RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS OF NEPAL

(Special Reference to Nepal Investment Bank Ltd, Himalayan Bank Ltd and Standard Charted Bank Ltd)

A Dissertation Submitted to the Office of the Dean, Faculty of Management in Partial Fulfillment of the Requirement for the Master's of Business Studies (MBS)

By

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS OF NEPAL**. **(Special Reference to Nepal Investment Bank Ltd, Himalayan Bank Ltd and Standard Charted Bank Ltd)**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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RECOMMENDATION

This is to certify that the dissertation

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has been prepared as approved by this department in the prescribed format of the faculty of management. This dissertation is forwarded for examination.

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APPROVAL SHEET

We have examined the dissertation entitled presented by **RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS OF NEPAL. (Special Reference to Nepal Investment Bank Ltd, Himalayan Bank Ltd and Standard Charted Bank Ltd)**. for the degree of Master of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

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REPORT OF RESEARCH COMMITTEE

Ms.Sunita Neupane has defended research dissertation entitled **RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS OF NEPAL** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Rabindra Kumar Neupane and submit the thesis for evaluation and viva voce examination.

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Sunita Neupane

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

Table No: Table Title Page No

ABBREVIATIONS

AM	Arithmetic Mean
ATM	Automatic Teller Machine
CAPM	Capital Assets Pricing Model
CML	Capital Market Line
C.V	Coefficient of Variation
DPS	Dividend per Share
ERR	Expected Rate of return
FY	Fiscal Year
HBL	Himalayan bank limited
MBS	Master of Business Studies
MPS	Market Price of Stock
NEPSE	Nepal Stock Exchange
NI	Nepse Index
NIBL	Nepal Investment bank limited
NRB	Nepal Rastra Bank
ROA	Return on Assets
ROE	Return on Equity
RRR	Required Rate of return
SCB	Standard chartered bank limited
S.D	Standard Deviation
SEBON	Securities Board of Nepal
SML	Security Market Line

CHAPTER I
INTRODUCTION

1.1Background of Study

This conducted report will introduce the topic of investments and their association to risk and return. Additionally, it will illustrate the reasons behind investing in the first place and the types of investors as well as the different forms of existing investments in the business field. It will explain the value of the internet to the investors as a tool for remotely investing. Further, it will specifically dive deeply into the relationship between risk and return by explaining the concept behind it and what is its tradeoff that investors and portfolio managers face in daily investment decisions. Moreover, this report will briefly introduce the different measurements used in assessing the degree of risks and returns associated with an investment. Risk is defined in Webster's dictionary as a hazard a peril: exposure to loss or injury.

Therefore, risk refers to chance that some unfavorable event will occur. Most people view risk is the matter. Risk is the just described a chance of loss in reality, risk occurs when the something’s cannot be certain about the outcome of a particular activity or event (Merriam-Webster, 2018).

Systematic and unsystematic risk are the two main components of risk. Economic and political instability, economic recession, macro policy of the government etc. affects the price of all shares systematically. Thus, the variation of return of shares, which is caused by these factors, is called systematic risk. Unsystematic risk can be described as the uncertainty inherent in a company or industry investment. Types of unsystematic risk include a new competitor in the marketplace with the potential to take significant market share from the company invested in, a regulatory change. The return is the total gain or loss experienced on an investment over a given period of time. It is commonly measured as cash distributions during the period plus the change in value, expressed as a percentage of the beginning-of-period investment value(Gitman 2003).

Commercial bank is the most important saving, mobilization and financial resource allocation institutions. Consequently, these roles make them an important phenomenon in economic growth and development. In performing this role, it must be realized that bank have potential, scope and prospects for mobilizing financial

resources and allocating them to productive investments. Therefore, no matter the sources of the generation of income or the economic policies of the country, commercial bank would be interested in giving out of loans and advances to their numerous.

The concept of banking existed even in the ancient history when the ancient goldsmiths kept people's gold and variables in their custody. Under such arrangements, the depositors would leave their gold for safekeeping and were given receipts by the goldsmith. Whenever the receipt was presented, the depositors would get back their gold and valuables after paying a small amount as free for safe keeping and serving.

In context of Nepal, the development of financial system is relatively recent. Nepal Rastra Bank was established as the nation's central Bank under the NRB Act 1955 A.D. with the major objectives of supervising, promoting and directing the functions of commercial bank activities. Bank is the essential part of the business activity which is established to safeguard people's money and thereby using the money in making loans and investments. There are several commercial banks operating inside and outside the valley. Every bank invests its money in some profitable business in the long run. An investment is the commitment of money of money that is expected to generate additional money. Human nature doesn't satisfy for whatever he/she has at present, tends to sacrifice the current resources. Whenever we talk about the return risk too much not is avoided, because in every type of return, risk is involved. Every investment entails some degree of risk, it requires at present certain sacrifice for a future uncertain benefit. The growth of an individual's or firm's resources is not possible until and unless it in some profitable sector.

Banking sector plays a vital role for the economic development of the countries, Banks provides opportunities to people for participation in the development process of the country via issuing shares which will be owned by them, accepting deposits from them and mobilizing and investing such accumulated resources in the field of agriculture, trade, commerce, industry, tourism, hydroelectricity projects etc. Which helps to build industrial environment and creates employment and investment opportunities for the people? In this way nation's economy will secure a proper means to sustainable growth. It is clear that good banking system is essential for industrial and economic development of the country.

It is also understood as expected positive cash flow generated from an investment. Investors are concerned primarily with growth. They would seek project that offer the promise of long term, higher than average growth of sales, earnings and capital appreciation. Return is also defined as the difference between outflow and inflow of funds. As an investor, it is important to understand the concept of risk versus return. With a clear understanding of risk and reward, investors can select the investments for the portfolio that provide them with a comfortable level of risk and return. Understanding risk and return will allow an investor to create a portfolio that is diversified. Diversification of a portfolio is a strategic way of investing which allows the spread risk of investment amongst many stocks or bonds. Before investing in stocks and bonds, investors must understand what exactly they are investing into and know their tolerance level for risk. Some investors are in the market for a fast, high-risk return while others are more comfortable with a long-term steady investment approach. The only wrong investment option is the one that makes the investor feel outside their comfort zone. Risk analysis and risk management has got much importance in the Nepalese economy during this liberalization period. The foremost among the challenges faced by the banking sector today is the challenge of understanding and managing the risk. The very nature of the banking business is having the threat of risk imbibed in it. Banks' main role is intermediation between those having resources and those requiring resources. For management of risk at corporate level, various risks like credit risk, market risk or operational risk have to be converted into one composite measure. Therefore, it is necessary that measurement of operational risk should be in done with other measurements of credit and market risk so that the requisite composite estimate can be worked out. The importance of analysis of risk and return for bank is easy financial lending and to find out the possible areas of investment in the financial market.

Risk and return as an approximation to a derived utility function this view is useful in exploring practical questions such as choice among alternate measures of risk in the risk- return analysis, and the relationship between the single period analysis and the many period investment problem (Markowitz & Dijk 2006).

Risk management is one of the core banking activities in all kinds of financial institution which involves basically two types of risk existing in the market, the systematic risk and unsystematic risk. Systematic risk refers to the risk that is positive

correlated with market and the can be minimized by using different risk management practice. On the other hand, the unsystematic risk is associated with the value of the asset. Unsystematic risk cannot explain by general market moments and can be avoidable through diversification(Khan and Islam 2018).

Till date banking sectors have been working in regulated environment and were not much exposed to the risks but due to the increase of severe competition banks have been exposed to various types of risks such as financial risks and non-financial risks. Risk is a natural element of business and community life. Risk is a condition that raises the chance of losses/gains and the uncertain potential events which could manipulate the success of financial institutions. A well establish risk management practices can assist banks to reduce their exposure to risks(Khalid and Amjad 2012).

1.2 Profile of the Selected Bank

1.2.1 Nepal Investment Bank Limited

Nepal Investment Bank Ltd. previously Nepal Indosuez Bank ltd. was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding percent of the capital of NIBL) was credit Agricole Indosuez, a subsidiary of one of the largest banking groups in the world.

Later, in 2002 a group of Nepalese companies comparing of bankers, professionals, industrialists and businessmen acquired the 50 percent shareholding of credit Agricole Indosuez in Nepal Indosuez Bank Ltd. and accordingly the name of the Bank also changed to Nepal Investment Bank Ltd.

The bank has adopted good corporate governance practices prescribed by the Nepal Rastra Bank as well as other relevant statues such as companies Act 2006 and Bank and Financial Institution Act 2006.

1.2.2 Standard Chartered Bank Nepal Limited

Standard Chartered Bank Nepal Limited is one of the most recognized banks in Nepal established as a JVB. Earlier it was known as ‘‘Nepal Grind Lays Bank’’. SCBNL has been in operation in Nepal since 1987 A.D. when it was initially registered as a joint venture operation. Today the bank is an integral part of Standard Chartered Group having an ownership of 75 percent in the company with 25 percent shares owned by

the Nepalese public. The bank enjoys the status of 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 market with an extensive global network of over 1700 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 America. As one of the world's most international banks, Standard Chartered employs almost 87,000 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.

It is the first Bank in Nepal that has implemented the Anti-money laundering policy and applied the 'know Your Customer' procedure on all the customer accounts. With 19 points of representation, 26 ATMs across the country and with more than 550 local staff, SCBNL is in a position to serve its clients and 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.

1.2.3 Himalayan Bank Ltd.

Himalayan Bank was established in 1993 in joint venture with Habib Bank Limited of Pakistan. Despite the tough competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities- loans and Deposits. Products such as Premium savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele- banking were first introduced by HBL. HBL introduced several new products and services. Millionaire Deposit Scheme, small and Medium Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS etc. fee payment facility is some of the products and services.

HBL also has a dedicated off site 'Disaster Recovery Management system' looking at the number of Nepalese workers abroad and their need for formal money transfer channel; HBL has developed exclusive and proprietary online money transfer

software- Himal Remit TM. By deputing our own staff with technical tie- ups with local exchange house and banks, in the Middle East and Gulf region, HBL is the biggest inward remittance handling Bank in Nepal. All this only reflects that HBL has an outside- in rather than inside- out approach where Customer's needs and wants stand first.

1.3 Problem Statement

Commercial banks in Nepal have been facing various challenges and problems. The main problems are that the public companies cannot perfectly analyze the risk and return of market situation. Investor does not have any idea of risk and return. In our country the commercial bank is playing vital role in the in the capital market. Risk and return and other different kinds of areas. Some of them arising due to high competition in the market, commercial banks are providing more loan and advances against their client's insufficient deposit. Unsecured loan and investment may cause the liquidation of the commercial banks. If the collected funds are wrongly invested without thinking any financial risk, business risk and other risks, the bank cannot make profits and may even lost its existence. Many investors do not know how to make investment and how to calculate risk and return on their investment. In this background the risk and return situation of commercial bank has been analyzed. The analysis of systematic and unsystematic risk position also helped to make investment decision to minimize the risk. The financial investment is significant particularly in agriculture, industrial and other productive sectors which is quite unsatisfactory to meet the economic growth of the present period. They hesitate to invest in the long-term projects and intend to adopt conservative loan policy. Investors couldn't get enough informational related to risk return and as well as portfolio analysis of investing sectors. This trend makes the market imbalance and unfair. If any banks will issue shares there is become huge demand rather than supply but if any manufacturing and processing companies will issue shares very little investors make investment. On the basis statement the study is to seek the following questions:

i. What is the risk and return of common stock investment of commercial banks?
ii. What is risk and return of common stock investment of commercial banks?
iii. What is the optimal portfolio risk and return of commercial bank?

1.4 Objectives of the Study

The basis objective of the study is to highlight the analysis of the risk and return of listed commercial banks in Nepal. The specific objectives of study are as follows: -

i. To analyze the risk and return of common stock investment of commercial banks.
ii. To examine the securities risk and return of commercial banks.
iii. To assess the optimal profitable portfolio risk and return of commercial bank.

1.5 Rational of Study

The investors seek to get good return in future but they don't have knowledge to analyze the risk and return in order to make investment. Mainly, the study is important for commercial banks, researchers, scholars, investors, government and many other parties. The risk may be lower for the conservative financial manager and it is higher for an aggressive financial manager. Risk needs to be measured is an objective way in order to known whether it justifies a specific rate of return. Investors required a higher return from a risky project in order to compensate of the risk. The main aim is to maximize the returns with given level of risk or to minimize the risk with a given level of return. Therefore, for this purpose that returns and risks need to be measured. This study is also focus on the analysis of risk and return how an investor should take investment decision in share of commercial banks in Nepal. Due to the instability in political condition of Nepal. Investors are afraid to make investment, which increase the huge amount of unutilized saving fund with general public. How much risk is involved in their investment? What is the real financial condition of the banks that they think to invest money? The investors must have the knowledge of risk and return analysis while making right investment decision. The business of banking is to measure, manage and accept risk. The study is beneficial to the researchers, professors, graduates, Undergraduates and existing as well potential investors.

1.6 Limitation of the Study

The research study has some limitations. So, this study is not an exceptional case, the major limitation of the study are: -

i. In this study, only simple financial and statistical tools as well as techniques are used for risk analysis.
ii. Only secondary data has been used and the whole study is limited to the past five years from 2016/17 to 2020/2021.
iii. This study mainly focuses on risk and return of Investment bank ltd, Himalayan bank ltd, standard charted bank ltd.

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

It contains the introduction part of the study. This chapter describes the general background of the study, statement of the problem, Objective of the study, Significance of the study, limitation of the study and organization of the study.

Chapter II: Review of Literature

This chapter deals with review of literature. It includes a discussion on the conceptual framework and review of the major studies. Therefore, it includes conceptual framework along with the review of major books, journal, research works and thesis etc.

Chapter III: Research Methodology

This chapter indicates research design population and sample procedure and source of data and analysis of data. This deals with the nature and sources of data, list of the selected companies, and model of analysis meaning and definition of statistical tools, data analysis tools and limitation of the methodology.

Chapter IV: Results and Discussions

The main part of research is data presentation and analysis. This chapter deals with analysis and interpretation of the both primary and secondary data by using financial and statistical tools described in chapter three. This chapter also includes the major findings of the study.

Chapter V: Summary and conclusion

This chapter deals with summary of the study held, the conclusion made, major finding of the study and the possible suggestions. Thereafter bibliography, annexes are incorporated at the end of the study.

CHAPTER-II

LITERATURE REVIEW

2.1 Introduction

The main focus of the study is to analyze risk and return of the commercial banks of Nepal. This chapter shows the background of the work and review of recent literature. In this regard, basic academic course books specially related to topic, some of the major research works, reports, news statement, major articles published in journals and the related thesis are reviewed. Some philosophers, writers or researchers have given the contribution for preparing it. This section of the chapter reviews the meaning and definitions of different concepts and terms used in this study.

This chapter presents the conceptual review of risk including different types of risk that exist in banking business. This chapter deals with literatures relevant to this study. It is divided into following categories:

i. Conceptual framework which consists concepts of banking history, commercial banks, investment, risk, return etc.
ii. Review of books, journals an article related to commercial banks.
iii. Review of previous thesis.

2.1.1 Investment

Investment, risk and return are the financial terms, which are heavily associated with each other. Investment simply means sacrificing current rupees considering future cash inflows. Future cash inflows are the returns. Present Investment is certain, fixed and now. But future returns are uncertain and there is no fixed time bound. However, investment is utilization of saving for something that is expected to produce profit or benefits. Investment is employment of funds to achieve added income or growth in value. It involves commitment of resources put off from current consumption with hope of capitalizing some benefits in future. It includes both real asset and financial asset. An investment on real asset is known as real investment and on financial assets is known as financial investment. Real asset investment denotes the tangible assets like building, land, machinery, factory and the like. On the other hand, financial assetinvestment indicates paper representing an indirect claim to real asset held by someone else like shares, debentures, warrants, convertibles etc.

Investment may be defined on the purchase by an individual or institutional investor of financial or real assets that produces a return proportional to the risk assumed over some future investment period. It is a commitment of funds made in the expectation of some rate of return. If the investment is properly undertaken the return will be commensurate with the risk the investor assumes Copeland and Weston (1988).

Investment is the current commitment of funds for a period of time to derive a future flow of funds that will compensate the investing unit for the time funds are committed, for the expected rate of inflation and also for uncertainty involved in the future flow of the funds (Reilly and Brown 2004)

2.1.2Investment Portfolio

A portfolio is simply defined as the combination of investments in various securities. Portfolio theory deals with the selection of efficient portfolio, which maximizes return for a given level of risk, or minimizes risk for a given level of return. Risk return analysis of portfolios of two risky assets is relatively a sample way to illustrate the principles and considerations associated with portfolio.

A portfolio is usually defined as a combination of assets. It is the collection of securities. Portfolio means the list of holding in securities owned by an investor or institution. A portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment assets is called a portfolio Weston and Brigham (2014).

2.1.3 Common Stock

The study is focused on the common stock investment that's why it is necessary to throw light on it. It is sources of long-term financing and an ownership security. Common stock certificates are legal documents that evidence ownership or equality in a company that is organized as a corporation, and they are also marketable financial instruments. Common stock is the recipient of the residual income of the corporation. An element of high risk is involved with common stock investment due to its low priority of claims at liquidation. When investors buy common stock, they receive certificate of ownership as a proof to their being part of the company. The certificate states the number of shares purchased and their value per shares.

Common stock seems to the capture their interest the most. The potential reward and penalties associated with common stock make them on interesting even exciting proposition, no wonder, and common stock investment is a favorite's topic for conversation in parties and gets together (Fisher and Jordan 2000).

Common stockholders of a corporation are its residual owners, their claim to income and assets comes after creditors and preferred stock holders have been paid in full. As a result, stockholders return on investment is less certain than the return to lender or to a preferred stockholder. On the other hand, the shares of a common stock can be authorized either with or without par value. The par value of a stock is merely a stated figure in the corporate charter and is of little economic significance (Horne 2002).

A company should not issue stock at a price less than par value because stockholders who bought stock for less than par value would be liable to creditors for the difference between the below par price they paid and the par value. Common stock holders are entitled certain right, which are as follows Horne (2002).

i. Control through voting right
ii. Preemptive right
iii. Limited liability
iv. Right to income and distribution of additional shares
v. Residual right

Common Stock Values

Common stock values are either denoted by par value, book value or market value. These three terms are different and their rupee amount differs.

a. Par Value

The face value of one stock established at the time the stock is initially issued is known as par value. It is generally Rs.10 or Rs.100 or other value. In Nepal, Security Board of Nepal (SEBON) 2063 has specified that par value of a share must be set at Rs.100. A company should not issue common stock at a price less than the par value, because any discount from the par value is considered to be a contingent liability of the owner to the creditors of the company. In the event of liquidation, the shareholders would be legally liable to the creditors for any discount from the par value. But in Nepal, a company cannot issue shares at a discount.

b. Book Value

Corporations must pay interest to the creditors and dividends to the stockholders. After distributing the interest and dividend, any remainder is added to the amount shown as cumulative retained earnings on the corporation's books. The sum of the cumulative retained earnings, common stock par value and capital contribution in excess of par value under stock holders' equity is the book value of the equity.

c. Market Value

The value of share in secondary market traded between investors and traders is the market value. Market value is the consequence of demand and supply.

2.1.4 Risk on Common Stock

Risk can be defined as the chances of loss. Assets having greater chances of loss are viewed as riskier than those with lesser chances of loss. More formally, the term is used interchangeably with uncertainty to refer to the variability of expected returns associated with a given asset. For example, a government bond that guarantees its holder RS 100 interest after 30 days has no risk, since there is no variability associated with return. In equivalent investment in a firm's common stock that may earn over the same period anywhere from RS 0 to RS 100 is very risky due to high variability of return. The more certain returns from an asset, the less variability and therefore the less risk. Thus, Risk is the variability of possible returns around the expected returns of an investment. Each investor has his/her own attitudes towards risks and how much he/she can tolerate. Since, investment have risks associated with them, the investors must determine combination of alternatives matches that tradeoff the risk and compensation for percent risk. Risk is defined in Webster's dictionary as a hazard a peril, exposure to loss or injury. Thus, risk refers to the chance that some unfavorable event will occur. For an investment in financial assets or in new projects, the unfavorable event is ending up with lower return than you expected Ehrhardt and Brigham (2011).

Risk defined most generally, is the probability of the occurrence of unfavorable outcomes. But risk has different meanings in different context. In our context two measures developed from the probability distribution have been used an initial measure of return and risk. There are the mean and the standard deviation of the probability distribution (Ehrhardt and Brigham 2011).

The risk is highest with common stock investment. Common stock holders usually have voting rights in the management of the corporation. In case of bankruptcy, common stock holders are in the principal permitted only to assets remaining after all period claimants have been satisfied (Bhalla 2002).

2.1.5 Sources of Investment Risk

Every investment involves uncertainties that make future investment return risky. The risk associated with investment alternative may result from a combination of a variety of possible sources. A prudent investor considers following major sources of risk that contribute to investment risk.

a. Interest Rate Risk

Interest rate risk is potential variability of return caused by changed in the market interest rate. If market interest rates rise, then investment's values and market price will fall and vice versa. The variability of return that results is interest rate risk. This interest rate risk affects the price of bond and stock etc.

b. Purchasing Power Risk

Purchasing power risk indicates the variability of return, an investor suffers because of inflation. When inflation takes place, financial assets (such as cash, stocks, andbonds) may lose their ability to command the same amount of real goods and services they did in the past. To put another way, the real rate of return on financial assets may not adequately compensate the holder of financial assets for inflation.

c. Bull- Bear Risk

Bull bear risk arise from the variability in market return resulting from alternating bull and bear market forces. When a security index arises fairly consistently from a low point, called a though, for a period of time, this upward trend is called a bull market. The bull market ends when the market Index reached a peak and starts a downward trend. The period during which the market declines to the next trough is called a bear market.

d. Default Risk

It is the portion of total investment that results from changes in the financial integrity of the investment. The variability if return that investors experience as a result of

changes in the credit worthiness of a firm in which they invested is their default risk. Investor's losses from default as the financial integrity of a firm weakens the losses are anticipatory losses.

e. Liquidity Risk

Liquidity risk is that portion of an assets' total variability of return which results from price discounts given or sales commission paid in order to sell the assets without delay. Perfectly liquidity assets are highly marketable and suffer no liquidation costs. Liquid assets are not readily marketable either price discounts must be given or sales commissions must be paid, or both of these costs must be incurred by the seller.

f. Callable Risk

Some bonds and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. The portion of a security's total variability of return that derives from the possibility that the issue may be called callable risk.

g. Convertibility Risk

Convertibility risk is that portion of the total variability of return from a convertible bond or a convertible preferred stock that reflects the possibility that the investment may be converted into the issuer's common stock at a time harmful to the investor's best interests.

h. Political Risk

Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the efforts of various group to improve their relative positions increasing the variability of return from the affected assets.

i. Industry Risk

An industry is a group of companies that complete with each other to market a homogeneous product. Industry risk is that portion of an investment's total variability of return caused by events that affect the products and firms that make up an industry.

2.1.6Investment process

The investment process describes how an investor makes decision to invest, so that it minimizes the risk by making a portfolio which raises the value of investment. The investment process is as follows:

I. Set Investment Policy

It is rightly said that genuine idea can make a great difference, so implies to policy. Policy is the only thing that differs from one institution to another. A bad or incorrect policy may lead to collapse of institution and a good policy to boom thus well identified and judged policy is the foremost prerequisite for any investor on an institution. Thus, to set investment policy is essential. This step deal while making investment, investor must identify the securities which have low risk and higher return.

II. Perform Security Analysis

Security analysis involves examining a number of individual securities with in the broad categories of financial assets. The purpose of such examinations is to identify the price of securities whether they are underpriced or overpriced, their expected return and risk and so on.

III. Construct a Portfolio

Construction of portfolio involves identification of specific securities in which to invest, along with the proportion of investable wealth to be put into each security. The purpose of constructing portfolio by investor is to maximize return at whatever level of risk.

IV. Revise the Portfolio

Portfolio revision involves both realizing that the currently held portfolio is not optimal and specifying another portfolio to hold with superior risk return characteristics. The investor must balance the cost of moving to the new portfolio against the benefits of the revision.

V. Evaluate Portfolio Performance

Evaluate the portfolio performance involves determination of the actual performance of a portfolio in terms of risk and return and compares the performance with that of an appropriate benchmark portfolio.

2.1.6Concept of Risk

Different people interpret uncertainty and risk in different ways. To some uncertainty is simply lack of definite outcome, it is anything that could happen any unknown event which may be favorable or unfavorable. Risk is a chance of happening some unfavorable event or chance of losing some material value. The trouble arises from the fact that despite different interpretations of uncertainty and risk, they are often used interchangeably.

Risk is defined in Webster's dictionary "as a hazard a peril: exposure to loss or injury" thus for most, risk refers to chance that some unfavorable event will occur. If we engage in the skydiving, we are taking a chance with our life skydiving risky. If we bet the horses, we are risking our money. If we invest in speculative stocks (or really any stock), we are taking a risk in the hope of making an appreciable return (Ehrhardt and Brigham 2011).

Most people view risk is the manner. It can be described a chance of loss. In reality, risk occurs when we cannot be certain about the outcome of a particular activity or event. So, we are not such that will occur in the future consequently, risk result from the fact that on action scan as investing can produce, more than one outcome in future Weston and Brigham (1996).

In the basic sense, risk is the chance of financial loss. Having greater chance of loss is viewed as riskier than those with lesser chance of loss. More formally, the term risk is used interchangeably with uncertainty to refer to the variability of returns associated with a given asset Gitman (2012).

2.1.7 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.

a. Systematic Risk

b. Unsystematic Risk

Hence,

Total Risk = Systematic Risk + Unsystematic Risk

a. 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 change in the economy and market condition... 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. Some of the sources of systematic risk include.

- Interest rate changes.
- Changes in purchasing power.
- 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 & Copland, 2014).

Systematic risk proportion $\rho^2 \text{j} = \frac{\beta^2 j \sigma^2 j}{\sigma^2 j}$

Where,

$\sigma 2j$= Variance of stock j.

$\beta 2j$ = Square beta of stock j.

$\sigma^2 j$ = variance of market return.

b. 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.

- Management capability and decisions.
- The availability of the raw materials.
- Strikes.
- The unique effects of government regulations such as pollution control.
- The effect of foreign competition.
- The particular levels of financial and operating leverage of the firm's employees.

Unsystematic risk proportion = Total variance – Systematic risk

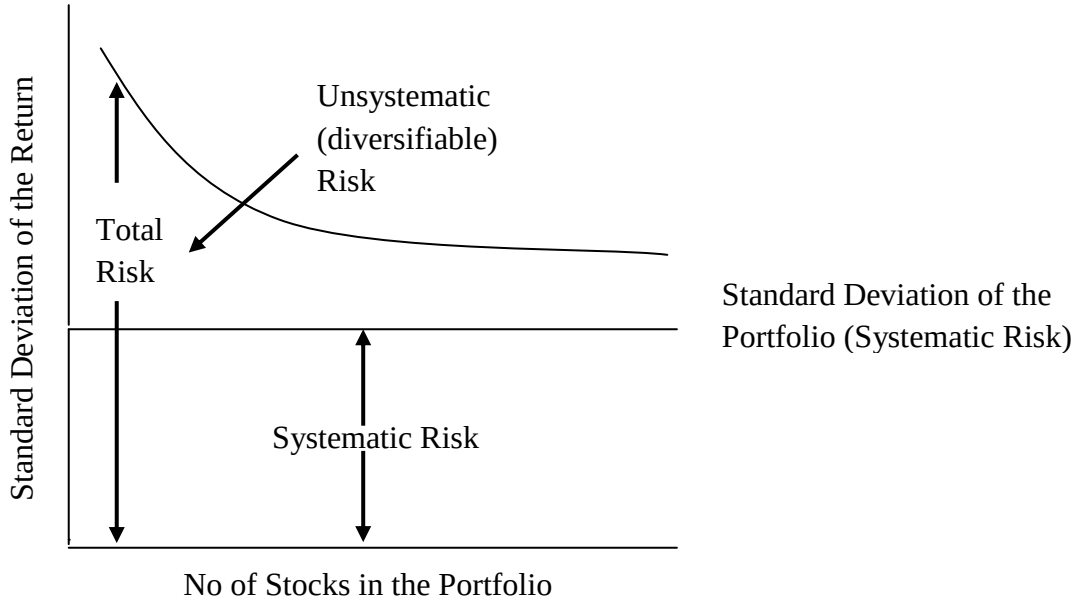

Figure 2. 1: Total Risk, Systematic Risk and Unsystematic Risk

Source: (Gautam ,2002)

Measure of Risk

Risk is the variability of the expected return. If there is more variation in the expected return, there will be more variation means more risk. If the variation is less, there will be less risk. Risk of the particular asset is measured to make investment decision. Risk can be measured by using statistical methods: standard deviation, coefficient of variation and Beta coefficient.

Standard Deviation (SD)

Standard deviation measures the risk as variability of return. Standard deviation is a statistical measure of the variability of a set of observations. It is the measure of total risk. Smaller the variance, lower the risk of the stock and vice- versa. The risk or standard deviation is denoted by the symbol sigma (σ). The square root of the variance of the rate of return is called the standard deviation (σ) of the rate of return.

$$\sigma_{j=}\sqrt{\frac{\sum[R_j - E(R_{J\,})]^2}{n-1}}$$

Where,

σj = Standard Deviation on of return sock j during the time period n.

R_j= Single period rate of return on stock j.

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

n = Number of years that the returns are taken.

Coefficient of Variation (CV)

Standard deviation is obsolete measure of risk whereas coefficient of variation is relative measure of return. Risk is measured by standard deviation. And risk per unit of expected return is measured by coefficient of variation is denoted by CV. Greater the CV the greater relative risk of the investment. Coefficient of variation is calculated to compare the variability in returns of two alternative investments. Hence, it is useful to compare the investments having different expected return and different level of risk.

$C.V=\frac{\sigma j}{E(Rj)}$

Where,

$C.V.$ = Coefficient of variation of stock j.

σj = Standard deviation of return on stock j.

(Rj)= Expected rate of return on stock j.

Beta coefficient

This is a mathematical value that measures the systematic and unsystematic risk of one asset in term of its effect on the risk of group of assets called portfolio. It is concerned solely with market related risk as would be the concern for the investor

holding stocks and bonds. It is derived mathematically so that a high beta indicates a high level of risk and low beta represents a low level of risk.

$$\beta_j = \frac{\text{Cov (Rj, Rm}}{\sigma^2\text{m}}$$

Where,

βj = Beta coefficient of stock j.

$Cov\ (Rj, Rm)$ = Covariance between return on stock j and return on market.

σ^2m= Variance of market return

2.1.7 Return on Common Stock

Return is reward to the investors for bearing certain risk. It is the main target of investment. It can be defined as the after-tax increase in the value of the investment. The rate of return from capital investment is a concept that has different meaning to different investors. Some competitive seek near term cash inflow and give less value to more distant returns. Return can be expressed by cash dividend or capital gain or loss. Some investors measure return using financial ratios. Single holding period return may be defined as all possible future cash flows that can be earned holding securities up to holding period. It can be also defined as the changes in the value plus any cash distribution expressed as a percentage of the beginning of the period of investment value. An investor can obtain two kinds of income from the investment is a share or bonds. They are as follows;

i. Income from price appreciation or losses from price depreciation. It is called capital losses and gain.

ii. Cash flows income from cash dividend or coupon interest payment.

Return shows financial position of any organization. The company position of any organization may be better if it has higher return. Return is rewards for an investor from his or her organization. Investors always want to maximize expected return subject to their tolerance for risk. Return is motivating forces and it is the key method available to investors in capering investment alternatives. Realized rate of return and expected rate of return which are often used in language of investment. Realized rate of return is after the fact return that was earned or it is the historical return.

The return on investment can be measured as the total gain and losses expressed on the behalf of owner over the given period of time. It is commonly stated as the change in value plus any cash distribution expressed as percentage of the beginning period investment value. The expression for calculating the rate of return (Ks) earned any assets over the period (t) is commonly defined as.

Total Return = Capital Gain + Regular Gain (Ordinary Gain)
Capital Gain = Ending Price – Beginning Price
Regular Gain = Dividend or Income

a) Holding Period Return

If an investor purchases a stock of any companies and holds it for certain period, the return will be received on two ways, one is increase in the value of that stock as compared to initial one. Another is direct cash payment. The increase in the value is called capital gain and direct cash payment is called dividend gain.
The return from holding an investment over some period is simply a cash payment received due to ownership, plus the change in market price, derived by the beginning price. For common stock we can define one period return as;

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

Where R is the actual return when it refers to a particular times period in the past (future). Dt is the cash dividend at the end of time period t. $Pt$is the stock price at the time period t and $Pt-1$is the stock price at the time period of $t-1$. Notice that this formula can be used to determine both actual one period returns when based on expected dividend and prices.
The relationship between the expected future state of the economy and the performance of individual firms enables a relationship to be set forth between the state of the economy and the returns from investments in firms. The relationship between different levels of returns and their relative frequency is called probability distribution.

b) Required Rate of Return

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

loss. While suffering from loss of return an investor must consider the real rate of return, expected inflation and risk because consumption is forgone today. The investor is entitled to a rate of return that compensates for this deferred consumption.

Since the investor expects to receive an increase in that real goods purchased later and assuming for the moment zero expected inflation and risk, the required rate could equal to the real rate of return, in which case it would present the pure time value of money. The real return paid to compensate the investors deferred consumption.

The required rate of return is the function of real rate of return and risk. It is the minimum rate of return an investor will accept. The required rate of return for an assets or portfolio of assets can be estimated using the equation for the Security market line (SML) suggested by the Capital assets price model (CAPM) model.

c) Expected Rate of Return

The return that an investor expects from his investment in the fourth-coming future is called expected rate of return. An investor normally estimates his expected rate of return by analysis the trend of return of previous period (years).

If an investment is to be made, the expected rate of return or the expected holding period return should be equal or greater than the required rate of return for that investment. The expected rate of return is based upon the expected cash receipts (e.g., Dividend or interest over the holding period and the expected ending or selling price. The expected rate of return is an ex-ante or unknown future returns. Unless the real rate of return is guaranteed, most investor recognizes this possible rate of return into a single number called the expected rate of return.

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

2.1.8Security Analysis

Security analysis is closely linked with portfolio management. The main objective of Security analysis is to appraise the intrinsic value of security. There are two basics Approaches to security analysis as follows.

i. Fundamental Approach, and
ii. Technical Approach

a) Fundamental Approach

The fundamental approach suggests that every stock has an intrinsic value, which should be equal to the present value of the future stream of income from that stock discounted at an appropriate risk related rate of interest. Estimate of real worth of a stock is made by considering the earnings potential of firm, which depends upon investment environment and factors relating to specific industry, competitiveness, quality of management. Operational efficiency, profitability, capital structure and dividend policy. Thus, security analysis is done to evaluate the current market value of particular security with the intrinsic or theoretical value. Decisions about buying and selling an individual security depend upon the conferred relative value. Since this approach is based on relevant facts, it gives true estimate of the value of a security and it is widely use in estimation of security prices.

b) Technical Approach

The other technique of security analysis is known as technical approach. The basic Assumption of this approach is that the price of a stock depends on supply and demand in the market place and has little relationship with its intrinsic value. All financial date and market information of a given security is reflected in the market price of a security. Therefore, an attempt is made through charts to identify price movement patterns, which predict future movement of the security.

2.1.9The Role of NEPSE Index in Making Investment Decision

Role of NEPSE is varied and highly important in the development of economy of a Country. They measure and control the growth of a country. Stock markets are the places, where exactly investors do their business. The stock trading transactions are executed at the stock exchanges through broker, unless a membership with that exchange, which enable to trade directly. NEPSE apart from being hub of primary and

secondary market. NEPSE affect investment decision and price determination in the following ways:

Raising Capital for Businesses

Exchanges help companies to capitalize by selling shares to the investing public.

Mobilizing Savings for Investment

They help public to mobilize their savings to invest in high yielding economic sectors, which results in higher yield, both to the individual and to the national economy.

Facilitating Company Growth

They help companies to expand and grow by acquisition or fusion.

Profit Sharing

They help both casual and professional stock investors, to get their share in the wealth of profitable businesses.

Corporate Governance

Stock exchanges impose stringent rules to get listed in them. So listed public companies have better management records than privately held companies.

Creating Investment Opportunities for Small Investors

Small investors can also participate in the growth of large companies, by buying a small number of shares.

Government Capital Raising for Development Projects

They help government to rise fund for developmental activities through the issue of bonds. An investor who buys them will be lending money to the government, which is more secure, and sometimes enjoys tax benefits.

2.1.10Meaning of Return

Return is the total gain or loss experienced on investment at a given period of time. The concept of return has different meaning to different investors. Some investors seek hear term cash inflows and give loss value of more distant return such as investors might purchase the other firm that pays large cash dividends. Other investors are concerned primarily with growth. They would seek project that offer the promise of long term, higher than average growth of sales, earnings and capital and appreciation (Quizlet 2018).

The total gain or loss experienced on an investment over a given period of time; calculate by dividing the asset's cash distributions during the period, plus change in value, by its beginning of period investment value Gitman (2009).

With most investments, an individual or business spends money today with the expectation of earning even more money in the future. The concept of return provides investors with a convenient way to express the financial performance of an investment Ehrhardt and Brigham (2011).

a) Multi Period Return and Annualized Return

A multi period return is the return earned during the multiple periods of holding the securities. To express the multiple periods returns as annuals return, the returns are converted in an annual basis. Such as annualized return is the mean return and are two types of mean return.

b) Arithmetic Mean

This mean is the most familiar statistical measure to any investor or individual. It is a more applicable measure of average performance over the period, when variability of return is less. It is calculated by dividing the total return of multiple periods by the number of observations or returns.

c) Geometric Mean

It is another method of calculating annualized. It is better measures of growth of wealth overtime that would give the same cumulative performance as the sequence of actual returns. It measures more accurately the authentic average return. It is calculated by taking the n_{th} root of the product of one plus individual rate of returns minus one.

d) Annual Rate of Return

Annual return is the return an investment provides over a period of time, expressed as a time-weighted annual percentage. Sources of returns can include dividends, returns of capital and capital appreciation.

2.1.11 Relationship between Risk and Return

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

risk proposal must offer a higher forecast return than lower risk proposal (Hampton 1996).‘‘The observe difference in both the levels and variability of the rate of return across securities are indicative of the underlying risk and relation in the market’’ (Loric Dodd and Kempton, 1985). An element of high risk is involved in 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 being a part of the company. The certificate states the numbers of shares purchased and their value per share Bhalla,(1997). Elton (1999) conducted article entitled ‘‘Expected Return, Realized Returns and Assets Pricing Tests’’. In this paper he points out the fundamental issues in finance like that what the factors are that affect expected return on assets, the sensitivity of expected return to those factors and reward for bearing this sensitivity. There is a long 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 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 there is ample evidence that this belief is misplaced. There are period’s longer than 10 years during which stock market realized returns are one average less than 10 years during which market realized returns are one average less than the risk-free rate (1973 to 1984). There are periods longer than 50 years in which risk long term bonds on average underperform the risk-free rate (1927 to 1981). Having a risky asset with expected return above the risk less rate is an extremely weak condition for realized returns to be an appropriate process for expected return, and 11 to 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 percent per year while Asian Markets have had negative returns Elton (1999)

(Hasan 2012)conducted a study on ‘‘Relationship between Risk and Expected Returns: Evidence from the Dhaka Stock Exchange’’. They presented the evidence that from the CAPM empirical analysis for the individual stock, it is observed that intercept term is significantly different from zero and slope is not equal to the excess return on the market portfolio but the CAMP’s prediction for the intercept is that it should equal zero and the slop should equal the excess return on the market portfolio.

So, the results of the study refute the above hypothesis and offer evidence against the CAPM is not a suitable indicator of asset prices in Bangladesh over the chosen sample period.

Pamane and Vikpossi (2014)conducted the journal entitled ‘‘An Analysis of the Relationship between Risk and Expected Return in the BRVM Stock Exchange’’ is taken into the account. Very few independent studies can be found in the topic of finance. However, the available independent studies which are related to the Nepalese stock market and about shareholders democracy, views expressed by different person in their articles regarding risk and return of common stock of commercial banks are presented of reviewed here in the topic.

Pradhan (1993)carried out a study on ‘‘Stock market behavior on small capital market a case study in Nepal this study was based on the data collected for seventeen enterprises from 1986 to 1990. One of the major objectives, which are related to this study, was to assess the stock market behavior in Nepal. Similarly, another study was carried out by Narayan Prasad Poudel (2003) in the topic of ‘‘Investing in shares in commercial Banks in Nepal. The study by (Timilsina 2001)on ‘‘Capital Market Development and stock price behavior in Nepal’’ has come with the conclusion that the market price of share depends on EPS as well as on DPS, but DPS is more price sensitive and it will have direct and immediate response in the market. However, market values of share computed on basis of EPS are near to the observed values. Therefore, the observed market prices of equity shares reveal that the stock market is not inconsistent. A study conducted by Prof. Dr. Radhe Shyam Pradhan and Mr. Surya B. Blampaki (2004) in the topic of ‘‘Fundamental of stock returns in Nepal’’ is taken into consideration. This study is helpful to analyze the stock’s return from different aspects.

Rouwenhorst (1999)examined the sources of return variation in emerging stock markets. Compared to the developed markets the correlation between most emerging market and stock market has been historically low and until recently many emerging countries restricted investment by foreign investor. (Mishra 2002)noticed that there is a positive correlation between risk and return character of the company. Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing.

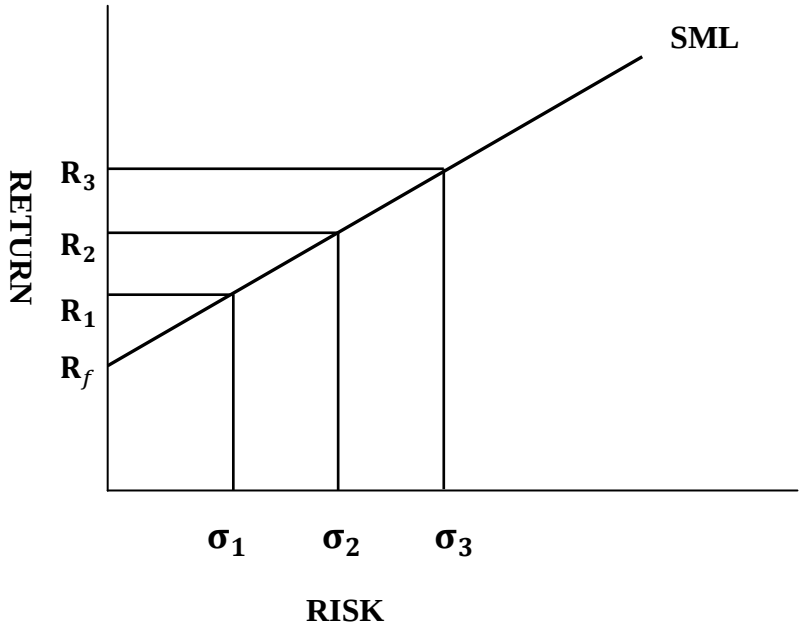

Figure 2. 2Relation Between Risk and Return

Source: (Gautam ,2002)

2.1.12Capital Assets Pricing Model (CAPM)

Capital assets are the long term financial as well as real assets and CAPM is bases on the pricing of these assets. Modern portfolio theory of Markowitz suggests that the investment decision should be based on the total risk and the price of assets should be based on the total risk and the price of assets should also be determined on the basis of the total risk. But the CAPM, which was developed by William F-Sharpe, John Linther and Treynor suggests that, any investor can create a portfolio of assets that will eliminate virtually all diversifiable risk, the only relevant risk is non-diversifiable risk and therefore the investment decision and the pricing of capital assets should be based on the undiversifiable risk. This is the primary importance of selecting that the price of capital assets should be determined in a way that compensates the systematic risk (Bhattarai 2004).Assumptions of CAPM are as follows:

i. All investors have same one period investment horizon.
ii. No taxes and no transaction cost for buying and selling securities exits.
iii. No inflation and no change in the level of interest rate exits.
iv. The capital market is in equilibrium.

v. All investments are infinitely divisible, fractional shares may be purchased in anyportfolio or any individual assets.
vi. All investor is Markowitz efficient diversifiers who delineate and seek to attain theefficient frontier.
vii. An infinite amount of money can be borrowed or lent at the risk-free interest rate.

The CAPM reduces the situations to an extreme case. Everyone has the same information and aggress about the future prospects from securities. This means that investors analyze and process information in the same way. There are prefect markets for securities because potential impediments such as finite divisibility, taxes, transition costs and different risk-free borrowing and lending rates have been assumed away. This approach allows the focus to shift from how an individual should invest to what would happen to security prices if everyone invested in similar manner. By examining the collective behaviors in the market places, the nature of the resulting equilibrium relationship between each securities risk and return can be developed. The following features of CAPM are described as follows.

Capital Market Line (CML)

The CAPM assumes that investor can lender borrow at the same risk-free rate of interest. In reality, such borrowing is likely to be either unavailable or restricted in amount. If there are no opportunities to borrow or lend at the risk-free rate, the efficient set would be curve and many combinations of risky securities would be efficient. All the investors face the same efficient set. The different investor will choose different portfolios form the same efficient set because they have different preference toward risk and return. This means that each investor will spread his or her fund among risky securities in the same relative proportion in order to achieve a personality performed overall combination of risk and return. This feature of CAPM is often referred to as the separation theorem.

Separation Theorem

The optimal combination of risky assets for an investor can be determined without any knowledge of the investor's preferences towards risk and return. In other words, the optional combination of risky assets can be determined without any knowledge of shape of an investor indifference curves.

Market Portfolio

The Market portfolio consisting of all the securities where the proportion invested in each security corresponds to its relative market value. The relative Market value of a security is simply equal to the aggregate market value of the security divided by the sum of the aggregate market values of all securities. It plays a central role in the CAPM because the efficient set consists of an investment in the market portfolio, coupled with a desired amount of either risk-free borrowing or lending.

Efficiency Set

In the CAPM it is simple to determine the relationship- between risk and expected return for efficient portfolio. The figure clarifies more about it.

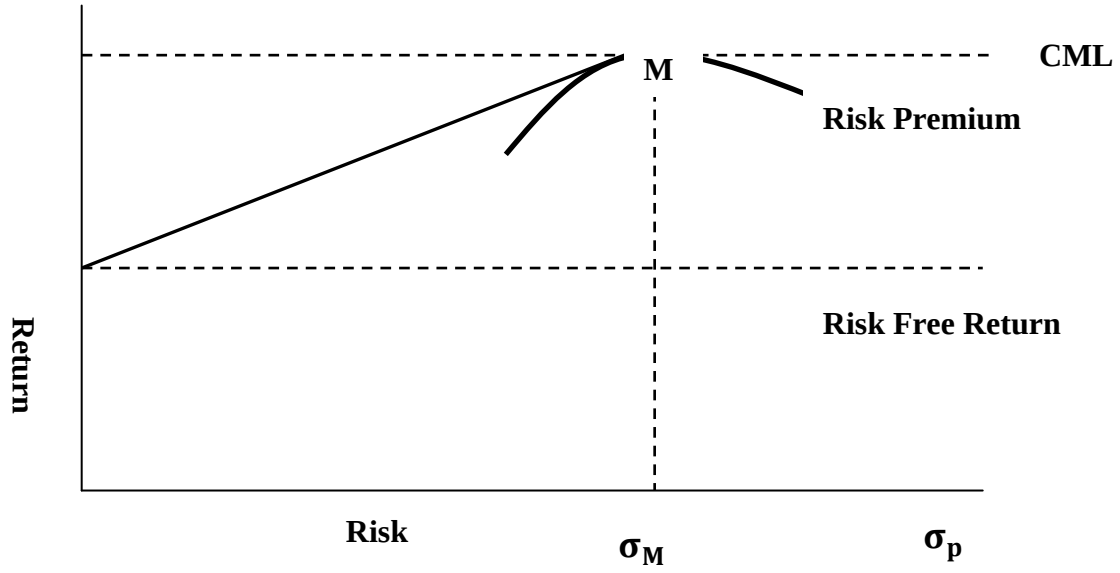

Figure 2. 3: Efficiency Set

Source: (Gautam ,2002)

Point M represents the market portfolio and $R_f$represents the risk-free rate of return. Efficient portfolio plots along the line starting at $R_f$and going through M and consist of alternative combinations of risk and return. The linear efficient set of CAPM is known as capital market line (CML). All portfolios other than those using the market portfolio and risk-free borrowing or lending lie between the CML. It has an interpret of $R_f$and a slope [E(Rm)-Rf] ÷ σmTherefore the equation for the capital market line may be expressed asfollows.

Symbolically,

E(RP)= Rf +[$Rm - Rf \div \sigma m$**]**σp

Where,

Rf= Risk free return

R_m = Expected return on market

σm = standard deviation on market portfolio

σp = portfolio risk an efficient.

For portfolio on the CML, to expected return is equal to the risk-free rate plus a return proportional to the total risk of the portfolio. The slope of the CML is the same for all portfolios one the CML and is the Market Price of risk.

Slope of CML = [E(Rm)-Rf]÷ σm

2.1.13Security Market Line (SML)

The capital market line (CML) is the relationship between total risk of portfolio σ_p and expected portfolio return E(Rp) which consists of the risk-free assists and the market portfolio. However, the total risks of an individual asset should not be used to measure its riskiness. Because some of the risk as reflected in total risk can be eliminated by diversification. Therefore, since its beta reflected risk after taking diversification benefits into account, beta rather than σ_is used to measure individual assets riskiness to investors. The relationship between individual assets riskiness to investors. The relationship between individual assets riskiness and their required return is set forth in the security market line (SML). The line is drawn in expected return and beta space. It is linear and positively sloped. Irrespective of whether investors can borrow or lead at a risk-free rate, all individual's securities and portfolios are positioned on the security Market line. The relationship betweenon assets return and its systematic risk can be expressed by SML. The equation for SML issymbolically;

E (Rj) = Rf + [E(Rm) − Rf] Bj

Where (R_j) = Expected return for an asset

R_f= Risk free, rate (usually assumed to be a short-term T-bill rate) equals the expected market return usually based on NEPSE index) and β_j= denotes the assets data. It is measure of sensitivity of a stock return to changes in the average markets returns.

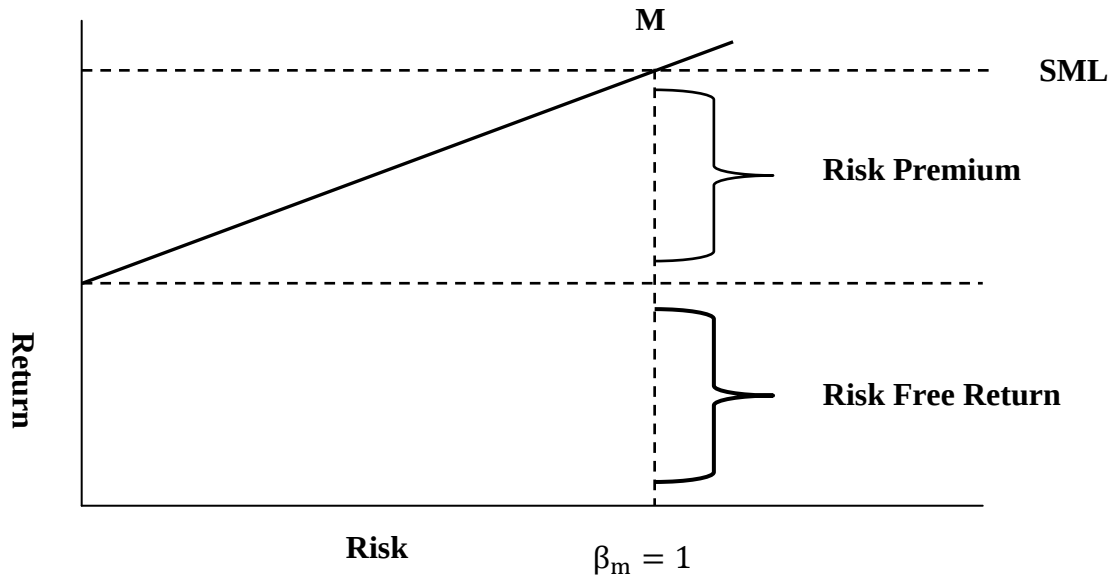

Figure 2. 4: Security Market Line (SML)

Source: (Gautam ,2002)

Here SML starts from risk free assets (R_f) and moved ahead linearly with beta (β_j) if the securities beta is greater than 1. Then it implies that the securities returns fluctuate more than the market returns. If beta is less than 1, the securities return is less sensitive to the change in the market. The CAPM theory indicates that how much required rate of return of individual securities for bearing the systematic risk.

Review of Related Studies

Different research works are carried out by different book and article. The study has also used different database, websites and western regional library of Nepal Commerce Campus, Min Bhawan Kathmandu and other different kinds of sources. Those studies and issues are reviewed in this section, which are related with risk and return analysis and investment analysis on share.

2.2.1 Review of Journal articles

Kandel (2018)found that is taken into the account and study found that there is a positive relationship between risk and return. Most of the investors are risk averter. It suggests to construct appropriate portfolio instead of investment in a single security which would be able to reduce unsystematic or diversifiable risk. Both quantitative

and qualitative analysis has been analyzed by using scientific methods. After the analysis of risk and return of sample bank, it is concluded that all the commercial banks are very much risky with fluctuated rate of return. From the findings of beta coefficient of each sample bank, the C.S. of NABIL is seeming very much volatile than NIBL stock. It was also found that both selected banks have a high proportion of unsystematic risk.

(Venkatesh and Reddy 2018)concluded that in order to get the money which, the investor has invested in the market, he should make use of this study. The investor should have the capability to analyses the various investment options available to himand thus minimize the risk and maximize the returns. Beta is useful in comparing the systematic risk of different stocks & for investors to judge a stock's riskiness. Based on these calculations we can conclude that investor should get updated with the market fluctuations so that he can select the best companies to invest their funds.

(Krishnaprabha and Vijayakumar 2015)concluded risk and return analysis plays a key role in most individual decision-making process. Every investor wants to avoid risk and maximize return. In general, risk and return go hand. If an investor wishes to earn higher returns than the investor must appreciate that this will only be achieved by accepting a commensurate increase in risk. Based on risk and return analysis, high risk gives high returns with low risk gives to low return, based on this concept in banking and automobile sector high risk gives low return, and in information technology, Fast moving consumer goods, pharmaceutical sector low risk gives high return. Alpha stock is positive and the companies are independent to market return and have profitable return.

Akhigbe and Whyte (2004)in their research paper focused on risk implementation 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 the event that permitted only limited entry by banks into non-banking activities. The study is conduct on systematic, unsystematic, unsystematic and total risk such risk is calculated by using statistical tools i.e., variance, standard deviation, t-statistical and signed rank which is used by (Aminud*et al.* 2002). The study has included 340 banks for the sample size then 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 is

systematic risk for banks securities firm and insurance companies but significant increase in total and unsystematic risk for the banks and insurance company. This study has included five years period data. The study also found that bank and insurance companies are less risky than securities business. So, if security firms want 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 the new era of financial modernization to mitigate adverse effects from the increase in risk.

(Adekunle *et al.* 2015)attempts to investigate risk management and financial performance of selected ten commercial banks in Nigeria. The study examines the role of credit risk management in value creation process among commercial banks in Nigeria. The study reviews the concepts, theories, legal acts and standards relating to the credit risk management and then develops a conceptual model with four antecedents to credit risk, such as antecedents are loan and advance loss provision, total loan and advances, nonperforming loan and total asset on accounting Return on Equity (ROE) and Return on Asset (ROA). The panel data come from ten commercial banks listed on Nigeria Stock Exchange (NSE) between 2006 and 2015. The results reveal that credit risk management has significant effect on financial performance of commercial banks and further recommend that maintaining minimum level of non-performing loans vis-à-vis provision for loans and advances will enhance financial performance through its positive effect on return on equity.

Based on the analysis and findings thereof, the study concludes that the credit risk management measures considered in this study is relevant in determining financial performance of banks as financial institutions. Reduced share of non-performing loans and advances in provision for loans and advances losses enhances financial performance via increased return on equity. More proportion of total loans and advances that turn out to be non-performing dwindling return on equity and reduces financial performance. Financial performance is enhanced when increased portion of total assets goes into loans and advances. Increased provision for loan and advances limits financial performance. Therefore, the study concludes that credit risk management has significant effect on financial performance of the banks. At the 5-percentage level of significance, overall effect on financial performance of the credit risk management measures in the study is found to be significant. Based on the

findings summarized above, and the conclusion thereof, the researchers therefore recommend that, banks maintain minimum level of non-performing loans vis-a-vis provision for loans and advances; minimize provision for loan and advances losses as a share of total loans and advances that would enhance return on equity and strengthen their financial performance; maintain proper proportion of total assets that goes into loans and advances.

2.2.2 Empirical studies

Maharjan, (2018)compared three commercial bank NIBL, NABIL and HBL to analyze Risk and Return on Common Stock Investment. She used to quantitate, descriptive method with secondary data in the study. The objectives of the study, to identify whether stocks of selected companies are over-priced, underpriced and equilibrium prices. To identify the proportion of systematic and unsystematic risk of a common stock. Findings of the study were, Standard deviation of HBL is high. The common stock of all listed commercial bank which are analyzed are underpriced. The average expected return of common stock of three sample commercial banks is 44.34 percent and the risk associated with this return is 43.15 percent. On the basis of Portfolio analysis, three assets portfolio is constructed and the portfolio return is and the portfolio risk associated with this return is approximately equal to average risk and expected return. The proportion of unsystematic risk from the total risk was high in NABIL. So, she suggests to invest in NABIL.

Oli (2013)studied on Investment Policy of Everest Bank Limited (EBL) and Himalayan Bank Limited (HBL). The study was conducted based on secondary data. Out of 28 Commercial Banks only 2 Commercial Banks are selected as sample. The researcher has used some statistical tools like trend analysis, mean, CV and financial tools like activity ratios, risk ratio, profitability ratio to analyses the study. objectives of his study were to find out the relationship between total investments, deposits, loans and advances, net profit and assets and compare them, evaluate the liquidity, assets management, efficiency, profitability and risk portion of EBL and HBL, analyze the deposit utilization trend and its projection for five years of HBL and EBL, provide package of a workable suggestions and possible guidelines to improve investment policy. The findings of the studies, the liquidity position of EBL was comparatively better than HBL.EBL had the highest cash and bank balance to total

deposit ratio, cash and bank balance to current assets ratio than that of HBL. Both EBL and HBL had almost same pattern of investment on government securities, but fluctuating ratios showed the unstable policy of investment. The asset management ratios of both banks are satisfactory.

Bhattacharya (2015)**‘‘**Risk and return Profile Analysis of selected Mutual Fund Product of Indian Mutual Fund Industry’ ’Mutual fund is an investment vehicle which well known for diversification of risk. The core of mutual fund lies in the basket of securities in which the corpus of a fund is invested. Professionals are employed to minimize the risk at an expected level of return. The level of risk of a scheme depends on the securities in which the corpus is invested. The present study attempted to access the risk associated with 25 selected equity diversified mutual fund schemes from five different fund houses. These fund houses are the leading players of the Indian mutual fund industry in terms of Asset under Management.

(Linn 2015)has studied *‘‘*Risk and Return in Equity and Options Markets*’’* about the relationship between prices of risk in options and equity markets within the context of a specific model, what we observe in the data rarely fits any single option pricing model with perfect precision. There seems to be little consensus on a single option pricing model with superior performance above all others. The purpose of this thesis is to empirically investigate the risk-return relation in options markets directly, without resorting to the use of option pricing models based upon relative pricing of options in terms of their underlying. Options markets provide a rich cross-section of data with which to study how investors price assets because they vary across firms, strikes and maturity. As a result, options data provides additional and complimentary information beyond the information contained in stocks. Using these facts, in this thesis I empirically investigate the risk-return relationship across stock option, index option and equity markets. In Chapter I of the thesis, I empirically show how to use options data to better estimate the cross-sectional price of market-wide volatility risk. I furthermore compare the price of volatility implicit in the cross-section of stock returns with the price implicit in the cross-section of option returns. In the same chapter I exploit the fact that options can be used to study the term structure properties of risk and return by examining the volatility risk and return tradeoff in options of different times to maturity. In Chapter II, based upon the paper "Pricing Kernel Monotonicity and Conditional Information," co-authored with Sophie Shive

and Tyler Shumway, I use data on index options and the underlying index to extract estimates of stochastic discount factors. We propose a new method for non-parametrically estimating the stochastic discount factor. Our method improves upon existing methods by aligning information sets available to investors at each time in our sample and taking these into consideration in our estimation scheme. Empirical results suggest that this may be the solution to a well-known anomaly in the literature whereby non-parametric estimates of the pricing kernel tend to be non-monotonic in market returns.

Sharma (2012)has conducted a study on risk and return analysis of commercial bank in Nepal. The main objective of the study was to analyze annual average rate of commercial banks in Nepal. For the study, the researcher has used 10 years of data from 2000 to 2010.She has used financial and statistical tools to calculate the return, standard deviation, coefficient of variation and beta coefficient. The major findings of her study are that the average rate of return of NABIL, HBL, NIB and EBL are 33 percent, 29.3 percent, 15.65 percent and 48.7 percent. As the result the Everest Bank has the highest return and NIB has the lowest return. In the year 2004/05 NABIL. HBL & EBL are negative annual return but NIB has positive return. Also, in 2001/02 HBL, in 2002/03, 2003/04 and 2006/07 NIB has negative return. The standard deviation of NABIL, HBL, NIB and EBL are 0.5534, 0.442, 0.388, 0.782 and beta coefficient of NABIL, HBL, NIB and EBL are 0.15, 0.3696, 0.195 and 0.0212 respectively.

Gupta (2011)has conducted a study on *"Risk and Return Analyze of Commercial Bank of Nepal"* by taking five banks as sample. Analytical tools like rate of return, standard deviation, coefficient of variance, correlation coefficient and optimal weight have been used. According to this study, the main objectives are to analyze portfolio of risk and return and the correlation between returns of commercial banks and also to describe the risk and return that directly affects the commercial banks. The major findings of the study are generally public have least understanding about the risk of the investments which may be due to poor education, lack of adequate information, etc., that may obstruct the development of stock market. The study covered five years period.

2.2 Research Gap

Research gap is the difference between previous work done and the present research work. Earlier works conducted by the previous researchers are very useful and appreciated by personnel in various related field. The suggestions and recommendations given by the previous researchers help to improve and increase the necessary data for the related topic. There has been lot of research works and studies undertaken to examine therisk and return of commercial banks. But the purpose of study is quite different from the previous studies in terms of the time period it covers. The study has been conducted taking Nepal Investment Bank Ltd, Standard Chartered Bank Ltd and Himalayan Bank Ltd. For the analysis purpose this study mostly used Correlation Coefficient, Standard Deviation and Coefficient of Variance suggested by (Sinkey) in book "Commercial bank and Financial Management." Therefore, this study is useful to the concern bank as well as different persons such as shareholders, investors, policy makers, stockbrokers, state of government, etc. During literature review, no previous studies were found which assessed the risk that arises from non-performing loans of the bank. This study focuses on analyzing the risk and return of the concerned banks. Therefore, there is research gap and this study is conducted to fulfill the mentioned gap.

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is the systematic way of solving research problems and which ultimately refer to the overall research process. It includes all the procedures from theoretical framework to the collection and analysis of the data. As most of the data are quantitative, the research is based on the specific models.

In this study all the data are secondary and the observed data is analyzed with using appropriate financial and statistical tools. This chapter includes research design, sources of data, analytical tools and procedures of collection and analysis of data.

3.2 Research Design

This study is based on descriptive and analytical research design. Descriptive research design is used to describe the relationship between risk and return from table. Trend lines and figures with the help of presented data. Similarly, as an analytical research design this study uses standard deviation, coefficient of variation, beta coefficient, CAPM and average rate of return of sampled bank.

3.3Population, sample and sampling design

The total population of the study is NEPSE listed commercial bank in Nepal. There are altogether 21 commercial banks in Nepal. (NRB 2022) out of total three banks have been taken as sample to study the population. The sampled banks have been selected using random sampling technique. Following three banks are selected as sample:

i. Nepal investment bank ltd
ii. Himalayan bank ltd
iii. Standard charted bank ltd

3.4Nature and sources of Data

In this study secondary data sources have been used to present and analyze the data. Information from secondary data sources such as report of Nepal stock exchange ltd.

report of security Board of Nepal. Various website and annual reports of sampled commercial banks are used.

3.5 Data Collection Techniques

In order to collect the data, annual reports published by banks NRB, economic report and other published statistical data has been used, and to obtain the additional information, informal talks and procedures has been used. Similarly, information may be collected from bulleting, booklets, and journals published from relevant banks and other external sources also have been used.

The secondary data are those which have already been collected by someone and already been passed through the statistical process. Thus, the sources of secondary data would be journals, newspapers; government material related to the study, master degree thesis related to this research, book related to financial management and different websites. Hence, data collection procedures consist both the way of data collection procedures.

The study is mainly based on secondary data however primary data have been taken with the individual investor, NEPSE staff and stockbrokers. The secondary data are collected mainly from sources like annual reports, prospectus published bulletins, newspaper, journal internet and other sources. Secondary data are collected from various publications of concerning organizations from NEPSE and even from Websites of various banks. The research work has covered a period of five years i.e., FY 2016/2017to FY 2019/2020.

3.6 Data Analysis Tools

For the achievement of the study various financial and statistical tools can be applied. The analysis of data has been done according to the pattern of available data. The descriptions of financial as well as statistical tools are as follows:

3.6.1 Financial Tools

The financial tools are used to find the financial strength, weakness, opportunity and threats of a firm. An analysis of financial statements helps to take managerial and financial decisions. In this study, various financial tools have been employed for the sake of analysis. The basic tool for financial analysis will be ratio analysis and

another is statistical tool. Financial analysis is the process of identifying the financial strength and weakness of firm by properly establishing relationship between the items of balance sheet, which represents a snapshot of the firm's financial position at a movement in time and next, income statement that depicts a summary of the firm's profitability overtime (Van Horne 2000).

Ratio analysis has been accepted as the most dominant financial tools to analyze and interpret the financial statements. The relationship between two figures expressed mathematically is known as financial ratio. It is the systematic use of ratio to interpret the financial statement so that the strength and weakness of the firms as well as its historical performance and current financial conditions can be determined. Thus, ratio is defined as "the indicated quotient of two mathematically expresses and the relationship between two or more things." For this study, ratios are categorized into the following major headings: -

Ratio Analysis

This ratio is used to measure the return of the sampled organizations in the following ways.

1. Return on Assets (ROA)

Return on assets gives an idea as to how efficient management is at using its assets to generate earnings. Return on assets ratio illustrates how well management is employing the organization's total assets to make a profit. The higher the return on assets number, the better, because the organization is earning more money on less investment.

Symbolically:

$$\text{Return on Assets} = \frac{\text{NetIncome}}{\text{TotalAssets}}$$

2. Return on Equity (ROE)

The return on equity measures how much the shareholders earned for their investment in the organization. The higher the ratio percentage, the more efficient management is in utilizing its equity base and the better return is to investors: -

Symbolically:

$$\text{Return on Equity} = \frac{\text{NetIncome}}{\text{Shareholder'Equity}}$$

3.6.2 Statistical Tools

The statistical tool is essential to measure the relationship of two or more variable. It is the mathematical technique used to facilitate the analysis and interpretation of the performances of the organizations. It helps to compare the performance, strengthen, weakness of the organizations. It also helps to present the data, show the relation and deviation or differences of variables of organizations, in this study, the following statistical tools are used: -

1. Arithmetic Mean

Arithmetic meant or simply a 'Mean' of a set of observation is the sum of all the observation divided by the number of observation (Bajracharya 1996). It is the best value, which represent to the whole group. Mean is the arithmetic average of a variable. It has been used to compute the company wise average rate of return in terms of return on assets and return on equity. Arithmetic mean of a series is given by:

Arithmetic Mean ($\bar{X}$) = ΣXN

Where,

ΣX = Sum of the variable X'

N = Total No of observations.

3.4.1 Standard Deviation (σ)

It is a statistical measure of the variability of a distribution of return around its mean. The standard deviation is the absolute measures of dispersion in which the drawbacks present in other measures of dispersion are removed. It is said to be the best measure of dispersion as it satisfies most of the requisites of a good measure of dispersion (Bajracharya 1996). Standard deviation is defined as the positive square root of the mean of square of the deviation takes from the arithmetic mean measure the unsystematic risk. It is widely used to measure risk from holding a single asset. It measures the absolute dispersion. Higher the standard deviation higher will be the variability and vice versa.

Dispersion measures the variation of the data from the central value. In other word, it helps to analyze the quality of data regarding its variability. It can be:

Standard Deviation (σj) = $\sqrt{\frac{\Sigma\left(\mathbf{R_{j-\bar{R}_j}}\right)}{\mathbf{N-1}}}$

Where,

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

Rj = Probability distribution of the observation

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

N = Number of years that the returns are taken

3.4.2 Coefficient of Variation (C.V.)

Standard deviation is the absolute measure of dispersion. The relative measure of dispersion based on the standard deviation is known as the coefficient of standard deviation (Bajracharya 1996). It is independent of unit. It measures the risk per unit of return. So, two distributions can bitterly be compared with the help of C.V for their variability. Less the C.V, more will be the uniformity, consistency etc. and more the C.V less will be the uniformity, consistency etc. it is calculated as under: -

Coefficient of variation (CV) = $\frac{\sigma_j}{\bar{R}_j}$

Where,

$C.V$ = Coefficient of variation of stock j.

σj = Standard deviation of return on stock j.

(Rj)= Expected rate of return on stock j.

3.4.3 Beta Coefficient ($\boldsymbol{\beta}$)

The beta coefficient is an idea of systematic risk. It may be used for ranking the systematic risk of different assets. It is an index of the degree of movement of an assets return in response to a charge in the market return. An asset's historical returns are used in finding the asset's beta coefficient.

Beta coefficient shows the market sensitivity of stock. Higher the beta, greater the sensitivity and reaction to the market movement. Beta coefficient of a particular stock will be less than, equal or more than 1, but the beta for market will be always 1, but the beta of market beta serves as a benchmark or measuring scale for the evaluation of risk of individual stock. Beta coefficient can be expressed as follows: -

$$\beta = \frac{COV_{Jm}}{\sigma m^2}$$

Where,

βj = Beta coefficient of stock j.

C (Rj, Rm) = Covariance between return on stock j and return on market.

$$\text{Cov.R}_j,\text{R}_m = \frac{\left(\sum R_{J-\bar{R}_M}\right)\left(R_{M-\bar{R}_M}\right)}{N-1}$$

$\sigma m2$ = Variance of market return.

3.4.4 Correlation Coefficient (Pij)

Correlation coefficient defines the degree of relationship between two assets whether they are going in same direction or opposite direction. Two variables are correlated When they are related that the change in the value of one variable is accompanied by change in the value of other. Correlation may be positive or negative. If returns on two securities are negatively correlated which combined in portfolio reduces the risk. If securities are positively correlated risk cannot be reduced. Correlation coefficient is negative or positive which ranges from +1 to -1. It can be calculated as,

Correlation between stock i&j$\left(\rho_{ij}\right) \equiv \frac{COV_{ij}}{\sigma_i \times \sigma_j}$

Where,

Pij = Correlation coefficient for securities i and j.

$Covij$ = Covariance between securities i and j.

$\sigma i \sigma j$ = Standard deviation of returns for securities i and j.

3.4.5 Covariance

The covariance is the statistical measure of relationship between two random variables. It is the measure of how the returns of two assets move together. If the returns of the two securities move in the same direction consistently the covariance would be positive. If the return of the two securities moves in the opposite direction consistently the covariance would be negative. If the movement of returns were independent of each other, covariance would be close to zero. Hence, covariance defines the combined risk or accumulated risk between two assets. Covariance and correlation are closely related, covariance between two assets can be calculated by using following formula.

Covariance between securities i& j$\left(COV_{ij}\right) = \frac{\Sigma\left(r_{i-\bar{r}_i}\right)\left(r_{j-\bar{r}_j}\right)}{n}$

Where,

Ri = Rate of return of security 'i'

(Ri)= Expected Return of security 'i'

Rj = Rate of return of security 'j'

(Rj) = Expected Return of security 'j'

3.4.6 Return on Market

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

Formula

Where,

R_m= Return on Market

NI_t= NEPSE index at time t

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

3.4.7 Expected Return on market, E (Rm)

It is average return of future expectation. It is calculated by summing up the past return and dividing by number of samples period.

Formula

Where,

(Rm) = Expected return on market.

ΣRm= Summation of market return.

n = Number of samples period.

3.4.8 Partitioning of Total Risk

Systematic risk proportion ($\rho 2$) =$\beta j2\sigma m2\sigma j2$

Unsystematic risk proportion ($1-P2$) =$(e)\sigma j2$

Where,

$\sigma j2$= Variance of stock j.

$\beta j2$ = Square beta of stock j.

$\sigma m2$ = variance of market return.

(e)= residual variance.

3.5 Types and Sources of Data

To achieve the objective of the study secondary data has been used. The secondary data has been collected through various published and unpublished documents of the concerned authorities.

3.6 Data Analysis Tool

All the data has been presented and analyzed to fulfill the objectives of the study. To illustrate the research work, various financial and statistical tools have been used which are discussed in details as below.

i. Arithmetic Mean
ii. Standard Deviation
iii. Coefficient of variation
iv. Beta
v. Correction Coefficient
vi. Diversifiable Risk/Unsystematic Risk
vii. Undiversifiable Risk/ Systematic Risk

CHAPTER – IV
RESULT AND DISCUSSION

4.1 Introduction

This chapter deals with the presentation and analysis of relevant data of the commercial banks of Nepal in order to fulfill the objectives of the study. To obtain the best result, the data have been analyzed according to the research methodology as mentioned in third chapter.

The purpose of this chapter is to introduce to the mechanics of data analysis and interpretation. Data analysis is the relationships or differences supporting or conflicting with original or new hypothesis should be subjected to statistical test of significance to determine with what validity data can be served to indicate any conclusion.

In this chapter, data collected from secondary sources are presented and analyzed by using financial and statistical tools and its findings have been discussed in this chapter. The various data in respect of different heading are analyzed one by one. The main purpose of this chapter is to study, evaluate and analyze those major financial performances, which are mainly related to the liquidity management of commercial banks.

4.1.1 Risk and Return on the basis of Return on Assets Ratio

Return on assets ratio measures the profitability with respect to the total assets invested in commercial banks. The higher the return, the more efficient management is in utilizing its assets. It is best to compare it against a company's previous ROA numbers or the ROA of a similar company. The ROA figure gives investors an idea of how effectively the company is converting the money it has to invest into net income. The higher the ROA number, the better, because the company is earning more money on less investment. The return is measure by arithmetic mean ($\bar{X}$), total risk is measure by standard deviation (σ) and coefficient of variation (C.V) calculates risk per unit which is presented under this topic. The table (4.1) shows the risk and return on the basis of return on assets under commercial banks like Nepal Investment Bank Limited (NIBL), Standard Chartered Bank Nepal Limited (SCBNL) and Himalayan Bank Limited (HBL).

Table 4. 1: Risk and Return on the basis of Return on Assets (%) under Commercial banks

Fiscal year	NIBL%	SCBL%	HBL%
2016/2017	1.56%	1.22%	1.68%
2017/2018	1.19%	1.71%	1.66%
2018/2019	1.79%	2.61%	2.08%
2019/2020	2.13%	2.61%	1.61%
2020/2021	2.06%	1.98%	2.03%
Total	8.73	10.13	9.06
Mean	1.746	2.026	1.812
S. D	0.345116	0.535579	0.411605
C.V	0.19766	0.26435	0.22716

Sources: Annual Report of Sample Banks/Appendices- II

Table 4.1 shows the relationship of mean return, standard deviation and covariance of three banks for 5 consecutive years. The mean ratio of NIBL, SCBL and HBL are1.746, 2.026 and 1.812respectively. Among these three banks, SCBL has the highest mean ratio whereas NIBL and HBL have the lower ratio.

It indicated that SCBL is mobilizing its fund more satisfactorily than NIBL and HBL. It can be interpreted as SCBL has highest degree of investment in risky assets and NIBL and HBL have the lowest in comparison with SCBL. The low ratio shows low productivity and high degree of safety in liquidity and vice versa.

The standard deviations of three banks are 0.345116, 0.535579 and 0.411605 respectively and CVs are 0.19766 Percent, 0.26435 Percent, and 0.227155 Percent respectively. It can be interpreted that SCBL has highest degree of deviation and highest degree of variation. The graphical presentation of the four banks during the study.

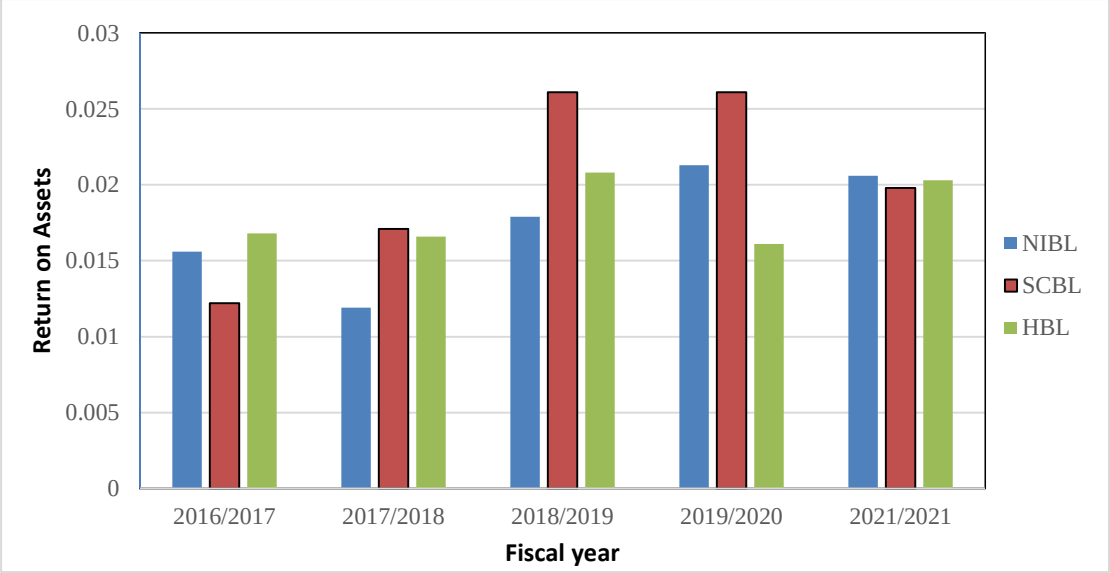

Figure 4. 1: Risk and Return on the basis of Return on Assets (%) under Commercial Banks

4.1.2. Risk and Return on the Basis of Return on Equity Ratio

The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. The table (4.2) shows the risk and return on the basis of return on equity under commercial banks like Nepal Investment Bank Limited (NIBL), Standard Chartered Bank Nepal Limited (SCBNL) and Himalayan Bank Limited (HBL).

Table 4. 2: Risk and Return on the basis of Return on Equity (%) of Commercial Banks

Fiscal year	NIBL%	SCBL%	HBL%
2016/2017	11.04%	8.62%	14.89%
2017/2018	8.92%	13.16%	14.71%
2018/2019	12.99%	16.31%	17.28%
2019/2020	14.71%	15.73%	13.27%
2020/2021	16.65%	13.06%	17.67%
Total	64.31	66.88	77.82
Mean	12.862	13.376	15.564
S.D	2.707	2.717	1.663
C.V	0.2105	0.2031	0.1068

Sources: Annual Report of Sample Banks/Appendices-III

Table 4.2 shows the relationship of mean return, standard deviation and coefficient of variation of three banks for 5 consecutive years. The mean ratio of NIBL, SCBNL and HBL are12.862, 13.376 and 15.564 respectively. Among these three banks, HBL has the highest mean ratio whereas NIBL and SCBL have the lower ratio.

The mean return of EBL is 0.15564 percent, which are higher than others with lowest standard deviation and coefficient of variation i.e., 0.0395 and 14.210 which seem EBL has better financial performance. The mean return and standard deviation of HBL are0.1693, 0.0527 respectively, which are lower than others with highest coefficient of variationi.e., 31.140. So, HBL has lower financial performance.

The mean return of NIBL and SCBL are 12.862 and 13.376 respectively, the standard deviation of NIBL and SCBL are 2.707 and 2.7172 respectively and the coefficient of variation of NIBL and SCBL are 0.2105 and 0.20314 percent risk respectively. The above table shows higher the risk, higher the return and lower the risks lower the return is justified.

The graphical presentation of the four banks during the study.

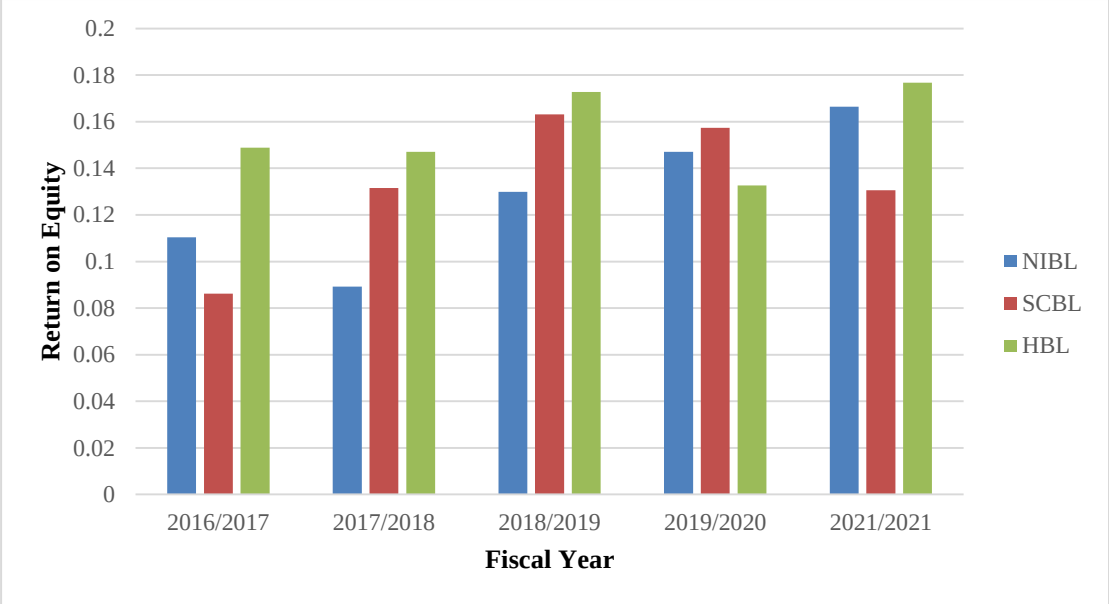

Figure 4. 2: Risk and Return on the basis of Return on Equity (%) of Commercial Banks

4.2 Portfolio Analysis

Analyzing elements of a firm's product mix to determine the optimum allocation of its resources are portfolio analysis. It includes portfolio risk comparison with weighted average risk and portfolio return.

4.2.1 Portfolio Risk and Return on the basis of Return on Assets

Portfolio risk and return on the basis of return on assets are presented in the table below, which represents correlation, respective weight, average return and risk, portfolio risk andreturn calculated under different banks.

The given Table 4.3 represents portfolio risk and return on the basis of return on assets of commercial bank.

Table 4. 3: Portfolio Risk and Return on the basis of Return on Assets under Commercial Bank

Combination of Banks	Correlation	Respective Weight (%)	Average Return (%)	Portfolio Return (%)	Average Risk (%)	Portfolio Risk (%)
NIBL& SCBL	0.61395	0.97,0.03	13.119	1.754	2.717	0.34486
NIBL&HBL	0.12090	0.60,0.40	14.213	1.772	2.185	0.31544
SCBL&HBL	0.16992	0.35,0.65	14.47	1.887	2.19	0.35180

Source: - Appendix-II

The portfolio result present in Table 4.3 indicate the combination of banks such as NIBLand SCBL, NIBL and HBL, SCBL and HBL, shows positive correlation i.e., -0.61395, 0.12090, 0.16992 respectively in terms of return on assets. The risk are highly diversified, the combination of banks which have negative correlation in comparison to positive correlated firms.

The combination of SCBL and HBL, NIBL and HBL shows portfolio return is higher than average return whereas the combination of NIBL and SCBLshows portfolio return is lower than average return. The portfolio risk of all combination of bank is less than average risk.

4.2.2. Portfolio Risk and Return on the basis of Return on Equity

Portfolio risk and return on the basis of return on equity are presented in the table below, which represents correlation, respective weight, average return and risk and portfolio risk and return calculated under different banks.

The given Table 4.4 represents portfolio risk and return on the basis of return on equity of commercial banks.

Table 4. 4:Portfolio Risk and Return on the basis of Return on Equity under Commercial Bank

Combination of Banks	Correlation	Respective Weight (%)	Average Return (%)	Portfolio Return (%)	Average Risk (%)	Portfolio Risk (%)
NIBL&SCBL	0.35472	0.50,0.50	13.119	13.1190	2.712	2.2321
NIBL&HBL	0.37998	0.16,0.84	14.213	15.44296	2.185	2.4201
SCBL&HBL	0.10443	0.25,0.75	14.47	15.0170	2.19	1.4812

Source: - Appendix-III

Based on the table 4.4, the combination of banks such as NIBL and SCBL, NIBL and HBL, SCBL and HBL shows positive correlation i.e., 0.35472,0.37998 and 0.10443 respectively, in terms of return on equity. The risk has highly diversified the combination of banks which have negative correlation rather than the combination banks which have positive correlation.

The portfolio returns of NIBL and HBL and SCBL and HBL are higher than average return, whereas the portfolio returns of NIBL and SCBL, are lower than average return. The portfolio risk of all combination of banks is lower than average risk.

4.3 Analysis of Market Sensitivity

Market sensitivity of stock is explained by term of beta coefficient. Higher the beta greater is the sensitivity and higher the reaction to the market movement and vice-versa. Beta measures the systematic risk, which cannot be eliminated through the means of diversification. Some of benchmark betas follow:

B=0.5 stock is only half as volatile

B= 1.0 stock is of average risk

B= 2.0 is twice as risky as the average stock

Stock's beta coefficient determines how it affects the riskiness of a diversified portfolio.

Beta is the most relevant measure of a stocks risk.

Beta coefficient of market is always 1. This statement can be proved as follows:

$$\beta = \frac{\mathrm{COVR}_{\mathrm{JR_M}}}{\sigma_{\mathrm{M}^2}}$$

Where,

CovRjRm = covariance between market return and stock return.

Hence,

$$\beta_{M=}\frac{covR_{MR_M}}{\sigma_{M2}} = 1$$

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

Here, the covariance is 0.01486, correlation of coefficient is 1.66182 and beta-coefficients is 0.06704 of NIBL with comparing of the market which seems good enough for the general investors to invest in this sector.

4.3.1Analysis of Co-Variance (Cov_{jm}), Correlation of coefficient (R_{jm}) and Beta (B_j) of SCBL

Table 4. 5: Co-Variance (Covjm), Correlation of coefficient (Rjm) and Beta (Bj)

Fiscal Year	$(R_j - \bar{\bar{R}}_j)$	$(R_m - \bar{\bar{R}}_m)$	$(R_j - \bar{\bar{R}}_j)(R_m - \bar{\bar{R}}_m)$
2016/2017	-0.11453	-0.20061	0.02298
2017/2018	-0.72798	-0.43459	0.31637
2018/2019	-0.00798	-0.16213	0.00129
2019/2020	-0.12301	-0.11854	0.01458
2020/2021	-0.17182	0.91588	-0.15737
			0.19785

The detail calculation of $(R_j - \bar{\bar{R}}_j)$ and $(R_m - \bar{\bar{R}}_m)$ for each fiscal year are given in Annex

Here, the covariance is 0.03957, correlation of coefficient is 2.12399 and beta-coefficients is 0.17852 of SCBL with comparing of the market which seems good enough for the general investors to invest in this sector.

4.3.2 Analysis of Co-Variance (Cov_{jm}), Correlation of coefficient (R_{jm}) and Beta (B_j) of HBL

Table 4. 6: Co-Variance (Covjm), Correlation of coefficient (Rjm) and Beta (Bj) of HBL

Fiscal Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j)(R_m - \bar{R}_m)$
2016/2017	-0.04286	-0.20061	0.00860
2017/2018	-0.35387	-0.43459	0.15379
2018/2019	0.07917	-0.16213	-0.01284
2019/2020	-0.00591	-0.11854	0.00070
2020/2021	-0.10516	0.91588	-0.09631
Total			0.05394

The detail calculation of $(R_j - \bar{R}_j)$ and $(R_m - \bar{R}_m)$ for each fiscal year are given in Annex.

Here the covariance is 0.01079, correlation of coefficient is 0.13486 and beta-coefficients is 0.04868 of HBL with comparing of the market which seems good enough for the general investors to invest in this bank.

4.4 Comparison of Co-variance, correlation coefficient and the Beta between the Sampled Banks

The following table shows the Co-variance, correlation coefficient and the Beta between the sampled banks in various years under studied.

Table 4. 7: Covariance, Correlation Coefficient and Beta of the Sampled Banks

S. N	Bank	Covariance	Correlation	Beta	Remarks
1.	NIBL	0.01486	1.66182	0.06704	
2.	SCBL	0.03957	2.12399	0.17852	Highest beta, Highest correlation and Highest covariance
3.	HBL	0.01079	0.13486	0.04868	Lowest beta

According to the table 4.15 shown the highest covariance is 0.03957 OF SCBL and Lowest Covariance is 0.01079 of HBL. The correlation of coefficient between bank and market of SCBL is highest i.e., 2.12399 and lowest is 0.13486 of HBL. The SCBL have highest beta coefficienti.e., 0.17852 and lowest is i.e., 0.04868 of HBL.

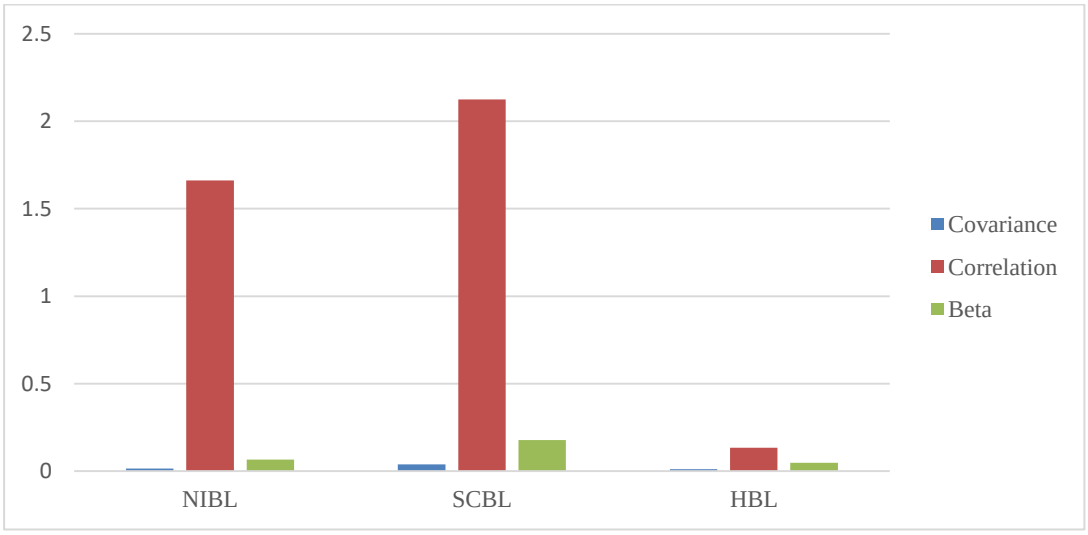

Figure 4. 3: Covariance, Correlation coefficient and Beta of the Sampled Banks

4.5 Risk Analysis

Here, we analyze the level of risk of the selected sampled banks. For analyzing the risk, standard deviation, coefficient of variance, systematic risks, unsystematic risk and the beta coefficient have been calculated for each sampled banks based on the available data. Standard deviation measures the total risk that includes both systematic risks that can't be diversified and unsystematic risk which can be diversified. The coefficient variance is also calculated as the standard deviation may not be the appropriate measure of risk in case of different rate of returns of companies under consideration. It measures the risk per unit of return. The beta coefficient measures the market sensitivity of the stock of sampled commercial bank under study. Here, it is assumed that the beta coefficient of the market is alwaysequalto1. The study and analysis of level of risks of selected sample banks along with their average rate of return over the period of study has been presented below:

4.5.1 Risk Analysis of NIBL Bank

Table 4. 8: Risk Analysis of NIBL Indicators Results of NIBL Bank

Indicators	Results of NIBL Bank
Average rate of return	2.59396
Standard deviation	0.09497
Coefficient variance	3.66120
Covariance	0.01486
Correlation	1.66182
Beta	0.06704
Systematic Risk	0.00100
Unsystematic Risk	0.00802

The 4.9 search for risk analysis of NIBL indicators result of NIBL bank it is clear that the average return of NIBL Bank is 2.59396 percent and has the total risk of 0.09497 as indicated by its standard deviation. Out of its total risk 0.00100 is a systematic risk that can't be diversified whereas 0.00802 is an unsystematic risk which can be diversified in the future. The coefficient of variance is also calculated that measured the risk per unit of return which is 3.66120 in case of NIBL Bank over the period of study. It has the beta coefficient of 0.06704 which indicates that the stock of NIBL is less volatile than the market as the beta coefficient is less than 1.

4.5.2 Risk analysis of SCBL Bank

Table 4. 9: Risk Analysis of SCBNL

Indicators	Result of SCBL Bank
Average rate of return	11.45313
Standard deviation	0.34287
Coefficient of variance	1.48379
Covariance	0.03957
Correlation	2.12399
Beta	0.17852
Systematic Risk	0.00706
Unsystematic Risk	0.11050

The 4.11 table search for risk analysis of SCBL the average return of SCBNL Bank is 11.45313 percent and has the total risk of 0.34287 as indicated by its standard deviation. Out of its total risk 0.00706 is a systematic risk that can't be diversified whereas 0.11050 is an unsystematic risk which can be diversified in the future. The coefficient of variance is also calculated that measured the risk per unit of return which is 1.48379 in case of SCBL Bank over the period of study. It has the beta coefficient of 0.17852 which indicates that the stock of SCBL is less volatile than the market as the beta coefficient is less than 1.

4.5.3. Risk Analysis of HBL Bank

Table 4. 10: Risk Analysis of HBL

Indictors	Results of HBL Bank
Average rate of return	4.28623
Standard deviation	0.16994
Coefficient of Variance	3.96479
Covariance	0.01079
Correlation	0.13486
Beta	0.04868
Systematic Risk	0.00653
Unsystematic Risk	0.02835

The 4.12 table search for risk analysis of HBL the average return of HBL Bank is 4.28623 percent and has the total risk of 0.16994 as indicated by its standard deviation. Out of its total risk 0.00653 is a systematic risk that can't be diversified

whereas 0.02835 is an unsystematic risk which can be diversified in the future. The coefficient of variance is also calculated that measured the risk per unit of return which is 3.96479 in case of HBL Bank over the period of study. It has the beta coefficient of 0.04868 which indicates that the stock of HBL has positive correlation with the market.

4.6 Comparative Risk Analysis of Sampled Banks

The Comparative analysis of risk involved in the sampled commercial banks over the study period is presented below with the help of the table:

Table 4. 11. Comparative Risk Analysis of Sampled Banks

Bank	Average Return	Standard Deviation	Coefficient of Variance	COV	Correlation	Beta	Systematic Risk	Unsystematic Risk
NIBL	2.59396	0.09497	3.66120	0.01486	1.66182	0.06704	0.00100	0.00802
SCBL	11.45313	0.34287	1.48379	0.03957	2.12399	0.17852	0.00706	0.11050
HBL	4.28623	0.16994	3.96479	0.01079	0.13486	0.04868	0.00653	0.02835

The Comparative Risk Analysis of Sampled Banks it is clear that among the sampled banks SCBL has the highest average return of 11.45313 percent that involves the highest level of risk of 0.34287 over the period of study. Thus, it resembles the fact that higher the risk, higher the return. It also has the highest beta of 0.17852 which indicates that the stock of SCBL is highly sensitive to the market changes as compared to the other sampled banks whereas, NIBL bank has the lowest level of risk along with the lowest return of 2.59396 percent. Its beta is also less than one which indicates that its stock price is less sensitive to the market changes. There is not much scope of reducing the risk involves in NIBL banks as it has the level of unsystematic risk of only 0.00802 but that of SCBL can be reduced to some extent as SCBL has the unsystematic risk of 0.11050. Among these sampled banks, SCBNL has the second highest return with the moderate level of risk of 0.34287 which is the second highest level of risk among the sampled banks. Even the beta coefficient of NIBL bank is 0.06704 which is not as high as that of SCBL or not as less as that of HBL bank. Thus,HBL bank look more attractive than any other sampled banks even though it is not providing highest amount of return because it is not highly risky and sensitive as

SCBL nor it is as low risky and insensitive as NIBL bank. It is providing reasonable return with reasonable level of risk involved.

4.7 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.

i. The mean return of SCBL is 2.026 percent which is higher than others andhave moderate standard deviation and coefficient of variation i.e., 0.53558 percentand 26.435 percent risks.
ii. When total risk is considered, SCBL with 0.53558 percent showed highest risk. Whereas NIBL with 0.34512 percent showed lowest risk.
iii. Among selected banks, the combination of NIBL and HBL has highest correlationi.e.,0.37998which diversified more risk than others combination of banks.
iv. The portfolio risk was diversified in all combination of banks.
v. Among all combination of banks, the portfolio returns of SCBL and HBL have moderate portfolio returns and lower portfolio risk i.e., 15.0170 percent and 1.4812 percent.
vi. Among selected banks, HBL has highest mean return i.e., 15.564 percent lowestandard deviation and coefficient of variation i.e.,1.663 percent and 0.1068percent risks.
vii. The combination of NIBL and HBL has highest correlation i.e.,0.37998 which diversified more risk than all combination of banks.
viii. The portfolio risk reduced in all combination.
ix. The combination of SCBL and HBL has moderate portfolio return i.e., 15.0170 percent, with lowest portfolio risk i.e1.4812 percent.

As per the analysis of data, following major finding have been obtained. The return is the income received on a stock investment, which is usually expressed in percentage. Expected return of is maximum 11.45313 percent of SCBL bank. Similarly expected return of NIBL and HBL are 2.59396 percent and 4.28623 percent respectively.

Risk is the variability of returns which is measured in terms of standard deviation. On the basis of standard deviation, stock of SCBL is most risky since it has high S.D i.e. 0.34287. Stock of NIBL has least risk because of its low S.D of 0.09497.

On the other hand, we know that C.V is more rational basis of investment decision. This measures the risk per unit of return. On the basis of CV, common stock of NIBL is best among all other banks. SCBL has 1.48379unit of risk per 1 unit of return. But common stock of HBL has the highest risk per unit of return i.e., 3.96479units.

Systematic risk of NIBL, SCBL and HBL are 0.00100, 0.00706 and 0.00653 respectively. And unsystematic risk of NIBL, SCBL and HBL are 0.00802, 0.11050 and 0.02835respectively.

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. 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.

4.8 Discussion

Discussion mostly the result of research has been discussed under relevant table of analysis or with each data of commercial bank. This research was entirely focused on the risk and return of common stock of commercial bank of Nepal. The data for the research was taken from journal, financial reports of NEPSE and respective commercial bank.

(Risal 2013)study enables investors to put the returns, they can expect and the risk they may take into better perspectives. But due to lack of knowledge and required information, Nepalese private investors are unable to analyze the securities as well as market prosperity.

On the basis of major finding this study thinks appropriate to recommend the concerned institutions to individual authorities as well as others in order to consider the following suggestions. The proper analysis of the individual stock the industry and whole market is essential to take investment decision. The general knowledge about general economic condition, government tax policy, peace and political situation of nation etc. is necessary which affect the price of share.

At present individual potentials investors due to lack of their education, awareness and confidence, are hesitated to invest in common stock, so their education,

awareness and confidence should be uplifted by providing related information. Government needs to amend the rules and regulation regarding stock market in time to time and to make the policy that protects individual investor's right and it also needs to follow up the implementation of rules and regulation and to make sure the objective is achieved. On that regard Government of Nepal needs to monitor and to make market properly. The financial institutions and companies should provide the real financial statements. The data provided by NEPSE and the company itself are different in some cases. It creates confusion to the possible investors about the actual financial condition of the company to show the under profitability or over profitability.

This study is divided into five chapters. First chapter is introduction chapter, and this chapter include background of the study, focus of the study, statement of the problem, objectives of the study, significance of the study, limitation of the is research methodology. This chapter includes research design, sources of data, population and sample, data analysis tools. Fourth chapter is data analysis and presentation. This chapter shows related data, table, and figure and describes of the study. Fifth and last chapter is discussion, conclusion and implications. References and annex are presented at the end of the study.

CHAPTER V
SUMMARY AND CONCLUCSION

In the previous chapter, the data analysis was done according to the objectives of the study. This chapter presents conclusion of the research. This chapter gives a brief overview of findings of the study. It also draws inferences and conclusion forms the finding which will lead to make generalizations. Contribution of the study was discussed in this chapter. Based on the study, some recommendations have also been made.

5.1 Summary

In Nepal, there are 21 commercial bank, 18 development bank, 17 finance companies and 69 micro finances are listed in NEPSE. The study is about commercial bank of Nepal. Among 21 commercial banks only three banks are selected i.e., Nepal Investment bank, Standard Chartered bank, and Himalayan bank. The objective of the study is to measure the risk and return of the selected commercial bank. To find the systematic and unsystematic risk related with return.to provide suggestion to investor for investing. Data of the last five years from FY 2015/16 to 2020/2021 are used for the study. Market price per share, dividend per share, market index and portfolio analysis are used to analyze the risk and returns of the commercial bank together with the NEPSE index.

The main focus point of the study is the current condition of commercial banks regarding the risk position. So, the objective of the study is to evaluate the risk and return of the commercial banks. For the detail analysis of commercial banks in Nepal, in this study, Nepal's three Commercial Banks data are collected through secondary sources and different data analysis tools are used. The study has been divided into five chapters. And took secondary data of last five consecutive years. In the first chapter, brief background of the study, significance of the study, statement of problem, objectives of the study, brief introduction of the sample banks, significance of the study and limitations of the study are included.

In the second chapter, review of literature has been made which includes conceptual review, review of major studies. During the study, different books, journals, articles, Previous studies, websites, reports are reviewed.

Third chapter consists of research design, population and sample analysis tools. The data are collected from secondary sources for the study. The secondary data are collected from annual reports of sample banks and Nepal Rastra Bank. After collecting the data from different source, it is analyzed by using different financial and statistical tools and techniques.

An attempt has been made to fulfill the objectives of the research work in the chapter four. In this chapter all the secondary data are complied, processed and tabulated. Graphical representation was used for better presentation of data. The researcher attempted to analyze the risk and return of commercial banks of Nepal on the basis of return on assets and return on equity by arithmetic mean, standard deviation coefficient of variation, covariance and beta of five years of research period.

In the chapter five, the summary, conclusion and recommendations are included. The summary of the study, conclusion drawn from the study are presented and necessary suggestions are given to the sample banks, Nepal Rastra Bank and Government for the better management of risk.

5.2 Conclusion

This study covers three Commercial Banks (i.e., NIBL, SCBL and HBL) and their audited data only for the last five years from 2015/16 to 2020/21 have been taken for the study. The available secondary data has been analyzed using various financial and statistical tools. So, the reliability of conclusion of this study is determined on the accuracy of secondary data.The result of risk and return analysis led to important conclusion.

Among these three banks, SCBL has the highest mean ratio whereas NIBL and HBL have the lower ratio. It indicated that SCBL is mobilizing its fund more satisfactorily than NIBL and HBL. It can be interpreted as SCBL has highest degree of investment in risky assets and NIBL and HBL have the lowest in comparison with SCBL. The low ratio shows low productivity and high degree of safety in liquidity and vice versa. The coefficient of variance of NIBL, SCBL and HBL are 0.19766 percent,0.26435 percent, and 0.22716 percent respectively. Among them, SCBL has the highest coefficient of variance and NIBL has the lowest coefficient of variance. The higher the coefficient of variance, the greater the level of dispersion around the mean. The lower the value of the coefficient of variance the more precise the estimate.

Whereas, HBL has the highest mean ratio whereas NIBL and SCBL, have the Lowerratio. The mean return of HBL is 15.567, which are higher than others with lowest standard deviation and coefficient of variation i.e., 1.663 and 0.1068 which seem HBL has better financial performance on the basis of return on equity. The mean return and standard deviation of NIBL are 12.862, 2.707 respectively, which are lower than others with highest coefficient of variation i.e., 0.2105. So, NIBL has lower financial performance. The mean return SCBL is 13.376 respectively, the standard deviation of SCBL is 2.717 respectively.

The coefficient of variance of NIBL, SCBL and HBL are 0.2105 percent,0.2031 percent, and 0.1069 percent respectively. Among them, NIBL has the highest coefficient of variance and HBL has the lowest coefficient of variance. It can be interpreted that SCBL has highest degree of deviation and highest degree of variation. The relationship between risk and return, if risk decreased than return also decreased and if risk increased than return also increased.

While portfolio analysis is considered, the portfolio risk is less than average risk, which showed investing in combination of banks reduced more risk than individuals on the basis of return on assets and on the basis of equity. The negative correlation coefficient of combination of banks diversified more risk than positive correlation of coefficient on the basis of return on assets and return on equity ratios.

The expected return of these three banks NIBL, SCBL and HBLfor the period of the study 0.02594, 0.11453 and 0.04286respectively. Similarly, deviation and coefficient of variance of NIBL, SCBNL and HBL are 0.09497, 0.34287 and 0.16994 and 3.66120, 1.48379 and 3.96479 respectively.

The expected return, standard deviation and coefficient of variance of market index are 2.59396, 0.09497 and 3.66120. The Covariance, correlation of coefficient and beta coefficient of NIBL bank with market index 0.01486, 1.66182 and 0.06704 respectively.

which seems good enough for the general investors to invest in this sector. The Covariance, correlation of coefficient and beta coefficient of SCBL bank with market index were 0.03957, 2.12399 and 0.17852respectively. which seems good enough for the general investors to invest in this sector. The Covariance, correlation of coefficient

and beta coefficient of HBL bank with market index were 0.01079, 0.13486 and 0.04868 respectively.

The systematic risk of NIBL, SCBL and HBL are 0.00100, 0.00706 and 0.00653 respectively and unsystematic risk is 0.00802, 0.11050 and 0.02835 respectively.

5.3 Implication

The focus of the study is to assess risk associated with return on common stock considering individual and private investors. The results of the study indicate that SCBL is effective in for both risk and returns for the investors. The suggestions for further researcher who want to conduct study in this topic are summarized.

It is believed that higher the return, higher will be the risk. Investment risks are better covered through a large and diversified portfolio. Investors need to diversify their funds to reduce risk. Proper construction of portfolio will reduce considerable potential loss which can be defined in terms of risk. Efficient portfolio depends on market movement. For the portfolio construction select the firm that have higher return with negative correlated firm. The return on assets ratio of HBL is lowest among the four sample banks. So, HBL is increasing net profit to get better financial performance. The return on equity ratio of HBL and NIBL are lowest among sample banks. So, HBL and NIBL are recommended to manage share and increase net profit to achieve better performance.

The covariance and beta-coefficient of the commercial banking sector with that of the market is also good enough for the general investors to invest in this sector. The result of correlation between risk and return is insignificant. The result is unsatisfactory because the sample size of the study is too small and the data for the study is used from annual report and website which may not be sufficient so it is suggested that for the further researcher will recommend including sufficient sample size. The study enable investors to put the return they can expect and the risk they may take into better perspective because of the people considered stock market investment on unrealistically optimistic or pessimistic expectations.

Further research could be conducted in other various service sectors and also in manufacturing sectors. Organized bodies SEBON & NEPSE should conduct meeting and gathering about common stock investment in Nepalese financial as well as other

markets. This study is all about commercial bank, researcher can research in the development bank too.

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APPENDICES

Appendix i: List of variables of four commercial banks relating net income, shareholders equity and total assets for the periods 2016/2017 to 2020/2021

Fiscal year	Bank	Net income	Net worth	Total assets
2016/2017	NIBL	3,558,605,809	32,234,911,628	227,930,126,922
2017/2018	NIBL	2,423,186,059	27,173,163,732	203,023,897,140
2018/2019	NIBL	3,324,112,936	25,579,196,000	185,814,988,230
2019/2020	NIBL	3,659,322,725	24,871,022,000	171,893,546,610
2020/2021	NIBL	3,114,131,140	18,707,884,000	150,818,033,554
2016/2017	HBL	2,998,623,045	20,132,616,428	178,490,925,886
2017/2018	HBL	2,586,722,710	17,588,960,504	155,884,918,983
2018/2019	HBL	2,763,848,475	15,995,076,214	133,152,142,073
2019/2020	HBL	1,875,610,467	14,138,756,027	116,462,301,380
2020/2021	HBL	2,178,234,893	12,328,242,189	107,255,479,966
2016/2017	SCBL	1,398,835,199	16,222,118,000	114,738,762,936
2017/2018	SCBL	1,987,390,942	15,102,495,000	116,438,273,521
2018/2019	SCBL	2,434,664,521	14,927,075,000	93,264,183,123
2019/2020	SCBL	2,189,898,090	13,925,502,000	84,031,554,906
2020/2021	SCBL	1,549,986,963	11,864,025,000	78,356,012,689

Sources: Annual Report of Sample Banks

Appendix ii: Calculation of mean, standard deviation, coefficient of variation, correlation

Coefficients, optimal weight, portfolio risk and return on return on assets.

Return on assets of NIBL in 2016/2017

$$\text{(ROANIBL in 2016/2017)} = \frac{\text{Netincome}}{\text{Totalassets}}$$

$$\text{(ROANIBL in 2016/2017)} = \frac{3{,}114{,}131{,}140}{150{,}818{,}033.554}$$

□□□□□□(ROANIBL in 2016/2017) =1.56%

Year	R_n	R_s	R_h	$(R_{n-\bar{R}_n})2$	$(R_{s-\bar{R}_s})2$	$(R_{h-\bar{R}_h})2$
1	1.56	1.22	1.68	0.034596	0.649636	0.017424
2	1.19	1.71	1.66	0.309136	0.099856	0.023104
3	1.79	2.61	2.08	0.001936	0.341056	0.071824
4	2.13	2.61	1.61	0.147456	0.341056	0.040804
5	2.06	1.98	2.03	0.1024	0.002116	0.047524
Total	8.73	10.13	9.06	0.595524	1.434224	0.847096

N=5

Arithmetic means of NIBL

$$\bar{R}_{NIBL} = \frac{\sum R_n}{n}$$

$$= \frac{8.73}{5}$$

$$= 1.746$$

Standard Deviation of NIBL

$$\sigma\text{NIBL} = \sqrt{\frac{\sum(x-x)^2}{n}}$$

$$= \sqrt{\frac{0.595524}{5}}$$

$$= 0.345116$$

Coefficient of variation of NIBL

$$(\text{C.V}_{\text{NIBL}}) = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.345116}{1.746}$$

$$= 0.19766$$

Appendix iii: Covariance &Correlation Coefficient between NIBL and SCBNL

Covariance between stock N&S (Cov_{NS}) $= \frac{\sum(r_{n-\bar{r}_n})(r_{s-\bar{r}_s})}{n}$

$= \frac{0.567404}{5}$

$= 0.113481$

Correlation between stock N&S $\rho_{NS} = \frac{\text{cov(NIBL,SCBNL)}}{\sigma\text{NIBL}\sigma\text{SCBNL}}$

$= \frac{0.113481}{0.345116 \times 0.535579}$

$= \frac{0.113481}{0.1848369}$

$= 0.613952$

Optimal weight of NIBL& SCBL

$$(W_{NIBL}) = \frac{\sigma^{2\ SCBL - COV_{NIBL-SCBL}}}{\sigma^{2\ NIBL} + \sigma^{2\ SCBNL - 2COV_{NIBL,SCBL}}}$$

$= \frac{0.286845 - 0.113481}{0.1191048 + 0.286845 - 2(\text{O}.113481)}$

$= \frac{0.173364}{0.1789878}$

$= 0.97$

Weight of SCBNL

(W_{SCBL} = 1- W_{NIBL})

= 1-0.97

= 0.03

Return on portfolio of NIBL and SCBNL

RP = $W_{NIBL}\bar{X}_{NIBL} + W_{SCBL}\bar{X}_{SCBL}$

= 0.97* 1.746 + 0.038* 2.026

= 1.69362 + 0.06078

= 1.754

Standard Deviation of NIBL and SCBNL on Portfolio

$\sigma_P = \sqrt{W_{NIBL2}\,\sigma_{NIBL2} + W_{SCBNL2}\,\sigma_{SCBNL2} + 2\text{Cov}_{NIBL,\,SCBNL}W_{NIBL}W_{SCBNL}]}$

$= \sqrt{(0.97)^2 * 0.1191048 + (0.03)^2 * 0.286845 + 2(0.113481) * 0.97 * 0.03}$

$= \sqrt{0.1120657 + 0.000258 + 0.0066046}$

$= \sqrt{0.1189283}$

= 0.3448598

Appendix iv :Calculation of mean, standard deviation, coefficient of variation, correlation coefficient, optimal weight, portfolio return and risk under Return on Equity

Return on Equity of NIBL in 2016/2017

$$(\text{ROE}_{\text{NIBL}} \text{in } 2016/2017) = \frac{\text{NetIncome}}{\text{Shareholder's equity}}$$

Year	R_n	R_s	R_h	$(R_{n-\bar{R}_n})2$	$(R_{s-\bar{R}_s})2$	$(R_{h-\bar{R}_h})$
1	11.04	8.62	14.89	3.31968	22.61954	0.45428
2	8.92	13.16	14.71	15.53936	0.04666	0.72932
3	12.99	16.31	17.28	0.01638	8.60836	2.94466
4	14.71	15.73	13.27	3.41510	5.54132	5.26244
5	16.65	13.06	17.67	14.34894	0.09986	4.43524
Total	64.31	66.88	77.82	36.6395	36.9157	13.8259

Arithmetic Mean of NIBL

$$\overline{X}_{\text{NIBL}} = \frac{\sum R_n}{N}$$

$$= \frac{64.31}{5}$$

$$= 12.862$$

Standard Deviation of NIBL

$$\sigma_{\text{NIBL}} = \sqrt{\frac{\sum(r_{n-\bar{r}_n})2}{n}}$$

$$= \sqrt{\frac{36.6395}{5}}$$

$$= 2.7070$$

Coefficient of variation of NIBL

$$\text{C.V}_{\text{NIBL}} = \frac{\sigma}{X}$$

$$= \frac{2.707}{12.862}$$

$$= 0.2105$$

Correlation Coefficient between NIBL and SCBNL

$$\text{Correlation between stock N\&S } (\rho_{NS}) = \frac{\text{COV}_{(\text{NIBL,SCBL})}}{\sigma_{\text{NIBL}}\sigma_{\text{SCBL}}}$$

$$= \frac{2.60914}{2.707 * 2.7172}$$

$$= 0.35472$$

Optimal weight of NIBL& SCBL

$$W_{NIBL}=\frac{\sigma^2{}_{SCBL}-COV_{NIBL,SCBL}}{\sigma^2{}_{NIBL}+\sigma^2{}_{SCBL}-2COV_{NIBL,SCBL}}$$

$$=\frac{7.3831-2.60914}{7.32789+7.3831-2*2.60914}$$

$$=\frac{4.77396}{9.49271}$$

$$=0.50$$

Weight of SCBNL

W_{SCBL}= 1- W_{NIBL}

= 1-0.50

= 0.50

Return on portfolio of NIBL and SCBNL

$$R_P=W_{NIBL}\,\overline{X}_{NIBL}+W_{SCBL}\,\overline{X}_{SCBL}$$

= 0.50* 12.862 + 0.50* 13.376

= 6.4310 + 6.6880

= 13.1190

Standard Deviation of NIBL and SCBNL on Portfolio

$$\sigma_P=\sqrt{W_{NIBL}^2\sigma_{NIBL}^2+W_{SCBL}^2\sigma_{SCBL}^2+2COV_{NIBL,SCBL}W_{NIBL}\,W_{SCBL}\ ]}$$

$$=\sqrt{(0.50)^2(7.32789)+(0.50)^2(7.3831)+\ 2*2.60914*0.50*0.50}$$

$$=\sqrt{1.8319725+1.845775+1.30457}$$

$$=\sqrt{4.9823175}$$

= 2.2321105

Appendix v: Calculation of R Nepal Investment Bank Limited (NIBL)

Fiscal Year	MPS (in RS)	Total Dividend	R
2016/2017	770	192.5	0
2017/2018	621	136.62	-0.016077922
2018/2019	519	44.12	-0.093204509
2019/2020	431	23.71	-0.123872832
2020/2021	460	15.59	0.103457077
Total			-0.129698186

Where,
R is calculation with the use of following formula

$$R = \frac{D_{t+}\left(P_{t-P_{t-1}}\right)}{P_{t-1}}$$

The detail calculations of R for each fiscal year:

FY 2017/2018

$$R = \frac{136.62+(621-770)}{770}$$

$$= -0.016077922$$

FY 2018/2019

$$R = \frac{44.12+(519-621)}{621}$$

$$= -0.093204509$$

FY 2019/2020

$$R = \frac{23.71+(431-519)}{519}$$

$$= -0.123872832$$

FY 2020/2021

$$R = \frac{15.59+(460-431)}{431}$$

$$= 0.103457077$$

Expected Return $(\bar{R}) = \frac{\sum R}{N}$

$$= \frac{-0.129698186}{5}$$

$$= -0.025939637$$

Appendix vi: Market Index

Fiscal Year	NEPSE Index (NI)	R_m
2016/2017	1582.67	0
2017/2018	1212.36	-0.233978024
2018/2019	1259.01	0.038478670
2019/2020	1362.34	0.082072422
2020/2021	2883.38	1.116490744
Total		1.003063812

Expected Return

$$(Rm) = \frac{\text{Ending Index} - \text{Beginning Index}}{\text{Beginning Index}}$$

Fiscal Year 2017/2018

$$(Rm) = \frac{1212.36 - 1582.67}{1582.67}$$

$$= -0.233978024$$

Fiscal Year 2018/2019

$$= \frac{1259.01 - 1212.36}{1212.36}$$

$$= 0.038478670$$

Fiscal Year 2019/2020

$$= \frac{1362.34 - 1259.01}{1259.01}$$

$$= 0.082072422$$

Fiscal Year 2020/2021

$$= \frac{2883.38 - 1362.34}{1362.34}$$

$$= 1.116490744$$

$$(\bar{R}m) = \frac{\sum R_m}{N}$$

$$= \frac{1.003063812}{5}$$

$$= 0.20061$$

Appendix vii: Analysis of Co-Variance (Cov_{jm}), Correlation of coefficient (R_{jm}) and Beta (B_j) of NIBL

Fiscal Year	(Rj- $\overline{Rj}$	(Rm- $\overline{Rm}$)	(Rj- Rj̄) (Rm- Rm̄)
2016/2017	0.02594	-0.20061	-0.05204
2017/2018	-0.04202	-0.43459	0.01826
2018/2019	-0.11914	-0.16213	0.01932
2019/2020	-0.14981	-0.11854	0.01776
2020/2021	0.07752	0.91588	0.07100
Total			0.07430

Source: - Appendix-IV and V

The detail calculation of $(R_j-\bar{R}_j)$ and $(R_m-\bar{R}_m)^2$ for each fiscal year are given in Annex.

Co- variance (Cov_{jm}) $= \frac{\left(R_{j-\bar{R}_j}\right)\left(R_{m-\bar{R}_m}\right)}{n}$

$= \frac{0.07430}{5}$

= 0.01486

Correlation of coefficient (Rjm) $= \frac{COV_{JM}}{\sigma_J * \sigma_M}$

$= \frac{0.07430}{0.09497 * 0.47081}$

$= \frac{0.07430}{0.04471}$

= 1.66182

Beta of NIBL,

Beta (bj) $= \frac{COVR_{JR_m}}{\sigma_{M2}}$

$= \frac{0.01486}{0.22166}$

= 0.06704

Systematic Risk =$bj^2\sigma m^2$
$=(0.06704)^2*(0.47081)^2$

= 0.00100

Unsystematic Risk = Total Risk – Systematic Risk

$=\sigma j^2 - bj^2\sigma m^2$

$= (0.09497)^2 - (0.06704)^2 * (0.47081)^2$

= 0.00902– 0.00100

= 0.00802

Appendix viii: Analysis of Co-Variance (Cov_{jm}), Correlation of coefficient (R_{jm}) and Beta (B_j) of NIBL

Fiscal Year	(Rj- $\overline{Rj}$	(Rm- $\overline{Rm}$)	(Rj- Rj̄) (Rm- Rm̄)
2016/2017	0.02594	-0.20061	-0.05204
2017/2018	-0.04202	-0.43459	0.01826
2018/2019	-0.11914	-0.16213	0.01932
2019/2020	-0.14981	-0.11854	0.01776
2020/2021	0.07752	0.91588	0.07100
Total			0.07430

The detail calculation of $(R_j-\bar{R}_j)$ and $(R_m-\bar{R}_m)_2$ for each fiscal year are given in Annex.

Co- variance (Cov_{jm}) $= \frac{\left(R_{j-\bar{R}_j}\right)\left(R_{m-\bar{R}_m}\right)}{n}$

$= \frac{0.07430}{5}$

= 0.01486

Correlation of coefficient (Rjm) $=\frac{COV_{JM}}{\sigma_{J*}\sigma_M}$

$= \frac{0.07430}{0.09497*0.47081}$

$= \frac{0.07430}{0.04471}$

= 1.66182

Beta of NIBL,

Beta (bj) $=\frac{COVR_{JR_m}}{\sigma_{M2}}$

$$= \frac{0.01486}{0.22166}$$

= 0.06704

Systematic Risk =$bj^2\sigma m^2$
$=(0.06704)^2*(0.47081)^2$

= 0.00100

Unsystematic Risk = Total Risk – Systematic Risk

$$=\sigma j^2 - bj^2\sigma m^2$$

$$= (0.09497)^2 - (0.06704)^2 * (0.47081)^2$$

= 0.00902– 0.00100

= 0.00802

Here, the covariance is 0.01486, correlation of coefficient is 1.66182 and beta-coefficients is 0.06704 of NIBL with comparing of the market which seems good enough for the general investors to invest in this sector.

Appendix ix: Analysis of Co-Variance (Cov_{jm}), Correlation of coefficient (R_{jm}) and Beta (B_j) of SCBL

Fiscal Year	(Rj- $\bar{R}j$)	(Rm- $\bar{R}m$)	(Rj- $\bar{R}j$) (Rm- $\bar{R}m$)
2016/2017	-0.11453	-0.20061	0.02298
2017/2018	-0.72798	-0.43459	0.31637
2018/2019	-0.00798	-0.16213	0.00129
2019/2020	-0.12301	-0.11854	0.01458
2020/2021	-0.17182	0.91588	-0.15737
			0.19785

The detail calculation of (R_j-$\bar{R}_j$) and ($R_m - \bar{R}_m$) for each fiscal year are given in Annex

Co- variance (Covjm) =$\frac{\left(R_{J-\bar{R}_J}\right)\left(R_{M-\bar{R}_M}\right)}{N}$

$$=\frac{0.19785}{5}$$

= 0.03957

Correlation of coefficient (Rjm)= $\frac{COV_{JM}}{\sigma_J \sigma_M}$

$$= \frac{0.03957}{0.34287*0.47081}$$

$$= \frac{0.03957}{0.01863}$$

= 2.12399

Beta of SCBL,

Beta (bj) $= \frac{COVR_{JR_M}}{\sigma_{M2}}$

$= \frac{0.03957}{0.22166}$

= 0.17852

Systematic Risk = $bj^2\sigma m^2$

$= (0.17852)^2 * (0.47081)^2$

= 0.03187*0.22166

= 0.00706

Unsystematic Risk = Total Risk – Systematic Risk

$= \sigma j^2 - bj^2\sigma m^2$

$= (0.34287)^2 - (0.17852)^2*(0.47081)^2$

= 0.11756 – 0.00706

= 0.1105

Here, the covariance is 0.03957, correlation of coefficient is 2.12399 and beta-coefficients is 0.17852 of SCBL with comparing of the market which seems good enough for the general investors to invest in this sector.

Appendix x: Analysis of Co-Variance (Cov_{jm}), Correlation of coefficient (R_{jm}) and Beta (B_j) of HBL

Fiscal Year	**(R_j- $\bar{R}_j$)**	**(R_m- $\bar{R}_m$)**	**(R_j- $\bar{R}_j$) (R_m- $\bar{R}_m$)**
2016/2017	-0.04286	-0.20061	0.00860
2017/2018	-0.35387	-0.43459	0.15379
2018/2019	0.07917	-0.16213	-0.01284
2019/2020	-0.00591	-0.11854	0.00070
2020/2021	-0.10516	0.91588	-0.09631
Total			0.05394

The detail calculation of (R_j-$\bar{R}_j$) and ($R_m - \bar{R}_m$) for each fiscal year are given in Annex.

Covariance (Covjm) $= \frac{\left(R_{j-\bar{R}_j}\right)\left(R_{m-\bar{R}_m}\right)}{N}$

$= \frac{0.05394}{5} = 0.0107$

Correlation of coefficient (Rjm) $= \frac{COVJ_M}{\sigma_{J\sigma_M}}$

$= \frac{0.01079}{0.16994*0.47081}$

$= \frac{0.01079}{0.08001}$

= 0.13486

Beta of HBL,

$$\text{Beta(bj)} = \frac{COVR_{JR_M}}{\sigma_{M2}}$$

$$= \frac{0.01079}{0.22166}$$

$$= 0.04868$$

Systematic Risk = $bj^2\sigma m^2$

$$= (0.04868)^2(0.47081)^2$$

$$= 0.00053$$

Unsystematic Risk = Total Risk – Systematic Risk

$$= \sigma j^2 - bj^2\sigma m^2$$

$$= (0.16994)^2 - (0.04868)^2(0.47081)^2$$

$$= 0.02835$$

Here the covariance is 0.01079, correlation of coefficient is 0.13486 and beta-coefficients is 0.04868 of HBL with comparing of the market which seems good enough for the general investors to invest in this bank.