96,016 by the end of Ashad 2064. Authorized capital, issued capital and paid up capital of the bank by the end of Ashad 2064 were RS 59,00,00,000, Rs 29,52,93,000 and Rs 29,52,93,000 respectively.

Following table shows the market price per share, dividend per share and rate of return per share or Nepal Investment Bank Limited.

4.2.2 Analysis of Total Dividend

Table 4.3

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

FY	MPS (in Rs)	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (in Rs)	EPS (Rs.)	P/E Ratio
2057/58	1150	-	-	-	33.18	34.65
2058/59	760	-	30	238.50	33.59	22.62
2059/60	795	20	-	20.00	0.1286	20.10
2060/61	940	15	-	15.00	0.4392	18.18
2061/62	800	12.5	-	12.5	0.5750	20.25
2062/63	1260	20	35.46	633.10	0.5449	21.23
2063/64	1729	5	25	670	1.2991	27.63
Total			**4.1780**			

Data Source: AGM Report of NIBL

The calculation of total dividend is annexed 1.

According to table 4.3, NIBL is not paying cash and stock dividend every year. In the year 2062/63 and 2063/64 it is paying both cash and stock dividend. Highest total dividend is paid in the year 2063/64 i.e. Rs 670. P/E ratio of NIBL is maximum in the year 2057/58 i.e. 34.65 and minimum in the year 2060/61 i.e. 18.18. The closing MPS of NIBL is maximum of Rs. 1729 in the year 2063/64 and minimum of Rs. 760 in the year 2058/59.

Figure 4.3

Year and Price Movement of the Common Stock of NIBL

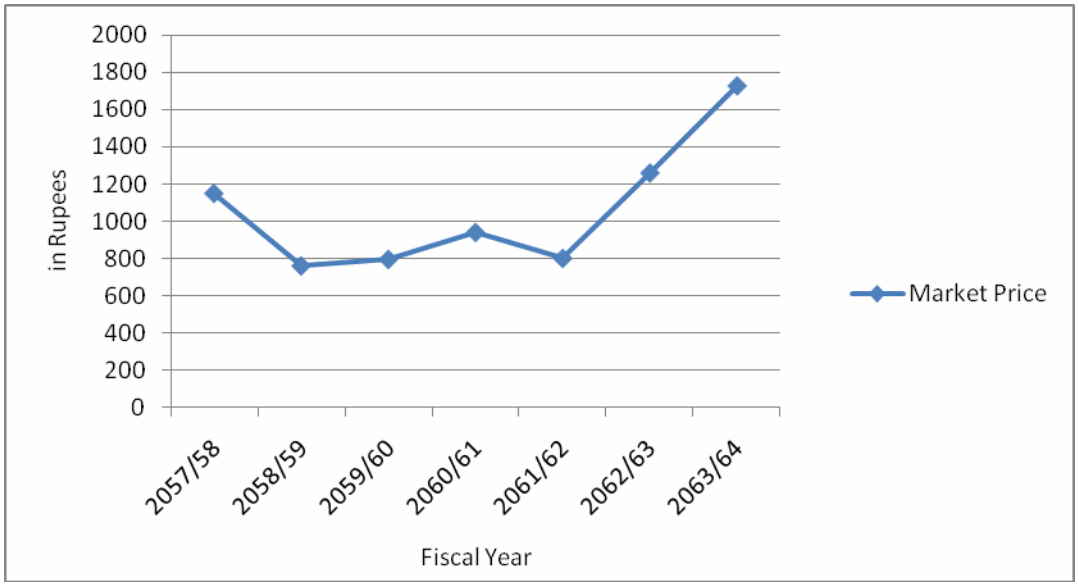


Figure 4.3 shows the trend line of market price in several year of NIBL. It can be seen that there is fluctuation of market price from year 2057/58 till 2061/62, and the trend line shows the rapid growth after 2060/61. There is minimum price in the year 2058/59 i.e. Rs. 760 and maximum in the year 2063/64 i.e. Rs. 1729.

4.2.3 Expected Return (Rj), Standard Deviation (σ) and Coefficient of Variation (C.V) of NIBL

Table 4.4

Expected Return, Standard Deviation and Coefficient of variation of NIBL

FY	MPS in Rs	Total Dividend	R= $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R- $\bar{R}$)	(R- $\bar{R}$)^2
2057/58	1150	-	-	-	-
2058/59	760	238.50	-0.132	-0.5112	0.2613
2059/60	795	20	0.072	-0.3071	0.0943
2060/61	940	15	0.201	-0.1782	0.0318
2061/62	800	12.5	-0.136	-0.5151	0.2653
2062/63	1260	633.10	1.366	0.9869	0.9740
2063/64	1729	5	0.904	0.5245	0.2751
Total			**2.275**		**1.9018**

The detail calculations of R for each fiscal year are given in Annex 2.

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{2.275}{6}$ = 0.379

The detail calculations of (R- $\bar{R}$) and (R- $\bar{R}$)^2 for each fiscal year are given in Annex 3.

Standard Deviation

(σ) = $\sqrt{\frac{(R - \bar{R})^2}{n-1}} = \sqrt{\frac{1.9}{6-1}}$ = 0.616

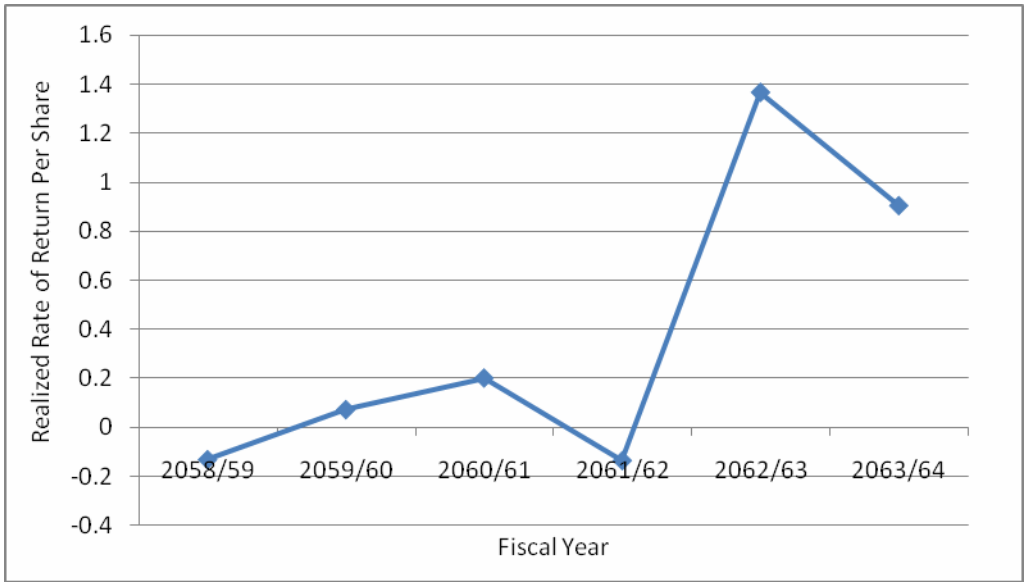
Coefficient of Variance

CV = $\frac{\sigma}{\bar{R}}$ = $\frac{0.616}{0.379}$ =1.62

Expected return of NIBL is 0.379 with the total risk (measured by S.D) of 0.616. The C.V of NIBL is 1.62 which denotes that to get per unit return 1.62 risk must be sacrifice. Following bar diagram shows the market price per share of Nepal Investment Bank Limited in the various years under study.

Figure 4.4

Rate of Return of Nepal Investment Bank



The figure 4.4 shows that the annual rate of return of C.S of NIBL in several years. The rate of return is maximum on 2062/63 i.e. 1.3664 which shows highest return profitable while the return is negative in the year 2057/58 and 2061/62 i.e. -0.1317 and -0.1356 respectively.

4.3 Standard Chartered Bank Limited

4.3.1 Introduction

Standard Chartered Bank Limited was incorporated in 1985 as a second foreign joint venture bank in the name of Nepal Grindlays Bank Limited. The bank was formally under the management of ANZ Grindlays Bank as per the joint venture and technical agreement signed between it and the Nepalese promoters. The authorized capital, issued capital and paid-up capital of the bank by the end of Ashad 2064 were 1,00,00,00,000,

50,00,00,000 and 37,46,40,400 respectively. The bank has ten branches and four counters in different cities. The bank has provided various services including recently launched home banking system.

Today the Bank is an integral part of Standard Chartered Group having an ownership of 75% in the company with 25% shares owned by the Nepalese public. The Bank enjoys the status of the largest international bank currently operating in Nepal.

Standard Chartered has a history of over 150 years in banking and operates in many of the world's fastest-growing markets with an extensive global network of over 1750 branches (including subsidiaries, associates and joint ventures) in over 70 countries in the Asia Pacific Region, South Asia, the Middle East, Africa, the United Kingdom and the Americas. As one of the world's most international banks, Standard Chartered employs almost 75,000 people, representing over 115 nationalities, worldwide. This diversity lies at the heart of the Bank's values and supports the Bank's growth as the world increasingly becomes one market.

With 17 points of representation, 18 ATMs across the country and with more than 350 local staff, Standard Chartered Bank Nepal Ltd. is in a position to serve its customers through an extensive domestic network. In addition, the global network of Standard Chartered Group gives the Bank a unique opportunity to provide truly international banking services in Nepal.

Standard Chartered Bank Nepal Limited offers a full range of banking products and services in Consumer banking, Wholesale and SME Banking catering to a wide range of customers encompassing individuals, mid-market local corporates, multinationals, large public sector companies, government corporations, airlines, hotels as well as the DO segment comprising of embassies, aid agencies, NGOs and INGOs.

4.3.2 Analysis of Total Dividend

Following table shows the market price per share, dividend per share and rate of return per share.

Table 4.5

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

FY	MPS in Rs	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (in Rs)	EPS (Rs.)	P/E Ratio
2057/58	2144	100	-	100	96.17	24.62
2058/59	1575	100	-	100	98.48	20.65
2059/60	1640	120	-	120	100.22	18.08
2060/61	1745	110	-	110	143.55	12.16
2061/62	2345	120	-	120	143.95	16.29
2062/63	3775	140	-	140	175.84	21.47
2063/64	5900	80	-	80	167.46	35.23
Total						

Data Source: AGM Report of SCBL

The calculation of total dividend is annexed 1.

According to table 4.5, SCBL is not paying stock dividend every year. Highest total dividend is paid in the year 2062/63 i.e. Rs 140. P/E ratio of SCBL is maximum in the year 2063/64 i.e. 35.23 and minimum in the year 2060/61 i.e. 12.16. The closing MPS of SCBL is maximum of Rs. 5900 in the year 2063/64 and minimum of Rs. 1575 in the year 2058/59.

Figure 4.5
Year and Price Movement of the Common Stock of SCBL

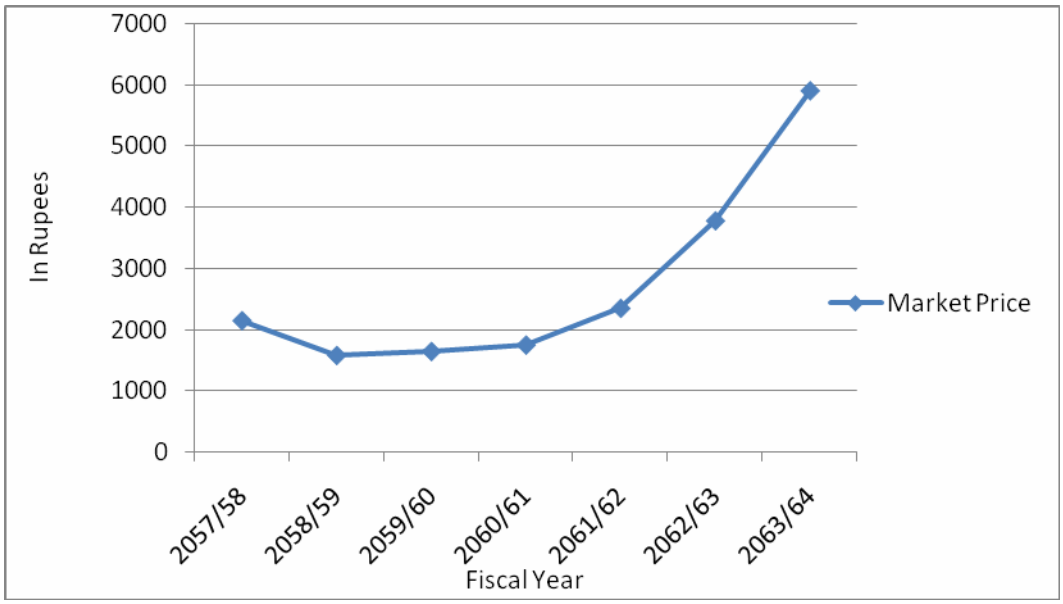


Figure 4.5 shows the trend line of market price in several year of SCBL. It can be seen that there is fluctuation of market price from year 2060/61 till 2063/64, and the trend line shows the rapid growth after 2060/61. There is minimum price in the year 2058/59 i.e. Rs. 1575 and maximum in the year 2063/64 i.e. Rs. 5900.

4.2.3 Expected Return (Rj), standard Deviation (σ) and Coefficient of variation (C.V) of SCBL

Table 4.6
Realized Rates of Return, Expected Return and S. D. of SCBL

FY	MPS in Rs	Total Dividend	R= $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R- $\overline{R}$)	(R- $\overline{R}$)^2
2057/58	2144	100	-	-	-
2058/59	1575	100	-0.2188	-0.4797	0.2301
2059/60	1640	120	0.1175	-0.1435	0.0206
2060/61	1745	110	0.1311	-0.1298	0.0169
2061/62	2345	120	0.4126	0.1517	0.0230
2062/63	3775	140	0.6695	0.4086	0.1669
2063/64	5900	80	0.5841	0.3232	0.1044
Total			**1.696**		0.5593

The detail calculations of R for each fiscal year are given in Annex 2.

Now,

Expected Return ($\overline{R}$) $= \frac{1.696}{6} = 0.28$

The detail calculations of R - $\overline{R}$ and (R - $\overline{R}$)^2 for each fiscal year are given in Annex 3.

Standard Deviation

$$\sigma = \sqrt{\frac{(R - \overline{R})^2}{n-1}} = \sqrt{\frac{0.5593}{6-1}} = 0.33$$

Coefficient of Variance

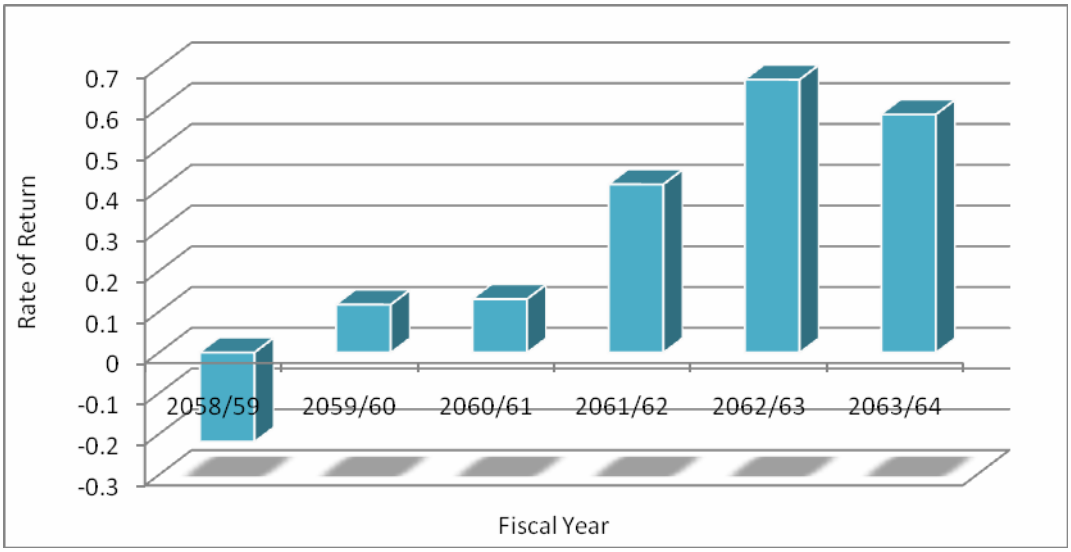
$$CV = \frac{\sigma}{\overline{R}} = \frac{0.33}{0.28} = 1.19$$

Expected return of SCBL is 0.28 with the total risk (measured by S.D) of 0.33. The C.V of SCBL is 1.19.

Following chart shows the rate of return of Standard Chartered Bank Limited in the various years under scrutiny.

Figure 4.6

Realized Rate of Return of Per Share of Standard Chartered Bank Limited



The figure 4.6 shows that the annual rate of return of C.S of SCBL in several years. The rate of return is maximum on 2062/63 i.e. 0.6695 which shows highest return profitable while the return is negative in the year 2058/59 i.e. -0.2899.

4.4 Himalayan Bank Limited (HBL)

4.4.1 Introduction

Himalayan Bank was established in 1993 by local businessmen in partnership with Habib Bank of Pakistan. It was the first joint venture bank under Nepalese management and with Nepalese shareholding control. It was the first bank to introduce local credit cards, acquire the first automatic teller machine and start tele-banking operations. In addition to its commercial activities, it also facilitates industrial and merchant banking activities. It has a total of 12 branches. The authorized capital, issued capital and paid up capital of the bank by the end of Ashad 2064 were 1,00,00,00,000, 772,200,000 and 772,200,000 respectively.

4.4.2 Analysis of Total Dividend

Following table shows the market price per share, dividend per share and rate of return per share.

Table 4.7

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

FY	MPS in	Cash DPS	Stock	Total	EPS	P/E

	Rs (Pt)	(Rs.)	Dividend (%)	Dividend (Rs)		Ratio
2057/58	1500	27.5	30	327.50	93.75	16.03
2058/59	1000	25	10	108.60	60.26	16.59
2059/60	836	1.32	23.68	200.23	49.45	16.91
2060/61	840	0.00	20	184	49.05	17.12
2061/62	920	11.58	20	231.58	47.91	19.20
2062/63	1100	30	5	117	59.24	18.57
2063/64	1740	15	25	545	60.66	28.69

Source: AGM Report of HBL

The calculation of total dividend is annexed 1.

Table 4.7 shows that HBL is paying cash and stock dividend every year. Highest total dividend is paid in the year 2063/64 i.e. Rs 545 and lowest is in the year 2058/59 i.e. Rs 108.60. P/E ratio of HBL is maximum in the year 2063/64 i.e. 28.69 and minimum in the year 2057/58 i.e. 16.03. P/E ratio is in increasing trend from starting year 2057/58 to the ending year 2061/62. The closing MPS of HBL is maximum of Rs. 1740 in the year 2063/64 and minimum of Rs. 836 in the year 2059/60.

Figure 4.7

Year and Price Movement of the Common Stock of HBL

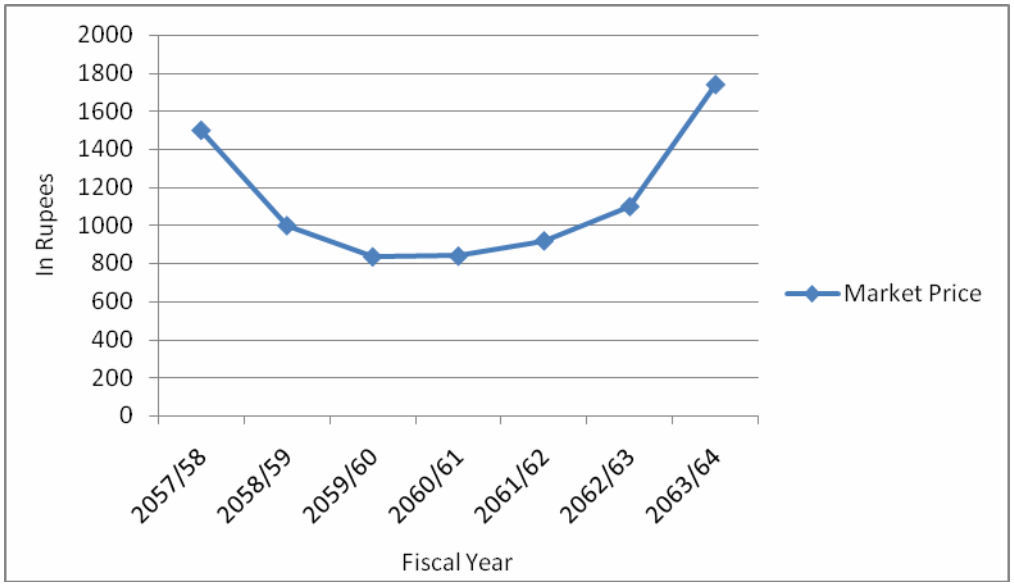


Figure 4.7 shows the trend line of market price in several year of HBL. It can be seen in the fluctuating trend. The minimum is in the year 2060/61 i.e Rs. 836 and maximum in the year 2063/64 i.e. Rs. 1740. It can be seen that there is decreasing trend from 2058/59 and the trend line shows the rapid growth after 2060/61.

4.4.3 Expected Return (Rj), standard Deviation (σ) and Coefficient of variation (C.V) of HBL

Table 4.8

Expected Return, Standard Deviation and Coefficient of variation of HBL

FY	MPS in Rs	Total Dividend	R= $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R- $\bar{R}$)	(R- $\bar{R}$)^2
2057/58	1500	327.50	-	-	-
2058/59	1000	108.60	-0.2609	-0.5561	0.3092
2059/60	836	200.23	0.0362	-0.2590	0.0671
2060/61	840	184	0.2249	-0.0703	0.0049
2061/62	920	231.58	0.3709	0.0757	0.0057
2062/63	1100	117	0.3228	0.0276	0.0008
2063/64	1740	545	1.0773	0.7821	0.6117
Total			**1.7712**		**0.9994**

The detail calculations of R for each fiscal year are given in Annex 2.

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{1.7712}{6}$ = 0.2952

The detail calculations of (R- $\bar{R}$) and (R- $\bar{R}$)^2 for each fiscal year are given in Annex 3.

Standard Deviation

(σ) = $\sqrt{\frac{(R-\bar{R})^2}{n-1}} = \sqrt{\frac{0.9994}{6-1}}$ = 0.45

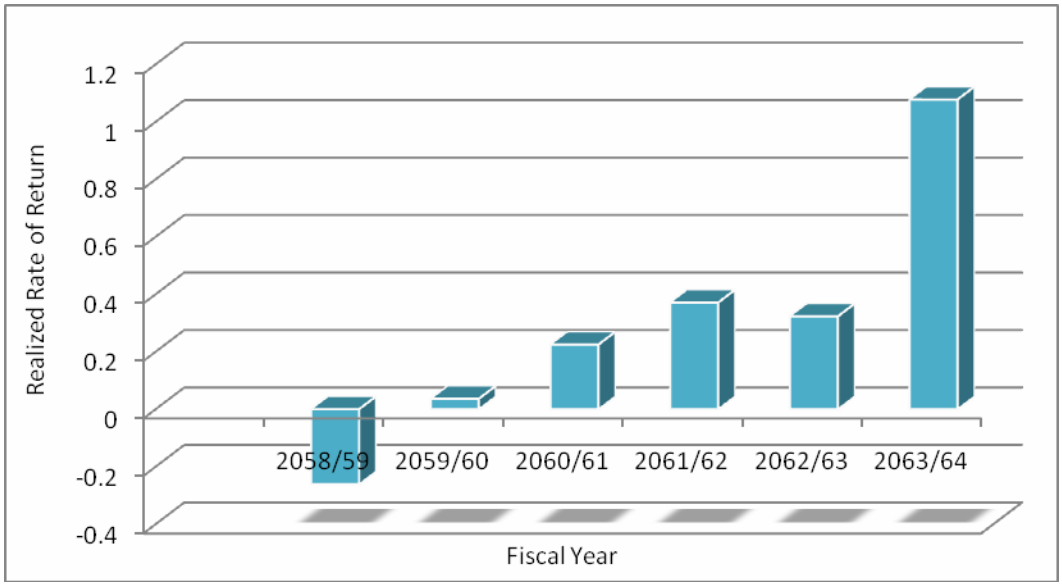
Coefficient of Variance

CV = $\frac{\sigma}{\bar{R}}$ = $\frac{0.45}{0.3}$ =1.515

Expected return of HBL is 0.2952 with the total risk (measured by S.D) of 0.45. The C.V of HBL is 1.515 which denotes that to get per unit return 1.515 risk must be sacrifice.

Figure 4.8

Annual Rate of Return of Himalayan Bank Ltd.



The figure 4.8 shows that the annual rate of return of C.S of HBL in several years. The rate of return is maximum on 2063/64 i.e. 1.0773 which shows highest return profitable while the return is negative in the year 2058/59 i.e. -0.2609.

4.5 Everest Bank Limited (EBL)

4.5.1 Introduction

Everest Bank Limited was established in1992 under the Company Act as one of the joint-venture banks. Earlier, its foreign joint-venture partner was United Bank of India Limited but from December 1996 onwards, its management was taken over by Punjab National Bank Limited of India that holds 20% of equity on the bank's share capital.

The authorized capital, issued capital and paid-up capital of the bank by the end of Ashad 2064 were 75, 00, 00,000, 46, 68, 00,000 and 45, 50, 00,000 respectively.

4.5.2 Analysis of Total Dividend

Table 4.9

MPS, DPS and P/E Ratio of EBL

FY	MPS in Rs	Cash DPS (Rs.)	Stock Dividend (%)	Total Dividend (in Rs)	EPS (Rs.)	Remarks
2057/58	650	-	-	-	31.56	20.59
2058/59	405	-	20	89.00	32.90	12.31
2059/60	445	20	-	20.00	29.90	14.90
2060/61	680	20	-	20.00	45.60	14.90
2061/62	870	-	20	275.80	54.20	16.00
2062/63	1379	25	-	25.00	62.80	22.00
2063/64	2430	10	30	862.00	78.40	31.00

Data Source: AGM Report of EBL

The calculation of total dividend is annexed 1.

According to table, there is no cash dividend in the year 2057/58, 2058/59 and 2061/62. And it is paying stock dividend in the year 2058/59, 2061/62 and 2063/64. In the year 2063/64 it is paying both cash and stock dividend. Highest total dividend is paid in the year 2063/64 i.e. Rs. 862 and there is no stock and cash dividend in the year 2057/58. P/E ratio of EBL is maximum in the year 2063/64 i.e. 31 and minimum in the year 2058/59 i.e. 12.31. P/E ratio is in increasing trend from 2060/61. The closing MPS of EBL is maximum of Rs.2430 in the year 2063/64 and minimum of Rs. 405 in the year 2058/59.

Figure 4.9

Year and Price Movement of the Common Stock of EBL

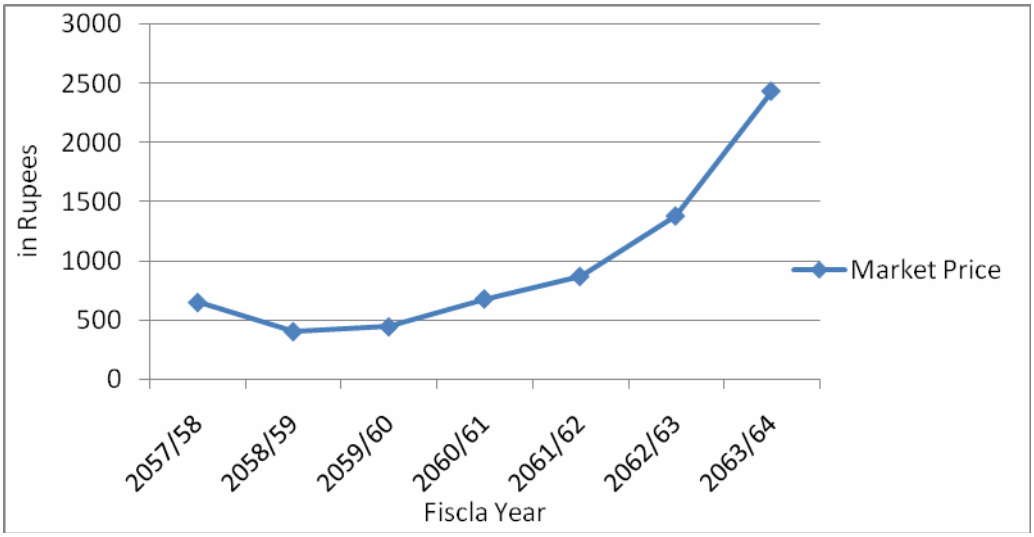


Figure 4.9 shows the trend line of price of EBL which is in increasing trend from 2059/60. The price is minimum in the year 2058/59 i.e. Rs. 405 and maximum in the year 2063/64 i.e. Rs. 2430. It is shown that there is slow growth from year 2058/59 to 2059/60 and rapid growth from 2060/61. Overall price of EBL seems as satisfactory with their growth in the market price.

4.5.3 Expected Return (Rj), standard Deviation (σ) and Coefficient of variation (C.V) of EBL

Table 4.10

Expected Return, S. D and CV of EBL

FY	MPS in Rs	Total Dividend	$R=\frac{D_t+(P_t-P_{t-1})}{P_{t-1}}$	$(R-\bar{R})$	$(R-\bar{R})^2$
2057/58	650	-	-	-	-
2058/59	405	89.00	-0.2400	0.7679	0.5897
2059/60	445	20.00	0.1481	-0.3798	0.1442
2060/61	680	20.00	0.5730	0.0451	0.0020
2061/62	870	275.80	0.6850	0.1571	0.0247
2062/63	1379	25.00	0.6138	0.0859	0.0074
2063/64	2430	862.00	1.3872	0.8593	0.7384
Total			**3.1671**		**1.5064**

The detail calculations of R for each fiscal year are given in Annex 2.

Now,

Expected Return ($\bar{R}$) = $\frac{3.1671}{6}$ = 0.5279

The detail calculations of R - $\bar{R}$ and $(R-\bar{R})^2$ for each fiscal year are given in Annex 3.

Standard Deviation

$\sigma = \sqrt{\frac{(R-\bar{R})^2}{n-1}} = \sqrt{\frac{1.5064}{6-1}} = 0.5486$

Coefficient of Variance

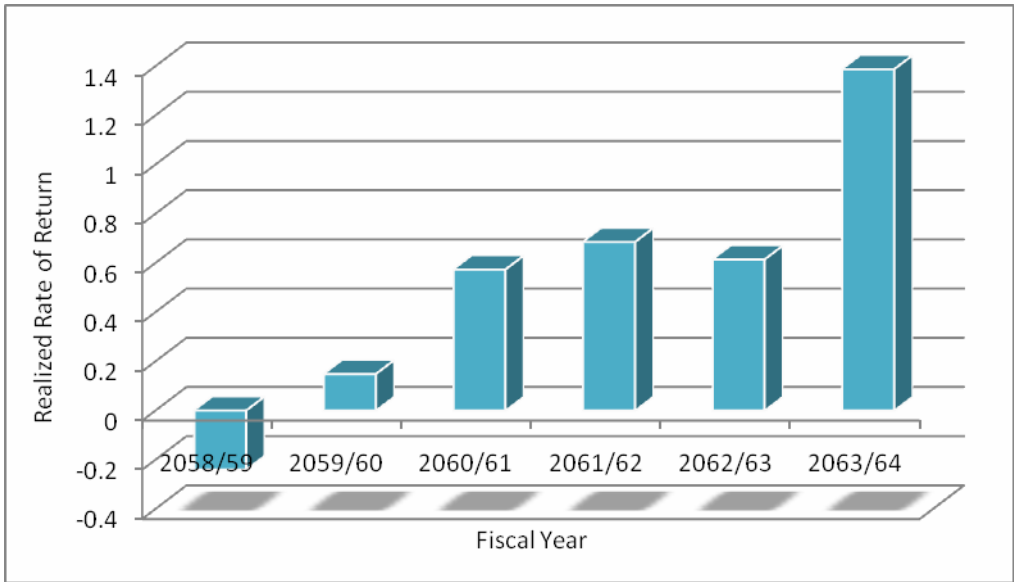
$$CV = \frac{\sigma}{\bar{R}} = \frac{0.5486}{0.5279} = 1.0392$$

Expected return of EBL is 0.5279 with the total risk (measured by S.D) of 0.5486. The C.V of EBL is 1.0392 which indicates the investor needs to sacrifice 1.0392 unit of risk for per unit return.

Following figure shows the market price per share of EBL in the various years under study.

Figure 4.10

Annual Return of EBL



The figure 4.10 shows that the annual rate of return of EBL in several years. The rate of return is negative in the year 2058/59 and positive in following years. There is highest return of 1.3872 in the year 2063/64 and lowest return of -0.2400 in the year 2058/59. There is fluctuation of returns.

4.6 Bank of Kathmandu Limited (BoK)

4.6.1 Introduction

Bank of Kathmandu Limited was established in 2050 BS in collaboration with the SIAM Commercial Bank PCC, Thailand under the Company Act with the objective to stimulate the Nepalese economy and take it to newer heights.. Out of 50% of share holding, the SIAM Commercial Bank diluted its 25% of holding to the Nepalese citizen in 1998. The bank has eleven branches in operation. The authorized capital, issued capital and paid-up capital of the bank by the end of Ashad 2064 were 1,00,00,00,000, 50, 00, 00,000 and 46, 35, 80,900 respectively. BOK aims to facilitate the nation's economy and to become more competitive globally. To achieve these, BOK has been focusing on its set objectives right from the beginning. Bank of Kathmandu Limited has become a prominent name in the Nepalese banking sector.

Bank of Kathmandu Limited (BOK) has today become a landmark in the Nepalese banking sector by being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public.

BOK's IT infrastructure has been designed, to facilitate, internal and customer convenience. Nationwide, all the branches are connected to the central database via Wide Area Network (WAN) powered by Finacle, state-of-the-art banking application software supported by hardware like SUN Fire V880 RISC server, VSAT etc. Internally, BOK relies on Information & Communication Technology (ICT), for a quick, reliable, efficient system. Banking operations are powered by Finacle, which is listed among the top 40 companies that have reshaped the global economy as per the Wired Magazine.

4.6.2 Analysis of Total Dividend

Table 4.11

MPS, DPS and P/E Ratio of BOK

FY	MPS in Rs	Cash DPS	Stock Dividend (%)	Total Dividend (in Rs)	EPS (Rs.)	P/E
2057/58	850	-	-	-	27.97	23.39
2058/59	254	10	10	29.8	2.00	108.96
2059/60	198	5	-	5	17.72	11.18
2060/61	295	10	-	10	27.50	7.20
2061/62	430	15	-	15	30.10	14.29
2062/63	850	18	12	183	43.67	19.46
2063/64	1375	20	-	20	45.59	30.16

Source: Annual Report of BoK

The calculation of total dividend is annexed 1.

According to table 4.11, Bok is not paying cash dividend and stock dividend every year In year 2058/59 and 2062/63, it is paying both cash and stock dividend. P/E ratio of Bok is maximum in the year 2058/59 i.e. 108.96 and minimum in the year 2060/61 i.e. 7.20. The closing MPS of Bok is maximum of Rs. 1375 in the year 2063/64 and minimum of Rs. 198 in the year 2059/60.

Figure 4.11

Year and Price Movement of the Common Stock of BoK

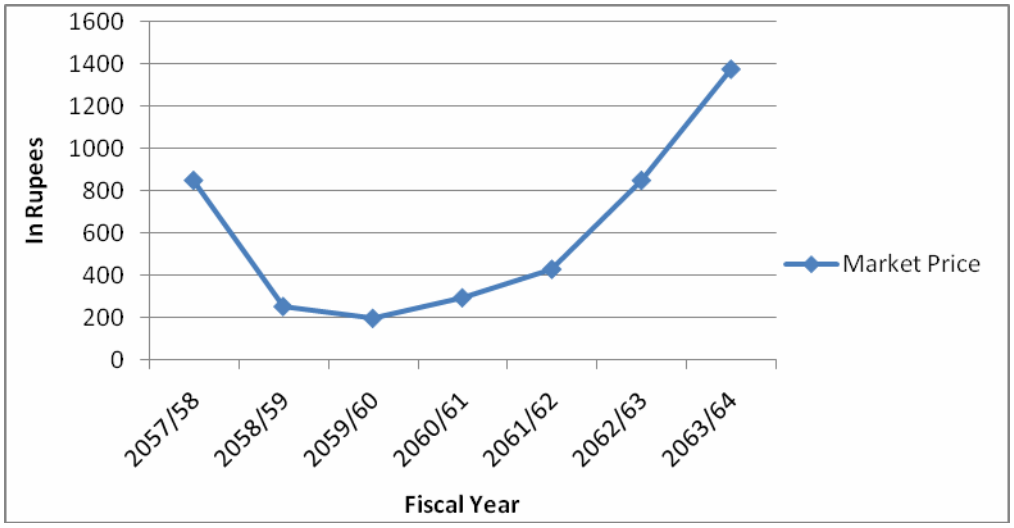


Figure 4.11 shows the trend line of market price in several year of BoK. It can be seen that there is fluctuation of market price from year 2057/58 till 2063/64, and the trend line shows the rapid growth after 2060/61. There is minimum price in the year 2059/60 i.e. Rs. 198 and maximum in the year 2063/64 i.e. Rs. 1375.

4.6.3 Expected Return (Rj), Standard Deviation (σ) and Coefficient of Variation (C.V) of BOK

Table 4.12

Expected Return, Standard Deviation and Coefficient of Variation of BoK

FY	MPS in Rs	Total Dividend	R= $\frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$	(R- $\bar{R}$)	(R- $\bar{R}$)^2
2057/58	850	-	-		
2058/59	254	29.8	-0.666	-1.037	1.076
2059/60	198	5	-0.201	-0.572	0.327
2060/61	295	10	0.540	0.169	0.029
2061/62	430	15	0.508	0.137	0.019
2062/63	850	183	1.402	1.031	1.064
2063/64	1375	20	0.641	0.270	0.073
Total			**2.225**		**2.587**

The detail calculations of R for each fiscal year are given in Annex 2.

Expected Return ($\bar{R}$) = $\frac{\sum R}{n} = \frac{2.225}{6}$ = 0.371

The detail calculations of (R- $\bar{R}$) and (R- $\bar{R}$)^2 for each fiscal year are given in Annex 3.

Standard Deviation

(σ) = $\sqrt{\frac{(R - \bar{R})^2}{n-1}}$ = $\sqrt{\frac{2.587}{6-1}}$ = 0.72

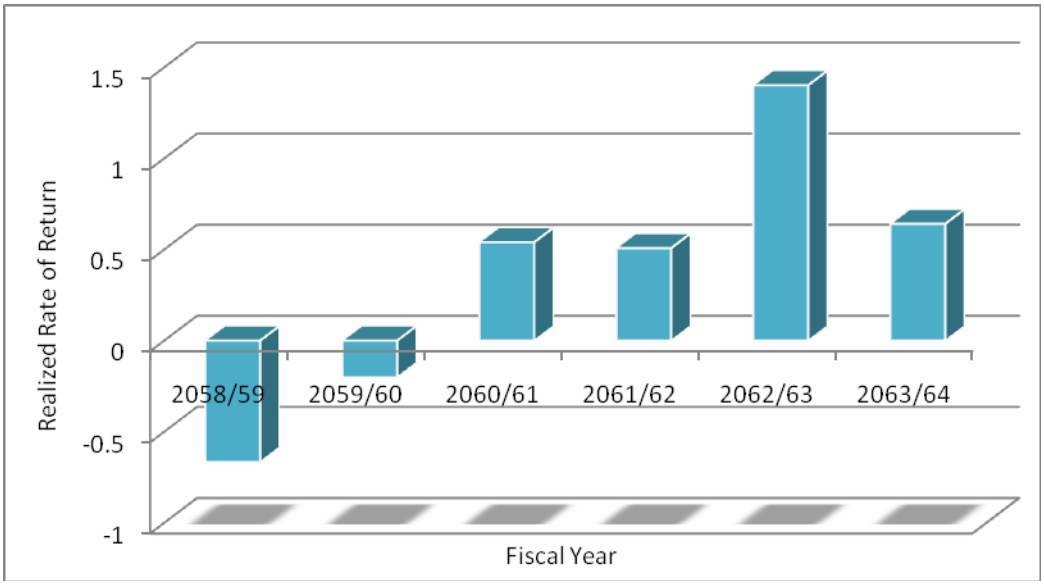
Coefficient of Variance

$$CV = \frac{\sigma}{\bar{R}} = \frac{0.72}{0.371} = 1.941$$

Expected return of BoK is 0.371 with the total risk (measured by S.D) of 0.72. The C.V of BoK is 1.941 which denotes that to get per unit return 1.941 risk must be bearded. It can be shown clearly in following figure.

Figure 4.12

Rate of Return of Bank of Kathmandu



The figure 4.12 shows that the annual rate of return of BoK in several years. The rate of return is negative in the year 2058/59 and 2059/60 and positive in following years. There is highest return of 1.402 in the year 2062/63 and lowest return of -0.666 in the year 2058/59.

4.7 Comparison of Expected Returns, Standard Deviation and the Coefficient of Variance between the Sampled Banks

The following table shows the expected returns, standard deviation and the coefficient of variance of the sampled banks in various years under studied.

Table 4.13

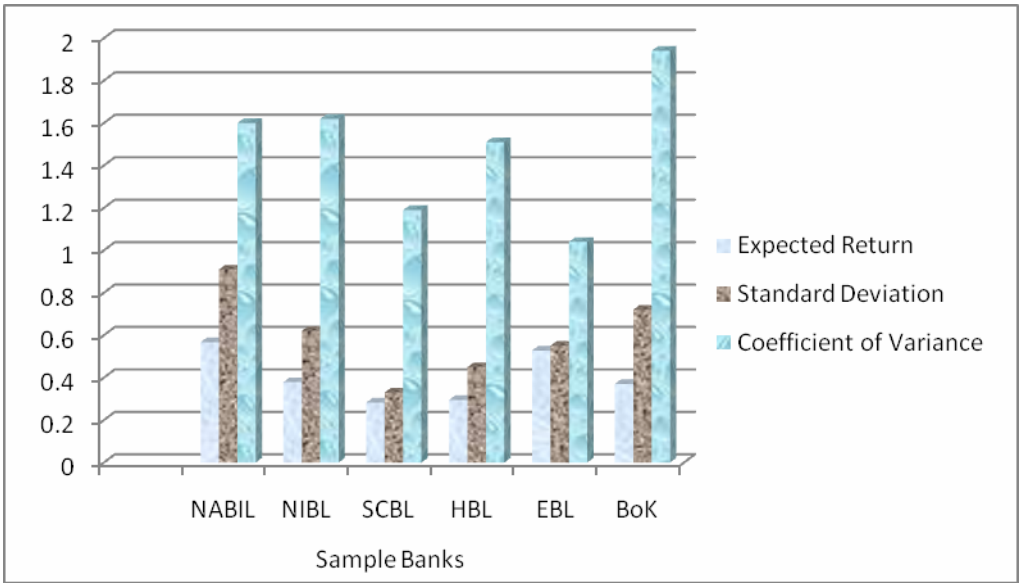
Expected Return, Standard Deviation and Coefficient of Variance of the Sampled Banks

S.N	Banks	Expected Return ($\overline{R}$)	Standard Deviation (σ)	Coefficient of Variance (CV)	Remarks
1	NABIL	0.567	0.91	1.6	Return-Highest , Risk-Highest
2	NIBL	0.379	0.62	1.62	
3	SCBL	0.2826	0.33	1.19	Return-Lowest, Risk-Lowest
4	HBL	0.2952	0.45	1.51	
5	EBL	0.5279	0.55	1.04	Return-Highest, CV-Lowest
6	BoK	0.371	0.72	1.941	CV-Highest

The statistical results imply that over the period, EBL and NABIL have highest expected return. The lowest expected return is 0.2826, which is observed in SCBL. Based on the standard deviation, the NABIL and BoK can be considered as high risk securities. The standard deviation of the returns on the shares of SCBL is the lowest one. Looking at the coefficient of variance, the share of the EBL has the lowest risk per unit of return; the highest being is of BoK. Investment in EBL is desirable because its return is higher and risk is lowest compared to others.

Figure 4.13

Expected Return, Standard Deviation and Coefficient of Variance of the Sampled Banks



By observing the figure 4.13, the comparison of the sampled banks in terms of risk and return can be clearly seen. It clarifies the expected return, standard deviation and coefficient of variation of each individual bank.

4.8 Realized Returns, Standard Deviation and Expected Return of the Banking Sector

The table below shows the realized returns, standard deviation and expected return of banking sector:

Table 4.14

Realized Rates of Return, Expected Return and S. D. of Banking Sector

Fiscal years	Banking Index (BI)	$R_{BI} = \frac{BI_t - BI_{t-1}}{BI_{t-1}}$	$R_{BI} - \bar{R}_{BI}$	$\left(R_{BI} - \bar{R}_{BI}\right)^2$	Remarks
2054/55	194.95	-	-	-	
2055/56	219.44	0.126	0.036	0.001	
2056/57	397.17	0.810	0.720	0.518	
2057/58	384.08	-0.033	-0.123	0.015	
2058/59	219.35	-0.429	-0.519	0.269	
2059/60	199.33	-0.091	-0.181	0.033	
2060/61	232.97	0.169	0.079	0.006	
Total		**0.551**		**0.17**	

Source: Various Annual Reports of NEPSE

The detail calculations are given in Annex: 4

Here,

Expected Return $\left(\bar{R}_{BI}\right) = \frac{0.551}{6} = 0.09$

Standard Deviation

$$\sigma = \sqrt{\frac{\left(R_{BI} - \bar{R}_{BI}\right)^2}{n-1}} = \sqrt{\frac{0.17}{6-1}} = 0.184$$

Coefficient of Variance

$$CV = \frac{\sigma}{\overline{R}_{BI}} = \frac{0.184}{0.09} = 2.044$$

Table 4.14 shows the return of banking sector in several years. There is highest return of banking sector in the year 2058/59 i.e. 0.810 and there are negative returns in the year 2057/58, 2058/59 and 2059/60 i.e. -0.003, -0.429 and -0.0913 respectively. The expected return is 0.242 with the total risk 2.044.

4.9 Study of Co-variance and Beta Coefficient of the Commercial Banking Sector with that of Market (NEPSE)

Table 4.15

Expected Return, Standard Deviation and Coefficient of Variance of the Market Index

Fiscal years	NEPSE Index (NI)	R_m	$R_m - \overline{R}_m$	$\left(R_m - \overline{R}_m\right)^2$	Remarks
2057/58	163.35	-	-	-	
2058/59	216.92	0.3279	0.228	0.052	
2059/60	360.7	0.6628	0.563	0.317	
2060/61	352.25	-0.0234	-0.123	0.015	
2061/62	227.54	-0.354	-0.454	0.206	
2062/63	204.41	-0.1017	-0.202	0.041	
2063/64	222.04	0.0862	-0.014	0.000	
Total		**0.5978**		**0.631**	

Source: Various Annual Reports of NEPSE.

The detail calculation is given in Annex 5.

Here,

$$\text{Expected Return } \left(\overline{R}_m\right) = \frac{0.5978}{6} = 0.1$$

Standard Deviation

$$\sigma = \sqrt{\frac{\left(R_m - \overline{R}_m\right)^2}{n-1}} = \sqrt{\frac{0.631}{6-1}} = 0.355$$

Coefficient of Variance

$$CV = \frac{\sigma}{\bar{R}_m} = \frac{0.355}{0.1} = 3.550$$

Table 16 shows the return of banking sector in several years. There is highest return of market in the year 2059/60 i.e. 0.6628 and there are negative returns in the year 2060/61, 2061/62 and 2062/63 i.e. -0.0234, -0.354 and -0.1017 respectively. The expected return of the market is 0.1 with the total risk (measured by S.D) of 0.35505, which means. 3.5505 risks must be sacrificed to get per unit market return.

The following table shows the beta coefficient of commercial banking index.

Table 4.16

Co-variance and Beta Coefficient of the Commercial Bank

Here $\langle R_{BI} - \bar{R}_{BI} \rangle$ is the total aggregate data of sample banks.

FY	$R_{BI} - \bar{R}_{BI}$	$R_m - \bar{R}_m$	$\langle R_{BI} - \bar{R}_{BI} \rangle \langle R_m - \bar{R}_m \rangle$	Remarks
2057/58	-	-	-	
2058/59	0.036	0.228	0.008	
2059/60	0.720	0.563	0.405	
2060/61	-0.123	-0.123	0.015	
2061/62	-0.519	-0.454	0.236	
2062/63	-0.181	-0.202	0.037	
2063/64	0.079	-0.014	-0.001	
Total			**0.700**	

$$\left(Cov_{R_{BI}R_m}\right) = \frac{\sum \left(R_{BI} - \bar{R}_{BI}\right)\left(R_m - \bar{R}_m\right)}{n-1} = \frac{0.700}{6-1} = 0.014$$

$$\text{Beta } B_j = \frac{\left(Cov_{R_{BI}R_m}\right)}{\sigma^2} = \frac{0.014}{(0.355)^2} = 0.111$$

Here the covariance is 0.014 beta-coefficients 0.111 of the commercial banking sector with that of the market which seems good enough for the general investors to invest in this sector.

4.9 Major Findings of the Study

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

- The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on common stock of NABIL is maximum (56.7%). Similarly expected return of NIBL, SCBL, HBL, EBL and Bok are 37.9%, 28.26%, 29.52%, 52.79% and 37.1% respectively.
- Risk is the variability of returns which is measured in terms of standard deviation. On the basis of standard deviation, common stock of NABIL is most risky since it has high S.D i.e. 0.91. Common stock of SCBL has least risk because of its low S.D of 0.33.
- On the other hand we know that C.V is more rational basis of investment decision, which measures the risk per unit of return. On the basis of CV, common stock of EBL is best among all other banks. EBL has 1.04 unit of risk per 1 unit of return. But common stock of BoK has the highest risk per unit of return.
- Most of the investors invest only keeping the return in the mind but they are found unable to calculate the risk factors of the security. Most of the Nepalese private investors invest in single security. Some of the investors use their fund in two or more securities. But it is found that they don't make any analysis of portfolio before selecting security. They invest their fund in different securities on the basis of expectation and assumption of individual securities rather than analysis of the effect of portfolio. It seems that they don't have knowledge of the risk diversification by using portfolio of their investment.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

In a developing economy like Nepal, capital market plays a vital role in making a sustained and self-reliant growth of the economy. Capital market helps in the collection and mobilization of the saving of the people which is much true even in case of Nepal. Among the capital market too, the role of the security market is immense in the sense that it offers a platform for the transaction of securities. In Nepal, NEPSE acts as a security market where the transactions of the listed shares are performed. The NEPSE has 135 companies listed by the end of 2007. Among these listed companies, commercial banks dominate the position in terms of amount traded, number of transactions and market capitalization. Today, there are fifteen commercial banks listed in the NEPSE. Simply saying, these banks collect deposits from the people and lend the same for investment and thereby gain the profit in the transactions. Banks are making good profit in recent years that is why general investors are more interested in making their investment in these banks' shares.

But most of the general Nepalese investors are investing in the shares merely because of the nice facts they have heard of or just for the sake of their interest. Proper analysis of risk and return to decide their investment is nearly absent in the practice. They hardly care for the risk- return behavior of the stocks before investing in them. Lack of knowledge of the stocks' risk and return among the general investors and their investment habit without thorough analysis of the coefficient of variance together with the relationship between risk and return of a particular industry with that of total market risk and return has been pinpointed as a major problem of this study.

Thus, describing the risk, return and other relevant variables that play role in stock investment together with the analysis of risk, return and coefficient of variance have been the major objectives of this report. And on the based of findings, the reports has presented some valuable suggestions.

Risk of an investor in investment is nothing but the chance that his investment brings less or no return and also the chance of losing all his investment. Return, on the other hand is the gain an investor make from his investment in the stocks. Coefficient of variance calculates risk per unit of return, useful especially in making investment decisions when there are equal risks but different returns or equal returns but different risks among the various stocks. In this aspect, expected rate of return for any stock is the weighted average rate or return using the probability of each rate of return as the weight whereas required rate of return is composed of a risk-free interest rate and a risk premium rate.

The study has adopted historical and analytical research design. The data utilized are mostly secondary in nature. Various financial and statistical tools are applied to synthesize and present the data. Among the fifteen commercial banks listed in the NEPSE, eight earlier established banks are taken as the sample for the study. Data of the last seven year are used for the study. Market price per share and dividend per share of the banks are used to analyze the risk and returns of the banks together with the NEPSE index of the banking sector and other industries are used.

Nabil Bank Limited was established in 1984 as the first joint venture commercial bank. The expected return of the bank for the period studied was 56.7% with standard deviation of 91% and coefficient of variance 1.6. Similarly, returns and risks of NIBL, SCBL and HBL were 37.9%, 28%; 29.52%; and 61.6%, 33%, 45% respectively. The coefficients of variance for these banks were 1.62, 1.19 and 1.515 respectively for the period studied. EBL and BoK had expected rate of return for the period studied as 52.79% and 37.1% respectively. The standard deviations for these banks for the same period were 54.86% and 72% respectively. However, the coefficient of variance for EBL was 1.0392, for BoK was 1.941.

The expected return, standard deviation and coefficient of variance of commercial banking sector were 24.2%, 63.2% and 2.613 respectively. Similarly, the expected return, standard deviation and coefficient of variance of market index were 10%, 35.5% and 3.550. Covariance and beta coefficient of commercial bank with market index were -

0.068 and -0.540 respectively which seems good enough for the general investors to invest in this sector.

5.2 Conclusion

The expected return of EBL and NABIL are highest among the sampled banks i.e 56.7% and 52.79% respectively. However, SCBL has lowest expected rate of return which is 28.26% followed by HBL with 29.52% expected rate of return. Analyzing the standard deviation of the sampled banks, SCBL is in the best position with standard deviation of 0.33. NABIL is in the worst position with standard deviation as high as 0.91. The coefficient of variance is worst for BoK which is 1.941. All the sampled joint-venture commercial banks have positive expected rate of return. However, the commercial banking sectors have positive return together with market sector.

5.3 Recommendations

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

1. Shares of commercial banking sector are more lucrative for the investors to invest. it is safer for the Nepalese investors to invest in this sector.
2. The covariance and beta-coefficient of the commercial banking sector with that of the market are also good enough for the general investors to invest in this sector.
3. Among the commercial banking sector too, investors should invest in shares of EBL as their coefficient of variance are good than other sampled commercial banks. However, NABIL, NIBL and BoK are more risky at the present time to invest in its share than other selected banks.
4. Analysis of personal risk, attitude, needs and requirements will be helpful before making an investment in stock market. Investors should make several discussions with stock holder before reaching at the decision. Investors should make their decision on the basis of reliable information rather than the imagination and rumors.

5. Broker firms are good way to exchange and share investment ideas. Mutual fund is worth while for people with little interest in investment. Investors are recommended to share experience, ideas and take view of expert before investing in stocks of individual banks.

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ANNEX-1
Calculation of Total Dividend

Nabil Bank Limited (NABIL):

Total Dividend in (Rs.)= Cash Dividend + % of stock Dividend × Next Year MPS								
2057/58	=	40	+	20%	×	700	=	Rs. 180
2058/59	=	30	+	0%	×	740	=	Rs. 30
2059/60	=	50	+	0%	×	1000	=	Rs. 50
2060/61	=	65	+	0%	×	1505	=	Rs. 65
2061/62	=	70	+	0%	×	2240	=	Rs. 70
2062/63	=	85	+	0%	×	5050	=	Rs. 85
2063/64	=	5	+	40%	×	5375	=	Rs. 2155

Nepal Investment Bank Limited (NIBL):

Total Dividend in (Rs.)= Cash Dividend + % of stock Dividend × Next Year MPS								
2057/58	=	0	+	0%	×	760	=	Rs. 0
2058/59	=	0	+	30%	×	795	=	Rs. 238
2059/60	=	20	+	0%	×	940	=	Rs. 20
2060/61	=	15	+	0%	×	800	=	Rs. 15
2061/62	=	12.5	+	0%	×	1260	=	Rs. 12.50
2062/63	=	20	+	35.46%	×	1729	=	Rs. 633.10
2063/64	=	5	+	25%	×	2660	=	Rs. 670

Standard Chartered Bank Limited:

Total Dividend in (Rs.)= Cash Dividend + % of stock Dividend × Next Year MPS								
2057/58	=	100	+	0%	×	1575	=	Rs. 100
2058/59	=	100	+	0%	×	1640	=	Rs. 100
2059/60	=	120	+	0%	×	1745	=	Rs. 120
2060/61	=	110	+	0%	×	2345	=	Rs. 110
2061/62	=	120	+	0%	×	3775	=	Rs. 120
2062/63	=	140	+	0%	×	5900	=	Rs. 140
2063/64	=	80	+	0%	×	6745	=	Rs. 80

Himalayan Bank Limited (HBL):

Total Dividend in (Rs.)= Cash Dividend + % of stock Dividend × Next Year MPS								
2057/58	=	27.50	+	30%	×	1000	=	Rs. 327.50
2058/59	=	25	+	10%	×	836	=	Rs. 108.60
2059/60	=	1.32	+	23.68%	×	840	=	Rs. 200.23
2060/61	=	0	+	20%	×	920	=	Rs. 184
2061/62	=	11.58	+	20%	×	1100	=	Rs. 231
2062/63	=	30	+	5%	×	1740	=	Rs.17
2063/64	=	15	+	25%	×	2120	=	Rs.545

Everest Bank Limited:

Total Dividend in (Rs.)= Cash Dividend + % of stock Dividend × Next Year MPS								
2057/58	=	0	+	0%	×	405	=	Rs. 0
2058/59	=	0	+	20%	×	445	=	Rs. 89
2059/60	=	20	+	0%	×	680	=	Rs. 20
2060/61	=	20	+	0%	×	870	=	Rs. 20
2061/62	=	0	+	20%	×	1379	=	Rs. 275.80
2062/63	=	25	+	0%	×	2430	=	Rs. 25
2063/64	=	10	+	30%	×	2840	=	Rs. 862

Bank of Kathmandu Limited:

Total Dividend in (Rs.)= Cash Dividend + % of stock Dividend × Next Year MPS								
2057/58	=	0	+	0%	×	254	=	Rs. 0
2058/59	=	10	+	10%	×	198	=	Rs. 29.8
2059/60	=	5	+	0%	×	295	=	Rs. 5
2060/61	=	10	+	0%	×	430	=	Rs. 10
2061/62	=	15	+	0%	×	850	=	Rs. 15
2062/63	=	18	+	12%	×	1375	=	Rs. 183
2063/64	=	20	+	0%	×	2350	=	Rs. 20

ANNEX-2
The Detail Calculations of R for each Fiscal Year

Nabil Bank Limited (NABIL):

FY	MPS	Total Dividend	R	Remarks
2057/58	1500	180	-	
2058/59	700	30.00	-0.51	
2059/60	740	50.00	0.13	
2060/61	1000	65.00	0.44	
2061/62	1505	70	0.58	
2062/63	2240	85	0.54	
2063/64	5050	2155	2.22	
Total			**3.4**	

where,

R is calculated with the use of following formula:

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

The detail calculations of R for each fiscal year:

FY 2058/59

$$R = \frac{30 + (700 - 1500)}{1500} = -0.5133$$

FY 2059/60

$$R = \frac{50 + (740 - 700)}{700} = 0.1286$$

FY 2060/61

$$R = \frac{65 + (1000 - 740)}{740} = 0.4392$$

FY 2061/62

$$R = \frac{70 + (1505 - 1000)}{1000} = 0.5750$$

FY 2062/63

$$R = \frac{85 + (2240 - 1505)}{1505} = 0.5449$$

FY 2063/64

$$R = \frac{2155 + (5050 - 2240)}{2240} = 2.217$$

Expected Return ($\overline{R}$) $= \frac{3.4}{6} = 0.567$

Nepal Investment Bank Limited (NIBL):

FY	MPS	Total Dividend	R	Remarks
2057/58	1150	-	-	
2058/59	760	238.50	-0.132	
2059/60	795	20	0.072	
2060/61	940	15	0.201	
2061/62	800	12.5	-0.136	
2062/63	1260	633.10	1.366	
2063/64	1729	670	0.904	
Total			**2.275**	

The detail calculations of R for each fiscal year:

FY 2058/59

$$R = \frac{238.50 + (760 - 1150)}{1150} = -0.132$$

FY 2059/60

$$R = \frac{20 + (795 - 760)}{760} = 0.072$$

FY 2060/61

$$R = \frac{15 + (940 - 795)}{795} = 0.201$$

FY 2061/62

$$R = \frac{12.5 + (800 - 940)}{940} = -0.136$$

FY 2062/63

$$R = \frac{633.10 + (1260 - 800)}{800} = 1.366$$

FY 2063/64

$$R = \frac{670 + (1729 - 1260)}{1260} = 0.904$$

$$\text{Expected Return } (\bar{R}) = \frac{\sum R}{n} = \frac{2.275}{6} = 0.379$$

Standard Chartered Bank Limited:

FY	MPS	Total Dividend	R	Remarks
2057/58	2144	-	-	
2058/59	1575	100	-02188	
2059/60	1640	120	0.1175	
2060/61	1745	110	0.1311	
2061/62	2345	120	0.4126	
2062/63	3775	140	0.6695	
2063/64	5900	80	0.5841	
Total			1.696	

The detail calculations of R for each fiscal year:

FY 2058/59

$$R = \frac{100 + (1575 - 2144)}{2144} = -0.2188$$

FY 2059/60

$$R = \frac{120 + (1640 - 1575)}{1575} = 0.1175$$

FY 2060/61

$$R = \frac{110 + (1745 - 1640)}{1640} = 0.1311$$

FY 2061/62

$$R = \frac{120 + (2345 - 1745)}{1745} = 0.4126$$

FY 2062/63

$$R = \frac{140 + (3775 - 2345)}{2345} = 0.6695$$

FY 2063/64

$$R = \frac{80 + (5900 - 3775)}{3775} = 0.5841$$

Expected Return ($\bar{R}$) $= \frac{1.696}{6} = 0.2826$

Himalayan Bank Limited (HBL):

FY	MPS in Rs (Pt)	Total Dividend	R	Remarks
2057/58	1500	-	-	
2058/59	1000	108.60	-0.2609	
2059/60	836	200.23	0.0362	
2060/61	840	184	0.2249	
2061/62	920	231.58	0.3709	
2062/63	1100	117	0.3228	
2063/64	1740	545	1.0773	
Total			**1.7712**	

The detail calculations of R for each fiscal year:

FY 2058/59

$$R = \frac{108.60 + (1000 - 1500)}{1500} = -0.261$$

FY 2059/60

$$R = \frac{200.23 + (836 - 1000)}{1000} = 0.0362$$

FY 2060/61

$$R = \frac{184 + (840 - 836)}{836} = 0.2249$$

FY 2061/62

$$R = \frac{231.58 + (920 - 840)}{840} = 0.3709$$

FY 2062/63

$$R = \frac{117 + (1100 - 920)}{920} = 0.3228$$

FY 2063/64

$$R = \frac{545 + (1740 - 1100)}{1100} = 1.0773$$

Expected Return ($\bar{R}$) $= \frac{1.7712}{6} = 0.2952$

Everest Bank Limited:

FY	MPS in Rs	Total Dividend	R	Remarks
2057/58	650	-	-	
2058/59	405	89.00	-0.2400	
2059/60	445	20.00	0.1481	
2060/61	680	20.00	0.5730	
2061/62	870	275.80	0.6850	
2062/63	1379	25.00	0.6138	
2063/64	2430	862.00	1.3872	
Total			**3.1671**	

The detail calculations of R for each fiscal year:

FY 2058/59

$$R = \frac{89 + (405 - 650)}{650} = -0.2400$$

FY 2059/60

$$R = \frac{20 + (445 - 405)}{405} = 0.1481$$

FY 2060/61

$$R = \frac{20 + (680 - 445)}{445} = 0.530$$

FY 2061/62

$$R = \frac{275.80 + (870 - 680)}{680} = 0.6850$$

FY 2062/63

$$R = \frac{25 + (1379 - 870)}{870} = 0.6138$$

FY 2063/64

$$R = \frac{862 + (2430 - 1379)}{1379} = 1.3872$$

Expected Return ($\overline{R}$) $= \frac{3.1671}{6} = 0.5279$

Bank of Kathmandu Limited:

FY	MPS in Rs (P_t)	Total Dividend	R	Remarks
2057/58	850	-	-	
2058/59	254	29.8	-0.666	
2059/60	198	5	-0.201	
2060/61	295	10	0.540	
2061/62	430	15	0.508	
2062/63	850	183	1.402	
2063/64	1375	20	0.641	
Total			**2.225**	

The detail calculations of R for each fiscal year:

FY 2058/59

$$R = \frac{29.8 + (254 - 850)}{850} = -0.666$$

FY 2059/60

$$R = \frac{5 + (198 - 254)}{254} = -0.201$$

FY 2060/61

$$R = \frac{10 + (295 - 198)}{198} = 0.540$$

FY 2061/62

$$R = \frac{15 + (430 - 295)}{295} = 0.508$$

FY 2062/63

$$R = \frac{183 + (850 - 430)}{430} = 1.402$$

FY 2063/64

$$R = \frac{20 + (1375 - 850)}{850} = 0.641$$

Expected Return ($\bar{R}$) = $\frac{2.225}{6}$ = 0.371

ANNEX-3

Calculation of Square of Deviation of Realized Rate of Return from the Expected Rate of Return

Nabil Bank Limited (NABIL):

FY	R	$R - \bar{R}$	$(R - \bar{R})^2$
2057/58	-	-	-
2058/59	-0.51	-0.51--0.567=-1.08	-1.08×-1.08=1.16
2059/60	0.13	0.13--0.567=-0.44	-0.44×-0.44=0.19
2060/61	0.44	0.44--0.567=-0.13	-0.13×-0.13=0.02
2061/62	0.58	0.58--0.567=0.01	0.01×0.01=0.00
2062/63	0.54	0.54--0.567=-0.03	-0.03×-0.03=0.00
2063/64	2.22	2.22--0.567=1.65	1.65×1.65=2.73
			4.10

Nepal Investment Bank Limited (NIBL):

FY	R	$R - \bar{R}$	$(R - \bar{R})^2$
2057/58	-	-	-
2058/59	-0.132	-0.132-0.379=-0.51	-0.51×-0.51=0.26
2059/60	0.072	0.072-0.379=-0.31	-0.31×-0.31=0.09
2060/61	0.201	0.201-0.379=-0.18	-0.18×-0.18=0.03
2061/62	-0.136	-0.136-0.379=-0.52	-0.52×-0.52=0.27
2062/63	1.366	1.366-0.379=0.99	0.99×0.99=0.97
2063/64	0.904	0.904-0.379=0.52	0.52×0.52=0.28
			1.9

Standard Chartered Bank Limited (SCBL):

FY	R	$R - \bar{R}$	$(R - \bar{R})^2$
2057/58	0.1305	-	-
2058/59	-0.2188	-0.2188-0.2826=-0.5014	-0.5014×-0.5014=0.2514
2059/60	0.1175	0.1175-0.2826=-0.1651	-0.1651×-0.1651=0.0273
2060/61	0.1311	0.1311-0.2826=-0.1515	-0.1515×-0.1515=0.0230
2061/62	0.4126	0.4126-0.2826=0.1300	0.1300×0.1300=0.0169
2062/63	0.6695	0.6695-0.2826=0.3869	0.3869×0.3869=0.1497
2063/64	0.5841	0.5841-0.2826=0.3015	0.3015×0.3015=0.091
			0.5593

Himalayan Bank Limited (HBL):

FY	R	$R - \bar{R}$	$(R - \bar{R})^2$
2057/58	-	-	-
2058/59	-0.2609	-0.2609-0.2952=-0.56	-0.56X-0.56=0.31
2059/60	0.0362	0.0362-0.2952=-0.26	-0.26X-0.26=0.07
2060/61	0.2249	0.2249-0.2952=-0.07	-0.07X-0.07=0.00
2061/62	0.3709	0.3709-0.2952=0.08	0.08X0.08=0.01
2062/63	0.3228	0.3228-0.2952=0.03	0.03X0.03=0.00
2063/64	1.0773	1.0773-0.2952=0.78	0.78X0.78=0.61
	1.7712		*0.9994*

Everest Bank Limited (EBL):

FY	R	$R - \bar{R}$	$(R - \bar{R})^2$
2057/58	-	-	-
2058/59	-0.2400	-0.2400-0.5279=-0.77	-0.77X-0.77=0.59
2059/60	0.1481	0.1481-0.5279=-0.38	-0.38X-0.38=0.14
2060/61	0.5730	0.5730-0.5279=0.05	0.05X0.05=0.00
2061/62	0.6850	0.6850-0.5279=0.16	0.16X0.16=0.02
2062/63	0.6138	0.6138-0.5279=0.09	0.09X0.09=0.01
2063/64	1.3872	1.3872-0.5279=0.86	0.86X0.86=0.74
			1.5064

Bank of Kathmandu (BoK):

FY	R	$R - \bar{R}$	$(R - \bar{R})^2$
2057/58	-	-	-
2058/59	-0.666	-0.666-0.371=-1.037	-1.037X-1.037=1.076
2059/60	-0.201	-0.201-0.371=-0.572	-0.572X-0.572=0.327
2060/61	0.540	0.540-0.371=0.169	0.169X0.169=0.029
2061/62	0.508	0.508-0.371=0.137	0.137X0.137=0.019
2062/63	1.402	1.402-0.371=1.031	1.031X1.031=1.064
2063/64	0.641	0.641-0.371=0.270	0.270X0.270=0.073
			2.587

ANNEX-4

Calculation of R_{BI}, $R_{BI} - \bar{R}_{BI}$, $\left(R_{BI} - \bar{R}_{BI}\right)^2$ of Banking Sector

Fiscal years	**Banking Index (BI)**	$R_{BI} = \frac{BI_t - BI_{t-1}}{BI_{t-1}}$	$R_{BI} - \bar{R}_{BI}$	$\left(R_{BI} - \bar{R}_{BI}\right)^2$
2057/58	194.95	-	-	-
2058/59	219.44	$\frac{219.44 - 194.95}{194.95}$ =-0.126	-0.126-0.09=0.036	0.036X0.036=0.001
2059/60	397.17	$\frac{397.17 - 219.44}{219.44}$ =-0.810	-0.810-0.09=0.720	0.720X0.720=0.518
2060/61	384.08	$\frac{384.08 - 397.17}{397.17}$ =-0.033	-0.033-0.09=-0.123	-0.123X-0.123=0.015
2061/62	219.35	$\frac{219.35 - 384.08}{384.08}$ =-0.429	-0.429-0.09=-0.519	-0.519X-0.519=0.269
2062/63	199.33	$\frac{199.33 - 219.35}{219.35}$ =-0.091	-0.091-0.09=-0.181	-0.151X-0.151=0.033
2063/64	232.97	$\frac{232.97 - 199.33}{199.33}$ **=0.169**	0.169-0.09=0.079	0.079X0.079=0.006
Total		**0.551**		**0.17**

Expected Return $\left(\bar{R}_{BI}\right)$ = $\frac{0.551}{6}$ = 0.09

ANNEX-5

Calculation of R_{BI}, $R_{BI}-\overline{R}_{BI}$, $\left(R_{BI}-\overline{R}_{BI}\right)^2$ of NEPSE INDEX

Fiscal years	NEPSE Index (NI)	R_m	$R_m-\overline{R}_m$	$\left(R_m-\overline{R}_m\right)^2$
2057/58	163.35	-	-	-
2058/59	216.92	$\frac{216.92-163.35}{163.35}$=0.3279	0.3279-0.1=-0.228	-0.228X-0.228=0.052
2059/60	360.7	$\frac{360.7-216.92}{216.92}$=0.6628	0.6628-0.1=0.563	0.563X0.563=0.317
2060/61	352.25	$\frac{352.25-360.7}{360.7}$=-0.0234	-0.0234-0.1=-0.123	-0.123X-0.123=0.015
2061/62	227.54	$\frac{227.54-352.25}{352.25}$=-0.354	-0.354-0.1=-0.454	-0.454X-0.454=0.206
2062/63	204.41	$\frac{204.41-227.54}{227.54}$=-0.1017	-0.1017-0.1=-0.202	-0.202X-0.202=0.041
2063/64	222.04	$\frac{222.04-204.41}{222.04}$=0.0862	0.0862-0.1=-0.014	-0.014X-0.014=0.000
Total		**0.5978**		**0.631**

Expected Return $\left(\overline{R}_m\right)$ = $\frac{0.5978}{6}$ = 0.1

Calculation of Co-variance and Beta Coefficient of the Commercial Bank with Market

FY	$R_{BI}-\overline{R}_{BI}$	$R_m-\overline{R}_m$	$\langle R_{BI}-\overline{R}_{BI}\rangle\langle R_m-\overline{R}_m\rangle$
2057/58	-	-	-
2058/59	0.036	0.228	0.036X0.228=0.008
2059/60	0.720	0.563	0.720X0.563=0.405
2060/61	-0.123	-0.123	-0.123X-0.123=0.015
2061/62	-0.519	-0.454	-0.519X-0.454=0.236
2062/63	-0.181	-0.202	-0.181X-0.202=0.037
2063/64	0.079	-0.014	0.079X-0.014=0.001
Total			**0.7**

$$\left(Cov_{R_{BI}R_m}\right) = \frac{\sum\left(R_{BI}-\overline{R}_{BI}\right)\left(R_m-\overline{R}_m\right)}{n-1} = \frac{0.7}{6-1} = 0.014$$

$$\text{Beta } B_j = \frac{\left(Cov_{R_{BI}R_m}\right)}{\sigma^2} = \frac{0.014}{(0.355)^2} = 0.111$$