RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS IN NEPAL

(With Reference to EBL, KBL and NIBL)

Submitted By:

NIRU BAJRACHARYA

Shanker Dev Campus

Campus Roll No.: 2135/065

T.U. Regd. No.: 7-2-444-57-2004

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RECOMMENDATION

This is to certify that the thesis

Submitted by:

NIRU BAJRACHARYA

Entitled:

RISK AND RETURN ANALYSIS OF COMMERCIAL BANKS IN NEPAL

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has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

…….	…….	…….
Lecturer Triratna Manandhar	**Prof. Dr. Kamal Deep Dhakal**	**Asso. Prof. Prakash Singh Pradhan**
(Thesis Supervisor)	**(Head, Research Department)**	**(Campus Chief)**

VIVA-VOCE SHEET

We have conducted the viva –voce of the thesis presented

by:

NIRU BAJRACHARYA

Entitled:

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And found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for the degree of

Master of Business Studies (MBS)

Viva-Voce Committee

Head, Research Department ……

Member (Thesis Supervisor) ……

Member (External Expert) ……

DECLARATION

I hereby declare that the work reported in this thesis entitled " **Risk and Return Analysis of Commercial Banks in Nepal (With Reference to EBL, KBL and NIBL)"** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the degree of Master of Business Studies (MBS) under the supervision of **Lecturer Triratna Manandhar** of Shanker Dev Campus.

……..

Niru Bajracharya

Shanker Dev Campus

Campus Roll No.: 2135/065

T.U. Regd. No.: 7-2-444-57-2004

2nd Year Symbol No.: 390808

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This thesis entitled ”*Risk and Return Analysis of Commercial Bank in Nepal*” is a Master Degree thesis prepared as partial fulfillment of MBS degree course under Tribhuvan University of Nepal. It aims to analysis the comparative risk and return position of sample banks of Nepal.

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I am alone responsible for any errors and deficiencies and apologize for any mistakes committed in this work.

Niru Bajracharya

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER- I
INTRODUCTION

1.1 Background of the Study

Nepal is a small landlocked country located between China and India, two huge countries with vibrant economies. It spreads over an area of 147,181 sq km. and contains terrains that range from around 200 m. to the height of Mt. Everest. Politically, it has been designated as a Federal Democratic Republic since May 2008.

Nepal, the birth place of Lord Buddha, the home for exotic biodiversity, tallest mountain in the World – Everest, a landlocked agro-based economy with low industrial base, the most preferred tourist destination in South East Asia is an underdeveloped country having weak economy, instable politics, insecure social and business environment.

The tiny landlocked country in South Asia, Nepal is among the poorest and remains as one of the 48th least developed countries in the world, with almost one-quarter of its population living below the poverty line. Agriculture is the mainstay of the economy, providing a livelihood for three-fourths of the population and accounting for about one-third of GDP. The industrial activity mainly involves the processing of agricultural products, including pulses, jute, sugarcane, tobacco, and grain. The country's per capita income is one of the lowest in the world as compared to other Asia pacific least developed countries and other least developed countries. The country's per capita income has been growing at little over two percent per annum at a situation when more than two-fifth of the countries population is in penury. Additional challenges to Nepal's growth include its landlocked geographic location, civil strife and labor unrest, and its susceptibility to natural disaster.

Nepal is a developing country. Economy of the country is growing very slowly and known as a very poor country. The country's economy is based on agriculture sector. Agriculture is still the main economy of the country. Depending upon only on the agriculture, Nepal could not be able to solve the major problem like poverty. Therefore, the non-agriculture sectors should also be given priority. The development

of such non-agriculture sectors can help in the economic development and problems of employment can be solved to some extent. Hence, for this, various industries, financial institutions, health and educational enterprises should be established.

Development of any country largely depends upon the economic development and economic development is only possible through the development of financial system. The main responsibility of the financial sector is transmitting saving into productive investment. A well Functioning financial system allocates saving to the best productive investment. This crucial role establishes the financial system to the brain of the economy. Both in developed and developing countries, it is empirically proven that the growth and stability of economy depends on the capacity and efficiency of her financial system.

Financial sector is required for proper mobilization of investable resources from one sector to another and plays a pivotal role in bridging a gap between deficit units and surplus units. Efficient financial sector mobilizes saving from a broad variety of sources and allocating them into more productive uses, thus bridging benefits to both investors and investee and to the economy overall. In the process of reinvesting these savings, they successfully deal with one fundamental factor i.e. risk.

Financial institution facilitates the saving and borrowing process and maximizes the wealth of the institutions owners. It plays an important role in the money and capital market. Financial institutions are business organization that acts as mobilizer and depositories of saving and as purveyors of credit or finance. They also provide various financial services to the community.

Financial institutions in Nepal operates under the Central Bank i.e. Nepal Rastra Bank Limited which has important role in development and growth of financial market. The NRB act provides more autonomy to the central Bank in the spheres of financial sector policy formulation and increases its capacity for effective policy implementation. There are 32 commercial banks, 88 development banks, 75 finance companies, various Co-operatives and NGOs.

In today's market consumers are treated as king and consumers are now quality oriented and they prefer qualities goods. Technological changes has made easier to give many new and surprising materials to the market. Organizations that do not have new Technology cannot compete in the market. But technologies are very costly, so on organization should raise enough money to get the new technologies. Business institution if it is sole generally does not dare to get the funds finances because it is very risky for a single person to bear unlimited liability; single person rarely has enough money to invest also. So business organizations are generally limited companies with many shareholders or sometime partnership firm. Partnership firms also many times can't manage funds so in modern business, public limited companies are one and only one the alternate for investing huge amounts, advent of security market has successfully served the pubic limited companies to raise funds and then invest on the business. Every shareholder has limited liability up to his ownership amount only or the amount of shares he holds. Rest of the financing may be from financial institutions line Banks, Finance Companies etc.

Investment is differentiated with gambling, as it is the systematic and scientific way of investment is contribution to the future return. Investment if systematic and scientific way of using excess fund from income to gain expected return bearing lower level of risk. Common definition says that contribution of present value for future value if investment or it is search of certainty within the uncertainty. An investment is a commitment of money that expects to generate additional money. Every investment entails some degree of risk. It requires a present sacrifice for a future uncertain benefit. What motivates a person or an organization to buy securities, rather than spending their money immediately? The most common answer is saving. Another motivating issue is desire to increase wealth, i.e. make money grew. Sometimes, the desire to become wealthy can make you willing to take big risks. The simplest meaning of the investment is to employ available fund to generate more money in future. When investors make an investment, they expect the positive returns for bearing the certain level of risk. No one can get return without bearing risk. The investors said to be rational only when they earn maximum return at minimum risk. So risk and returns are the key factors to be considered while making investment. In order to minimize the risk at the given rate

of return, rational investors invest in collection of investment securities called portfolio. Investors should have sound knowledge of portfolio management. Investment made in securities with different risk and return characteristics helps to diversify the risk by compensating loss occurred in one security by the return in another security. Portfolio is a financial tool of diversifying the risk.

1.1.1 Commercial Banks in Nepal

Commercial banks means a bank which operates currency exchange transactions, accept deposits, provides loan performs dealing relating to commerce except the banks which have been specified for the cooperative, agriculture, industry or other similar specific objectives.

Nepal Bank Limited is the first commercial bank established in 1994 under the Nepla bank Act 1993. Under Banijya Bank Act, 2021 the government established ”Rastriya Banijya Bank” with investment capital employed by government resources. Again the government established the third bank” Agriculture Development Bank” which is fully owned by government for the purpose of developing agriculture.

When Nepal Government permitted the establishment of foreign Joint Venture Bank in early 1980s, Nepal Arab Bank Limited(Now Nabil Bank ltd) was established in 2041 B.S. as the first joint venture bank. Similarly other joint venture banks like Nepal Indosuez Bank Limited(now Nepal investment bank ltd), Nepal Grind lays Bank Limited(now Standard Chartered Bank ltd) were opened. After restoration of democracy, elected government adopted the liberalization and market oriented policy. As a results, number of joint venture banks and commercial banks like Himalayan Bank Ltd, Nepal State Bank of India Ltd, Nepal Bangladesh bank ltd, Bank of Kathmandu Ltd, Everest Bank ltd., Nepal bank of Cylon Ltd(now Nepal Credit and Commercial bank ltd) etc has increased dramatically.

At present Nepal Rastra bank is the central bank of Nepal that formulates different plans and policies to control and promote the functions carried out by other banks and financial institutions.

At present, there are 32 licensed commercial Banks in Nepal. These commercial banks have given a new horizon to the financial sector of Nepal regarding healthy competition, foreign capital investment and technology transfer as well as skill development through research.

1.1.2 Profile of Sample Banks

Everest Bank Limited

Catering to more than 5 lacks customers today, Everest Bank Limited (EBL) is a name we can depend on for professionalized and efficient banking services. Founded in 1994, the bank has been one of the leading banks of the country and has been catering its services to various segments of the society since then. With clients from all walks of life, the bank has helped develop the nation corporately, agriculturally and industrially.

Punjab National Bank (PNB), joint venture partner (holding 20% equity in the bank) is the largest nationalized bank in India. With its presence virtually in all the important centers at India and over 6000 ATM counters, Punjab National Bank offers a wide variety of banking services which include corporate and personal banking, industrial finance, agricultural finance, financing of trade and international banking. For its excellence in banking services, it was recently awarded the "Best Bank Award 2011" amongst all banks in India by the leading corporate magazine, Business India.

Everest Bank Limited (EBL) provides customer-friendly services through its Branch Network and all it's the branches are connected through Anywhere Branch Banking System (ABBS), which enables customers for operational transactions from any branches. The bank has 47 Branches, 60 ATM Counters and 27 Revenue Collection Counters across the country making it a very efficient and accessible bank for its customers, anytime, anywhere.

The bank has been conferred with “Bank of the Year 2006, Nepal” by the Banker, a publication of financial times, London. The bank was bestowed with the “NICCI Excellence award” by Nepal India chamber of commerce for its spectacular performance under finance sector. Recognizing the value of offerings a complete range of services, the bank is pioneered in extending various customer friendly

products such as Home Loan, Education Loan, EBL Flexi Loan, EBL Property Plus (Future Lease Rental), Home Equity Loan, Vehicle Loan, Loan Against Share, Loan Against Life Insurance Policy and Loan for Professionals.EBL was one of the first bank to introduce Any Branch Banking System (ABBS) in Nepal.EBL has introduced Mobile Vehicle Banking system to serve the segment deprived of proper banking facilities through its Birtamod Branch, which is the first of its kind. EBL has introduced branchless banking system first time in Nepal to cover unbanked sector of Nepalese society. EBL is first bank that has launched e-ticketing system in Nepal. EBL customer can buy yeti airlines ticket through internet.

Table 1.1

Present Capital Structure of EBL

(Rs. in Million)

Share Capital and Reserves	Amount in Rs.
Authorized capital	2,00,00,00,000
Issued capital	1,281,406,500
Paid p capital	1,279,609,490

Source: Annual Report of Everest Bank Ltd, 2012

Table 1.2

Promoters /Shareholders Share Holding Pattern

(In Percentage)

Subscription	% Holding
Promoters/ shareholders	50%
Punjab national Bank	20%
General Public	30%
Total	100%

Source: Annual Report of Everest Bank Ltd, 2012

Kumari Bank Limited

Kumari Bank Limited, came into existence as the fifteenth commercial bank of Nepal by starting its banking operations from Chaitra 21, 2057 B.S (April 03, 2001) with an objective of providing competitive and modern banking services in the Nepalese financial market.

Kumari Bank Ltd has been providing wide - range of modern banking services through 29 points of representations located in various urban and semi urban part of

the country, 20 outside and 9 inside the valley. The bank is pioneer in providing some of the latest / lucrative banking services like E-Banking and SMS Banking services in Nepal. The bank always focus on building sound technology driven internal system to cater the changing needs of the customers that enhance high comfort and value. Similarly the bank has been providing 365 days banking facilities, extended banking hours till 7 PM in the evening, Utility Bill Payment Services, Inward and Outward Remittance services, Online remit Services and various other banking services. Visa Electron Debit Card, which is accessible in entire VISA linked ATMs (including 35 own ATMs) and POS (Point of Sale) terminals both in Nepal and India, has also added convenience to the customers. The bank has been able to get recognition as an innovative and fast growing institution striving to enhance customer value and satisfaction by backing transparent business practice, professional management, corporate governance and total quality management as the organizational mission.

The key focus of the bank is always center on serving unfulfilled needs of all classes of customers located in various parts of the country by offering modern and competitive banking products and services in their door step. The bank always prioritizes the priorities of the valued customers.

Table 1.3

Present Capital Structure of Kumari Bank

(Rs. in Million)

Share Capital and Reserves	Amount in Rs
Authorized Capital	1,600,000,000
Issued and paid up capital	1,485,000,000

Source: Annual Report of Kumari Bank, 2011

Table 1.4

Share Holding Pattern

(In Percentage)

Subscription	% Holding
Promoters share holders	70%
General public	30%
Total	100%

Source: Annual Report of Kumari Bank, 2011

Nepal Investment Bank Limited

Nepal Investment Bank Ltd. (NIBL), previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital of NIBL) was Credit Agricole Indosuez, a subsidiary of one the largest banking group in the world. With the decision of Credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, had acquired on April 2002 the 50% shareholding of Credit Agricole Indosuez in Nepal Indosuez Bank Ltd.

The name of the bank has been changed to Nepal Investment Bank Ltd. upon approval of bank's Annual General Meeting, Nepal Rastra Bank and Company Registrar's office with the following shareholding structure. A group of companies holding 50% of the capital Rashtriya Banijya Bank holding 15% of the Capital. Rashtriya Beema Sansthan holding the same percentage. The remaining 20% being held by the General Public (which means that NIBL is a Company listed on the Nepal Stock Exchange).

We believe that NIBL, which is managed by a team of experienced bankers and professionals having proven track record, can offer you what you're looking for. We are sure that your choice of a bank will be guided among other things by its reliability and professionalism.

Table 1.5

Present capital Structure of Nepal Investment Bank Ltd

(Rs. in Million)

Share capital And Reserves	Amount in Rs
Authorized capital	4,000,000,000
Issued and paid up capital	2,409,097,700

Source: Annual Report of NIBL, 2011

1.2 Focus of the Study

The ultimate investment objective is to systematically maximize the investor's wealth. Wealth can be defined as the positive difference between assets and liabilities. The risks and returns on investment are positively related to each other i.e an investor seeking higher returns must be willing to face higher level of risks and vice &versa.

An investor has different objectives depending upon age, income, planned. Activities and attitudes about risk. So, investing wisely is the function of every investor's specific needs and goals. It is not appropriate for an investor's objective in making a lot of money recognizing the possibility of losses as well. Many times, investors blindly invest their money with the hope of getting good returns from their investable funds but due to many reasons like change in the investor's objective, age, occupation, income, tax, time horizon, tolerance in risk and many other special circumstances, they lose their hard earning while investment made without analyzing the risk and return involved in the stocks. On the other hand, increase in financial market, concept and principle a lot of other financial alternatives have mushroomed.

At present unhealthy competition environment has also been seen, it is not only difficult but very difficult to determine which financial institution is very god or bad. So, to get the maximum return from a minimum level of risk, the investor should. Wisely diversify its investment by means of portfolio creation with systematically analysis of risk and return.

So, the main focus of the study is to measure and make both technical and fundamental analysis of the financial performance of the listed commercial banks, their risks and returns and optimal portfolio creation in order to me sound investment decision.

1.3 Statement of the Problem

Generally, Investor purchase financial assets such as stocks or bonds for their desire to increase their investment wealth i.e earn positive rate of return on the investment .Risk and return analysis is worked out to identify the sustainable position of any organization and financial institution. Capital market in Nepal has grown rapidly after the establishment of security market named NEPSE within the short period of time. However, the attitude and the knowledge of the investors have not changed yet. Investors usually lack any idea of risk and return because most of the investors in Nepalese market appears to be least familiar with the financial market, so they can make wrong investment decisions based on the hunches rather than on the real term analysis. Though some investors follows the rational investment procedures and portfolio analysis but they still lack perfect awareness about the risk and return

factors. Without getting theoretical knowledge about risk associated with investment, most of the investors are making investment on the stocks. This may be termed as improper practice. This situation motivates the present researcher to undertake a research project entitled" Risk and Return Analysis of selected commercial banks in Nepal".

We normally see that is banks issues shares, there becomes huge demand rather than the supply but is other sectors like hotels or insurance companies and manufacturing companies issue new shares, the least the investors desire to invest their money. In Nepalese context most of the people deposit their saving in banks and other financial institutions rather than investing the fund in financial assets available in the capital markets like investment in shares, debentures and other derivative securities. Many investors are not rational towards their investment decision. They don't know how to make rationale investment by assessing the risk percept in the investment and the level of return to compensate the percept risk. In Nepal, most of the financial institution issues only the common stock and capital market is also dominated by the trading of the stocks. On the basis of this, some questions regarding this research is as below,

- What is the level of systematic risk on common stocks of commercial banks?
- What is the level of unsystematic risk on common stocks of commercial banks?
- What is the investors perception on the risk and return on common stocks of commercial banks ?
- What is the comparative analysis of risk and return of commercial banks viz, Everest Bank ltd, Kumari Bank Limited , Nepal Investment Bank ?
- How an individual investor be aware about the scale and intensity of risk?
- What are the criteria for evaluation of riskiness of assets?
- How can one make higher returns by assuming low risk?
- How risk and return are correlated?
- Which bank can be selected on the basis of measurement of risk and return?

1.4 Objectives of the Study

The main objective of this study is to analyze the risk, return and other relevant variables that help in making decision about investment on securities of Everest Bank,

kumari Bank and Nepal Investment Bank. The study also target to determine whether the shares of commercial banks are correctly priced or not by analyzing the required rate of return using Capital Assets pricing Model (CAPM). Some of core objectives are;

- To analyze the systematic and unsystematic risk of selected commercial banks.
- To analyze level of risk and return of selected commercial banks.
- Various factors affecting the risk and returns of commercial banks.
- Current position of banking sector regarding risk and returns.
- To determine whether the shares of commercial banks are overpriced/underpriced by analyzing risk and return characteristics of the individual shares.
- To provide suggestions and recommendations for improvement on the basis of findings.

1.5 Significance of the Study

In the context of Nepal, the capital market is growing very slowly. The investors lacks proper knowledge and awareness due to which they are investing in the risky stocks. Investment on capital market is just by psychological or just like shooting in the dark.

- Risk and return is inseparable part in investment analysis. This research will help to point out the risk and return of commercial banks of Nepal. It provides theoretical as well as practical guidelines about making a choices of stocks and bonds on the basis of risk and returns.
- This study will give information about Nepalese capital market by analyzing risk and return and will definitely contribute to increase the analytical power of the investors. This study is equally beneficial to all the persons who are directly or indirectly related to the Nepalese capital market.
- Analysis of comparative study among various banks will help investors to know about the position of financial performance.
- This study is not only to fulfill M. B. S. level course of T.U, but also to provide some knowledge about the Nepalese stock market development along with the ideas to minimize the risk on stock investment.
- The analysis of risk and return is a significant managerial decision from the view point of investors. It influences the shareholders risk and return.

Consequently, the risk and return analysis influences the market price of the stock, by making it an appropriate level. Apart from this, the study will be matter of interest for academicians, students, researchers, teachers or persons practicing in the finance field.

1.6 Limitations of the Study

There are some limitations of the study some of which are:

- The study is limited to secondary data only, i.e. financial statements, annual reports of related banks and NRB, related books, various websites and articles etc
- The study involves the data of at least 5 years only and such limited data are used as hypothesis to generalize the overall banking sector.
- Although there are many commercial banks the study confines to only three banks.
- This study is partial fulfillment of MBS program, so there is a time and resources constraints to complete the study in given time frame.

1.7 Organization of the Study

This study regarding Risk and Return analysis of commercial banks has been organized into five chapters, namely Introduction, Review of Literature, Research Methodology, Presentation and Analysis of Data, and finally Summary, Conclusion and Recommendation.

Chapter I: Introduction

This chapter introduces the general background of Nepalese economy, financial institution, commercial banks in Nepal, brief introduction of sample banks, statement of problem, research objective , significance of study, limitation of the study, research methodology and organization of the study.

Chapter II: Review of Literature

This chapter involves review of previous articles, concepts, theories, studies and research made by earlier academicians or researchers. It involves findings and

conclusions made on the related topics and helps us to contribute and make new findings on their basis.

Chapter III: Research Methodology

This chapter explains the research methodology used for the study including research design, population and sample, sources and type of data, data processing procedure and different methods of data analysis.

Chapter IV: Presentation and Analysis of Data

This chapter involves the presentation, tabulation, analysis as well as the interpretation of the study using various statistical tools and techniques.

Chapter V: Summary, Conclusion and Recommendation

This chapter deals with the summary and conclusions drawn from previous four chapters and also recommend for the improvement and development of related banks as well as banking sector of Nepal.

Bibliography, Appendix and other supporting documents are also involved at the end of the study.

CHAPTER- II

REVIEW OF LITERATURE

The present thesis aims to find the Risk and Return position of commercial banks in Nepal. For this purpose three banks viz. Everest Bank Limited, Kumari Bank Limited and Nepal Investment Bank Limited are taken as samples .Review of literatures in this related area will help to get clear ideas, opinions and other concepts. What others has said and written on the basis of their studies, findings and research made in the past days is the major concern in this chapter. This chapter involves the review of theoretical part with basic academic course book of finance, recent published books specifically related to the topic, some of the major research based journals that may be published and unpublished that are created in national and global context by various analysts in the past. It includes the published articles by various researchers and thesis of earlier students on related topic.

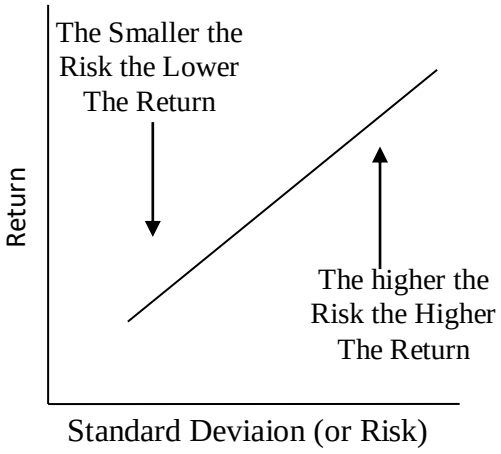
Risk and Return analysis of the stock has been the focal point and the key aspect in the capital market. The risk and return aspects and the formation of optimal portfolio has become the major task for investment process. The basic essentials of the modern portfolio theory are to avoid risk and to calculate risk premiums that investors need for involving in the risky investments. With the analysis of major risks and return the investor can quantify their tradeoff between risk and return

Investment Risk and Return

Investment return and the relationship between risk and return are described by investor's perception about risk and their demand for compensation. No investor will like to invest in risky assets unless one is assured of adequate compensation for the acceptance of risk. Hence, risk plays a crucial role in the analysis of the investments. It is the investors required risk premium that established a link between risk and return. In the market dominated by rational investor's higher risk will command by rational premium and the trade-off between the two assume a linear relationship between risk and risk premium. Risks and return are two interconnected and interdependent factors.

Figure 2.1

Relationship between Risk and Return



Source: *www.investopedia.com*

2.1 Conceptual Framework

2.1.1 Concept of Risk

Risk is defined as uncertainty in investment return or variability of the actual return from the expected return associates with the given assets As a rational investor he/she must choose to invest in those assets which will provides a better return with minimum risk and that will maximize his or her utility. Investor can borrow at risk free rate and combine the borrowed money with initial funds to invest in all risky assets. Instead of investing in all or non of these asset class, he/she must choose to diversify the total investment in different portfolio.

"Risk is the uncertainty associated with any investment. That is, risk is the possibility that the actual return on an investment will be different from its expected return. A vitally important concept in finance is the idea that an investment that carries a higher risk has the potential of a higher return. For example, a zero-risk investment, such as a U.S. Treasury security, has a low rate of return, while a stock in a start-up has the potential to make an investor very wealthy, but also the potential to lose one's entire investment. Certain types of risk are easier to quantify than others. To the extent that risk is quantifiable, it is generally calculated as the standard deviation on an investment's average return" (Farlex Financial Dictionary).

Each investor has a different risk tolerance. Some may be a conservative investors who seek opportunities that offer them some measure of control over their return they required higher expected return to compensate them for taking greater risk. Investors having high risk tolerance level would like to take chances with the risky but high-growth potential investment. They enjoy risk and are willing to give up some return to take more risk. There are other investors who fall between conservative and high risk who invest partially in conservative outlets and partially in riskier assets.

Every investment is subject to inflation. If the inflation rate exceeds your return on investment then you are actually losing money in the large run. While determining the risk level, one should remember that the minimum rate of return should exceed the rate of inflation. Other component that affects a sound investment plan is time horizon. Short term investors will generally seek risky investment whereas long term investors will accept uncertainty in short term with ultimate goal of high return.

"Risk defined most generally is a probability of occurrence of unfavorable outcomes. But risk have different meanings in different context. In our context two measure developed from the probability distribution have been used as initial measures of return and risk. They are the mean and standard deviation of the probability distribution"

"Risk is typically defined as uncertainty. It arises from imperfect knowledge or from incomplete data. "Risk and Return are the determinant for the valuation of securities. When the firm should recognize that the forecast return may or may not be achieved. The tough part of decision making under uncertainty is deciding how much extra return should be required to accept a measurable risk. Therefore, risk may be defined as the likelihood that the actual return from the investment will be less than the forecast return. Stated differently, it is the variability of return from an investment."

2.1.2 An Approach to Risk Management

Being a financial institution, risk management is an integral part of all business units. With the continuing increase in the scale as well as complexity of the banking business and the rapid growth in the volume of financial-related transactions, risk management has become essential.

Current flooding of corruption, discreditable action and corporate deception has evoked an urgency to strike at the roots of the functional activities in the financial sector of Nepal. The most recent collapse of a cluster of financial institutions defied the self-belief and created commotion among the general public regarding depositing their hardly earned money in banks. Only some months before Gurkha Development Bank, Nepal Share Market and finance company and Capital Merchant Banking closed down their transactions and could not pay the depositors. Moreover the current financial crisis, which brewed due to financial institutions' high exposure to risky assets, and the collapse of venerable financial institutions due to their inability to manage risky assets have further emphasized the need for prudent and effective risk management. The management team manages the overall risk profile, aiming for a good balance between risk and return.

Risk management in the bank includes risk identification, measurement and assessment, and its objective is to minimize negative effects that risks can have on the financial result and capital of a bank. Risk management strategies include the transfer of risk, avoidance of risk, reduction of the negative effect of the risk and acceptance of the consequences of a particular risk. The design of a risk management system depends among other things, on its size, capital structure, complexity of functions, technical expertise, and quality of Management Information System (MIS) and is structured to address both banking as well as nonbanking risks to maximize shareholders value .

The risk management system ensures that the bank takes well-calculated business risks while safeguarding the bank's capital, its financial resources and profitability. The bank's primary business activity is commercial banking where substantial risk comprises of credit risk. To a lesser extent, commercial banking activities also expose the bank to market risk arising from reprising, maturity and currency mismatches of assets and liabilities. These mismatches give rise to interest rate risk, liquidity risk, and foreign exchange risk. Specially The Board of Directors recognizes that a critical factor in the bank's continued growth, profitability and stability lies in its effective risk management capabilities and risk return trade-off. In this respect, the bank ensures its risk management capabilities and also continuously promotes a pro-active risk management in the bank.

In most situation risk exposure can be reduced through one of the following techniques:

- Transferring the risk to Insurance company: while company takes insurance of its assets and all the risk will be covered by insuring company which might be better for the company to bear risk directly rather than paying another party to bear it.
- Purchase derivatives contracts to reduce risk: firms use derivatives to hedge risks. Commodity derivatives can be used to reduce input risks, similarly, financial derivatives can be use to reduce risks that arises from changes in interest rate and exchange rates.
- Reduce the probability of occurrence of an adverse event: the expected loss arising from any risk is a function of both the probability of occurrence and the dollar loss it the adverse event occur.
- Totally avoid the activity that gives rise to the risk example, a company might discontinue a product or services live which enhances the risk factor.

2.1.3 Measurement of Risk

Measurement of risk can be done by several financial tools, and following are some important financial tools for measuring risk.

a) Standard Deviation(σ)

It is the most commonly used statistical indicator of an assets risk. It measured the dispersion around the expected value. The square root of the variance of the rates of return is called standard deviation of rate of return. **.** Standard deviation is a statistical measurement of how far a variable quantity, such as the price of a stock, moves above or below its average value. The wider the range, which means the greater the standard deviation, the riskier an investment is considered to be.

Some analysts use standard deviation to predict how a particular investment or portfolio will perform. They calculate the range of the investment's possible future performances based on a history of past performance, and then estimate the probability of meeting each performance level within that range. The main advantages of standard deviation is that the uncertainties of the returns can be summarized into a

single, easily calculated number. On the other hand, the main disadvantage of standard deviation is that it considers possible return above the expected value to be risky as returns below the expected value. He risk or standard deviation is denoted by sigma(σ) which is given by,

When probability is not given,

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

When probability is given,

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

Where,

σ_j= standard deviation for investment j

P_s=Probability of occurrence

R_j= return on stock j

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

In summary, standard deviation is the weighted average deviation from the expected value and it gives an idea of how far above or below expected value and actual value likely to be. It is the statistical tool for measuring risk, which contains both systematic and unsystematic risk.

b) Coefficient of Variation (C.V)

It is the measure of dispersion that is useful in comparing the risk of the assets with expected return. It provides more meaningful basis for comparison when the expected return on two alternatives are not the same. Higher the coefficient of variation, higher the risk. , the ratio of the standard deviation of a series of data points to the expected return. In investing, the coefficient of variation is used to measure the volatility (represented by the standard deviation) to the expected return on an investment. A lower coefficient of variation indicates a higher expected return with less risk. It is the standard deviation by the expected returns, which measures risk per unit of return and is given by,

$$C.V_j = \frac{\sigma_j}{R_j}$$

Where,

σ_j=standard deviation of stock j

R_j=expected rate of return on stock j

c) Beta Coefficient

The beta coefficient is an idea of systematic risk. It may be used for ranking the systematic risk of different assets. If beta is large than 1, then the assets are more volatile than the market, which is called aggressive assets. If beta is less than 1, the assets are considered as defensive assets as its price fluctuations are less volatiles than market. On the other hand, if the beta is equal to 1 then the asset is said to be average as its price move proportional to the market changes. Beta of market is always one. The beta coefficient can be calculated as follows,

$$\beta_j = \frac{COV(R_j, R_m)}{\sigma^2{}_m}$$

Where,

B_j =Beta coefficient of stock j

COV_{jm} =Covariance of individual assets return with the market portfolio

And

$COV_{ab} = \frac{\sum(R_a - \bar{R}_a)(R_b - \bar{R}_b)}{n}$

R_a, R_b = return on stock a and b

σ^2_m = variance of market portfolio

2.1.4 Sources of Risk

Every institution involves some degree of risk. It the major responsibility of that financial institution is to increase the return for its owner by taking minimum risk. Every year different financial institutions expenses more amount in reducing the risk of its institution by focusing more in various sources and kinds of risk factor. Some of the primary risk factors that create investment uncertainties are as follows:

- Business risk: Business risk refers to the uncertain about the rate of return caused by nature of business. It mainly includes uncertainty about the firm's

sales and operating expenses. The uncertainty associated with a business firm's operating environment and reflected in the variability of earnings before interest and taxes (EBIT). Since this earnings measure has not had financing expenses removed, it reflect the risk associated with business operations rather than methods of debt financing.

- Financial risk: Financial risk refers to the risk related to the firms capital structure i.e debt management, preferred stock and equity share. The firm is practically financed by debt that requires fixed interest payment or by preferred stock that requires fixed preferred stock dividend payment than these fixed charges in trade financial leverage.
- Liquidity risk: liquidity risk refers to the risk associates with the uncertainty created by the inability to sell the investment quickly for cash, it is the situation where there will be no cash or cash equivalents to meet the demands of depositors and borrowers, sale of illiquid asset will yield less than their fair value and illiquid assets will not be sold at the desired time due to lack of buyers. It refers to the ability of bank to maintain sufficient liquid asset at reasonable cost to meets its financial obligations. The banks liquidity policy is to ensure all contractual commitments can be met by readily available sources of funding even in a crisis situations.
- Interest rate risk: interest rate risk is the potential variability of return caused by changes in the market interest rates. If the market interest rises, then investment values and the market prices will fall and vice versa. The primary security purchased by financial institutions often has maturity and liquidity characteristics which are different from those of secondary security that financial institutions sells. Different financial institutions potentially expose themselves the interest rate risk.
- Management risk: The risk created due to different management policies decision and programs affect the risk faced by investor.
- Market risk: The risk arises due to adverse affect of exchange rate, interest rate, liquidity and price of equity is termed as market risk. The market today is very volatile in nature, the investment is totally or nearly stopped in nature. Central bank of Nepal, Nepal Rastra Bank has formulated different policies to manage the current situation of our country by applying different methods specially

deducting the interest rates on loan and saving deposits. The key elements in market risk management framework are principles and policies, risk limit and risk measures.

- Operational risk: It is a risk of loss which arises due to inadequate internal process, people, and system or from external events. Operational risk mainly involves break down in internal controls and corporate governance. Such breakdowns can lead to financial loss through error, fraud, or failure to perform in a timely manner of cause the interest of bank to be compromised in some way. According to Basel II every banks requires to hold capital against the risk of unexpected loss that could arise from the failure of operational system.
- Political risk: It is the external risk that arises from the exploitation of political parties, peer groups, groups or union in demand to improve their relative position and fulfill different demands. Regardless of whether the changes that cause political or by economic interests, the resulting variability of return is called political risk if it is accomplished through legislative, judicial or administrative branches of government. Political risk can be international political risk and domestic political risk.
- Credit risk: credit risk is the probability that a Bank's borrower or counter party will fail to meet its payment obligations in accordance with the terms of approvable of the credit. This includes nonpayment of capital or interest amount within the agreed time frame, at the agreed rate interest and in the agreed currency. The goal of credit risk management is to maximize a bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters.
- Reinvestment Rate Risk: The uncertainty associated with the impact that changing interest rates have on available rates of return when reinvesting cash flows received from an earlier investment. It is a direct or positive relationship.

  ↑ Interest Rate $\Longrightarrow$ ↑ Reinvestment Rate

  ↓ Interest Rate $\Longrightarrow$ ↓ Reinvestment Rate

- Price Risk**:** The uncertainty associated with potential changes in the price of an asset caused by changes in interest rate levels and rates of return in the

economy. This risk occurs because changes in interest rates affect changes in discount rates which, in turn, affect the present value of future cash flows. The relationship is an inverse relationship. If interest rates (and discount rates) rise, prices fall. The reverse is also true.

↑ Interest Rate ⟹ ↑ Present Value
↓ Interest Rate ⟹ ↓ Present Value

- Since interest rates directly affect discount rates and present values of future cash flows represent underlying economic value, we have the following relationships.

↑ Discount Rate ⟹ ↑ Economic Value
↓ Discount Rate ⟹ ↓ Economic Value

- Foreign Exchange Risks**:** Uncertainty that is associated with potential changes in the foreign exchange value of a currency. There are two major types: translation risk and transaction risks.
- Translation Risks: Uncertainty associated with the translation of foreign currency denominated accounting statements into the home currency. This risk is extensively discussed in Multinational Financial Management courses.
- Transactions Risks: Uncertainty associated with the home currency values of transactions that may be affected by changes in foreign currency values. This risk is extensively discussed in the Multinational Financial Management courses.

2.1.5 Types of Risk

The total risk can be divided into two parts as one is systematic risk and another unsystematic risk according to CAPM(capital assets pricing model).

1) Systematic risk: It is that portion of the total risk of an individual security caused by market factors that simultaneously affect the prices of all securities. The risk arises from the changes in economy and market condition basically market condition that affect the price of an individual securities price. The changes in economic,

political and sociological environment like high inflation, recession, impact of political factors, wars, depression etc are the sources of systematic risk. It is also called un-diversifiable risk or un-avoidable risk. This risk is uncontrolled by the management. It can be written as:

$$\text{Systematic Risk} = \frac{\text{COV}_{jm}}{\sigma_m}$$

Where,

COV_{jm}=Covariance of stock j and Market Return

σ_m = standard deviation of the market

Interest rates, recessions, and wars are types of systematic risk because they affect the entire market and cannot be avoided even with diversification. Systematic risk affects a broad range of securities, whereas unsystematic risk affects a very specific group of securities or an individual security. Systematic risk can be mitigated only by being hedged. But even a portfolio of well-diversified assets cannot protect against all risk **(**Investopedia).

2) Unsystematic risk: Risk that is unique to a certain asset or company. Also called the diversifiable risk or residual risk. The risk that is unique to a company such as a strike, the outcome of unfavorable litigation, or a natural catastrophe that can be eliminated through diversification. Company- or industry-specific risk as opposed to overall market risk; unsystematic risk can be reduced through diversification. As the saying goes, “Don't put all of your eggs in one basket.” Also known as specific risk, diversifiable risk, and residual risk. For example, a particular oil company has the diversifiable risk that it may drill little or no oil in a given year. An investor may mitigate this risk by investing in several different oil companies as well as in companies having nothing to do with oil. It can be written as:

$$\text{Unsystematic Risk} = \frac{\sigma_j - \text{COV}_{jm}}{\sigma_m}$$

Where,

σ_j =Standard deviation of stock j

σ m = standard deviation of the market

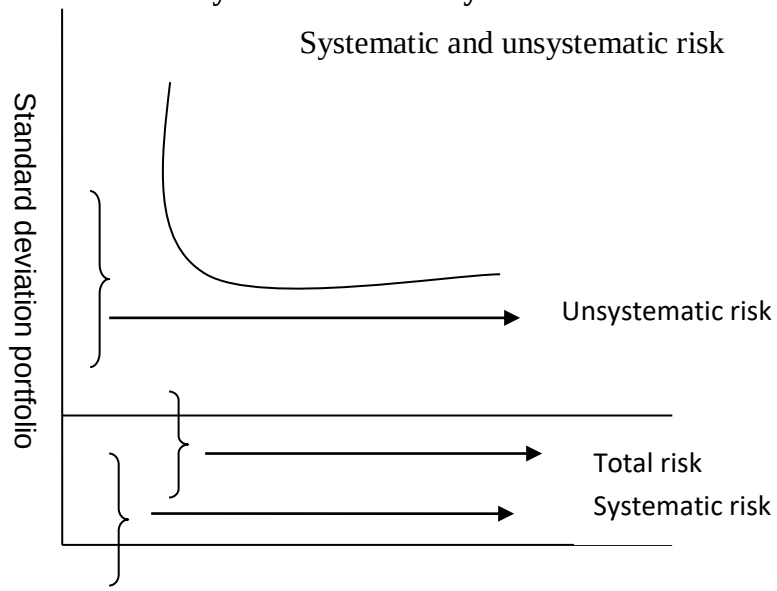
COV_{jm}=Covariance of stock j and Market Return

We have,

Total risk=systematic risk+ unsystematic risk

Figure 2.2

Systematic and Unsystematic Risk



(Source: Van Horne and Wachowitz, 1995:96)

2.1.6 Concept of Return

The return is total gain or loss experienced on an investment over a given period of time. It is commonly measured in the percentage value as the change in value plus the annual income received. The return is basically the outcome received in future by investment made on different assets today. As future is uncertain, the amount of return cannot be expected exactly but we can measured and analyze with the help of different methods available with us.

Return is the main point of attraction for the investors to invest in a risky securities by accepting varying degree of risk tolerance. The concept of return has different meaning to different people. some investors seek near term cash inflows and give less value to more distance return. An individual or business spends money today with the expectation of earning more money in future. Thus , the concept of return provides

investor with a convenient way of expressing the financial performance of an investment.

The return better known as reward for investment includes both current income and capital gains or losses that arises by the increase or decrease of the security prices.

"Return is defines as the dividend yield plus the capital gain or loss. The relationship between different levels of return on their relative frequencies is called a probability distribution, we could formulate a probability distribution for the relative frequency of a firm annual return by analyzing its historical return over the previous year. But we know that history never repeats itself exactly. Hence, after analyzing relative frequencies of historical return for the individual company. We can form a probability distribution based on historical data plus the analysis for the economy and the outlook for the industry the outlook for the firm in its industry and another factors" (Van Horne and Wachowicz, 1997:90).

2.1.7 Measurement of Return

a) Single period rate of return: If certain securities is brought and hold for certain period, there will be some return which is known as holding period return (HPR). If the investors sold the investment in more than the purchase price then he/she will be in capital gain or if sold less than the purchase price it will be capital loss. So, rate of return is the profit or loss through the change in price of assets. HPR Is calculated as:

$$\text{Holding Period Rate of Return(R)} = \frac{\text{Ending Price} - \text{beginning Price} + \text{Cash Receipt}}{\text{Beginning Price}}$$

$$\text{Or,} R = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

Where,

P_t= Ending price or expected price after end of a year

P_{t-1}=Beginning price or current price

D_t=Cash dividend

R=Actual (or expected) return

HPR=Holding period return

b) Annualized rate of return:

i) Geometric mean Return(GM): The multi period or compounded rate of return is called geometric mean return. Geometric mean HPR gives elastic result as it considers reinvestment opportunity. It is given by,

GM= [(1+HPR1)(1+HPR2)……..(1+HPRn)]1/n-1

Where,

HPR= holding period return

n=number of periods

ii) Arithmetic Mean Return (AM): The arithmetic mean for a single investment is the weighted average rate of return of each rate of return.

$$\text{Arithmetic Mean} = \frac{HPR_1 + HPR_2 + HPR_n}{N}$$

Where,

N=number of years

c) Expected Rate of Return

The expected rate of return or Holding period return is based upon the expected cash receipt over the holding period and expected ending or selling price. Depending upon the assumption made about cash receipt and cash receipts and ending price, a number of expected returns rate are possible, these possible rates estimated by the investors are summarized in the expected rate of return." The expected rate of return must be greater or equal to the required rate of return in order for the investor to find the investment acceptable" (Cheney and Moses, 1995).

If probability distribution is given the expected rate of return for any asset is the weighted average rate of return using probability of each rate of return as the weight. And it is given by,

E (HPR) or $\overline{HPR}$ =$\sum$ p.HPRj

Where,

P = Probability occurrence

If probability distribution is not given(Arithmetic average): If return creating circumstances cannot be explain in possibility, expected rate of return is determined on the basis of real return of any assets in the past. In such condition arithmetic average rate of return is assume as:

$$\overline{HPR} = \frac{\sum HPR}{N}$$

Where,

N= number of years

2.2 Capital Assets Pricing Model (CAPM)

It is economic theories that describes the relationship between risk and expected return, and serves as a model for the pricing of risky securities. The CAPM asserts that the only risk that is priced by rational investors is systematic because that risk cannot be eliminated by diversification. The CAPM says that the expected return of a security or a portfolio is equal to the rate on a risk-free security plus a risk premium multiplied by the asset's systematic risk. Theory was invented by William Sharpe (1964) and John Lintner (1965). The early work of Jack Treynor is was also instrumental in the development of this model.

The assumption behind the CAPM is that money has two values: a time value and a risk value. Thus, any risky asset or investment must compensate the investor for both the time his/her money is tied up in the investment and the investment's relative riskiness. This compensation must be in addition to the risk-free rate of return. There are a number of variations on the CAPM, notably the multifactor CAPM and the two-factor model. The CAPM is calculated according to the following formula:

$$E(R_j) = RF + (\overline{Rm} - RF)B_j$$

Where,

$E(R_j)$= The expected return for assets

RF= Risk free rate

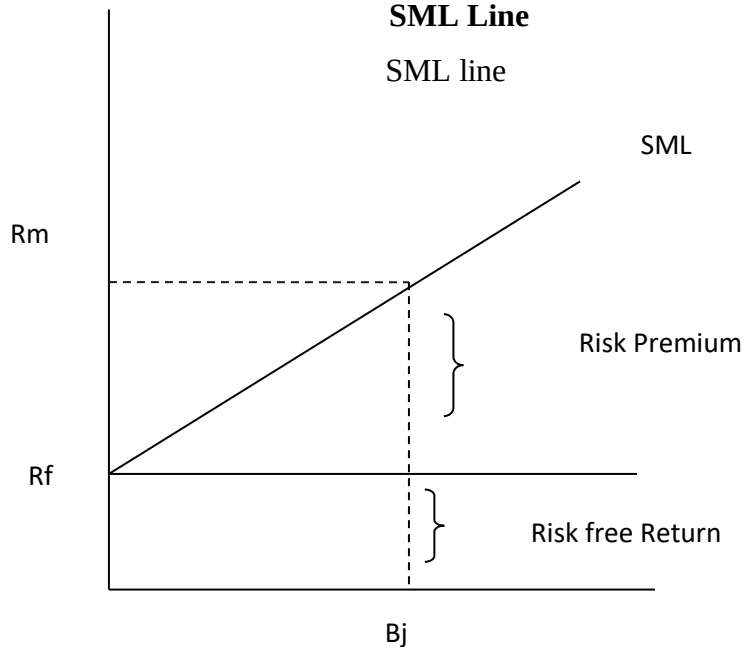
$\overline{Rm}$= Expected rate of market portfolio (usually assumed to be s& p 500)

B_j= Beta coefficient for asset

Figure 2.3

SML Line

SML line



(Source: Van Horne and Wachowitz, 1995:49)

According to CAPM total risk is divided into two parts. They are systematic and unsystematic risk. Beta coefficient is an index of systematic risk. Beta is a measure that arise from between the return on stock and return on market. Unsystematic risk is measured by standard deviation.

"Based on the behavior of the risk averse investor, there is implied an equilibrium relationship between risk and expected return to provide a return commensurate with its unavoidable risk. This is simply the risk that cannot be avoided by diversification. Te greater the unavoidable risk of security, the greater the return that investors will expect from the security (Van Horne, 1997:64).

Based on the Markowitz's mean-variance model, the CAPM inherits all the shortcomings of the latter in addition to its own assumptions such as:

- Investors are rational and risk averse. They pursue the only interest of maximizing the expected utility of their end of period wealth. Implication: The model includes the Single time horizon for all investors.
- The markets are perfect, thus taxes, inflation, transaction costs, and short selling Restrictions are not taken into account.
- Investors can borrow and lend unlimited amounts at the risk-free rate .
- All assets are infinitely divisible and perfectly liquid.
- Investors have homogenous expectations about asset returns. In other words, all investors agree about mean and variance as the only system of market assessment, tus everyone perceives identical opportunity. The information is costless, and all investors receive the same information simultaneously.
- Asset returns conform to the normal distribution.
- The markets are in equilibrium, and no individual can affect the price of a security.
- The total number of assets on the market and their quantities are fixed within the defined time frame.

While the CAPM emerges as the most commonly used approach for both institutional and private investors, somebody has to prove that this simple model really holds true in the market (knowledgebase.abcquant.com/index).

2.3 Review of NRB Guidelines

Nepal Rastra Bank ,Central Office of Nepal has prepared some provisions relating to mitigation of Risk in Transactions of Licensed Institutes. Under the Directives No. 5/067 ,Banks and Financial Institutions Regulation Department has issued some basic provisions to be regulated in every licensed financial institutions of Nepal. The following Directives have been issued with regard to minimizing the risks associated with liquidity, interest rate, foreign exchange in transactions of licensed institutions having exercised the powers conferred by Section 79 of the Nepal Rastra Bank Act, 2002.

1. Classification of Risks

For the purpose of monitoring the risks relating to banking and financial activities by licensed institutes, the risks have been classified into the following groups:

- Liquidity risks
- Interest Rate risks
- Foreign Exchange risks
- Credit and Investment risks

1. Arrangement for Minimization of Liquidity Risks

(1) In order to minimize the liquidity related risks the licensed institutions shall group the assets and liabilities into heir appropriate maturity period of various time intervals. For this purpose, the liquidity shall be prepared quarterly and be submitted, within 15 days from the closure of the quarter (end of Asoj, Paush, Chaitra and Ashad), to the concerned Supervision Department of this Bank.

(2) The licensed institutions shall, on the basis of maturity periods, classify the time interval as follows for example

- Assets and liabilities having maturity period of over ninety days to One Hundred Eighty days,
- Assets and liabilities having maturity period of over one hundred eighty days to two hundred seventy days;

(3) In respect of the liabilities of the licensed institutions without having fixed Maturity period like current deposits and savings deposits, the amount of Core Deposits and the minimum required balances has to be included under the time interval of "over one year period". The realistic estimation of such proportion of current deposit has to be made by the licensed institutions themselves.

(4) A limit has been fixed so that proportion of the total loan and advance may not exceed 80 percent in resource mobilization (local deposit and core capital) of the bank and financial institution. The institutions having crossed the said limit has to meet certain time frame made by NRB.

2. Arrangement for Minimization of Interest Rate Risks

(1)(a) Only the interest sensitive assets and liabilities that may be affected due to change in interest rate have to be included in assets and liabilities.

(b) Generally, in the gap analysis of the assets and liabilities the maturities of which mismatch no amount of the "Cash Balance" and "Non-Interest Bearing Account" shall be included.

(c) Quarterly statement according to the format must be submitted within 15 days from the closure of the quarter to the Bank's concerned Supervision Department.

(2) Assets without fixed maturity period and a floating rate loan with interest adjusted periodically shall be included under the same time interval in which period the interest rate is adjusted. A term loan with a floating interest rate tied to the movements of a specific change (for instance, interest rate of Treasury bill) shall be assigned a minimum time interval period.

(3) Gap shall be measured as follows:-

(a) The gap between assets and liabilities shall be measured by subtracting the total liabilities from the total assets pertaining to each time intervals. The cumulative gap of each time interval shall also be measured by summing the individual gaps up to and including the gap under consideration. Possible changes in interest rate shall be estimated the changes of interest rates by one percent may be considered.

3. Arrangement for Minimization of Foreign Exchange Risks

(1) All the licensed institutions shall maintain an Exchange Fluctuation Fund as required under the Directives relating to Accounting Policies and Format of Financial Statements issued by this Bank.

(2) The grouping of the currency-wise foreign exchange into short-term and long-term maturity periods and exhibit including the net position must be prepared.

(3) The limit of licensed institution's daily net position of foreign exchange has been fixed up to maximum of 30 percent of the Core Capital. Where the net position

exceeds such limit, they shall put efforts to bring down the same to the limit. In case the net position is not adjusted to the limit within one month, action under Nepal Rastra Bank Act, 2002 shall be initiated.

4. Provisions for Minimization of Credit and Investment Risks

The Directives issued by this Bank in respect of "Regulations Relating to Classification of Loan and Advances and Provisioning Requirements (Directives No. 2)" and "Regulations Relating to Limit on Credit Exposure and Facilities Provided by the Licensed institutions to a Single Borrower, Group of Related Borrowers and Single Sector of the Economy (Directives No. 3)" and Regulations relating to Investment (Directives No. 8) shall be considered basis for minimization of risk relating to credit and investment.

5. Repeal and Saving

Provisions relating to Mitigation of Risks in transactions of licensed institution as contained in the Unified Directives, 2066 Directives according to Directives No. 5/066 and all circulars issued until mid-July, 2010 relating to this subject.

2.4 Scenario of Commercial Banks

2.4.1 Concept of Commercial Banks

A bank is a financial institution which deals with the monetary activities by accepting deposits, lending to the various parties against securities and performing agency service to its clients/ customer. Commercial banking is also known as business banking. It is a bank that provides checking accounts, savings accounts, and money market accounts and that accepts time deposits.

Commercial banks are those financial institutions, which deal in accepting deposit of the persons and institutions and in giving loans against securities. These banks also provide technical and administrative assistance to industries. The main purpose of priority sector investment scheme is to uplift the back ward sector of the economy. It has power to create money and destroy money, within limits, through the use of loans and demand deposit. Thus commercial banks are the hearts of the financial system. They hold the deposits of general public, government establishment and business units.

According to Walter Leaf "A bank is a person or corporation which holds itself out to receive from the public, deposits payable on demand by cheque." Horace White has defined a bank, "as a manufacture of credit and a machine for facilitating exchange."

According to Prof. Kinley, "A bank is an establishment which makes to individuals such advances of money as may be required and safely made, and to which individuals entrust money when not required by them for use.

The Banking Companies Act of India define Bank as "A Bank is a financial institution which accepts money from the public for the purpose of lending or investment repayable on demand or otherwise withdraw able by cheques, drafts or order or otherwise."

According to Nepal commercial Banking Act 2031 B.S. "A Commercial bank refers to such type of bank which deals in money exchange, accepting deposits, advancing loans and commercial transactions except specific banking related to co-operative, agriculture and industry and other objectives"(Commercial Bank Act 2031, Ministry of Law and Justice, HMG).

American Institute of Banking defines commercial bank, as "Commercial Bank is a corporation which accepts demand deposits subject to cheques and makes short term loans to business enterprises, regardless of the scope of its other services". The institution also laid down the four functions of commercial bank as receiving and handling deposits (Deposit Function), handling payments of money (Payment Function), making loans and investments (Loan Function) and creating money by extension of credit (Money Function) (American Institute of Banking, 1972:345).

A bank is an establishment for the custody of money received from or on its customers, it's essential duty is to pay their draft on it, its profit arises from its use of money left unemployed by them"(Oxford Dictionary).

Hence, we can conclude that commercial banks are established under definite rules and regulations directed by central bank of the country. Banking systems in underdeveloped countries remain integral components of the general economic

systems and they can be considered as a key element in any development effort .the commercial banks are regarded as a key driver of the financial institutions of Nepal. They are established to improve people's economic welfare and facility, to provide loan to agriculture, industry and commerce and to offer banking services to the people and the country. Though banks are exist for the mobilization of the saved funds, central bank makes certain rules so that the public or the customer may not go under any kind of loss and each and every financial institution will provide the better return and facility to their valued customer.

2.4.2 Activities of Commercial Banks

The institution of formal banking sector in Nepal commenced with the established in 1937 B.S. As Nepal Bank limited (NBL). This was the first Commercial bank and after that in 1956 by the act of 1955 Nepal Rastra Bank established. A decade after the establishment of NRB, Rastriya Banijya Bank (RBB), a commercial bank under the ownership of Formal His Majesty's Government of Nepal was established. Thereafter, HMG/N adopted open and liberalized polices in the mid 1980s reflected by the structure adjustment process, which included privatization, tariff adjustments, liberalization of industrial licensing, easing of terms of foreign investment and more liberal trade and foreign exchange regime was initiated. With the adoption of liberalization policy, there has been rapid development of the domestic financial system both in terms of number of financial institutions and as ratio of financial assets to the GDP.

Commercial banks are the major component in the financial system, It works as the intermediary between depositors and the lenders and facilitate in overall development of the nation. It provides technical and administrative assistance to industries, trade and business enterprises.

As the end of January 2012 A.D. the given commercial Bank and financial institution are available.

- Commercial Bank-32
- Development Bank-88
- Finance Companies- 70
- Micro Credit Dev. Banks- 24
- NGOS- 36

- Co-operative- 16
- Life Insurance- 8
- Non-Life Insurance- 16
- Nepal Stock Exchange-1
- Life and Non Life Insurance-1
- Registered Brokerage-48
- Merchant Bankers-14

Some of main activities performed by the commercial banks are mentioned below:

- To provide loan for hire-purchase, hypothecation, leasing, housing, and service oriented business as per Nepal Rastra Bank directives.
- To undertake merchant banking business subject to the directives of Nepal Rastra Bank and undertake foreign exchange business.
- To make arrangements for jointly supplying credits on the basis of co-financing by joining hands with other licensed holding institutions according to the agreement concluded for the purpose.
- To issue guarantees on behalf of customers, have such customers execute necessary bonds in consideration thereof, obtain security, and acquire their movable and immovable assets as collateral or on mortgage or the assets of the third person as collateral,
- To supply credit against the guarantee provided by any local or foreign bank or financial institution, grant overdraft to the loyal and trusted persons.
- To issue, accept, redeem, endorse document, purchase and deal in letter of credit, bills of exchange, promissory note, check, travelers' check or any other financial instruments which provides better services to the valued customers.
- To accept deposit, make payment, and transfer fund through telephone, telex, fax, computer, or magnetic tape or any other electronic instrument or device for fast and better services that includes issuance and acceptance of credit cards and debit cards.
- To work as an agent of Nepal Rastra Bank and undertake government transaction including other transaction on behalf of His Majesty's Government as per Nepal Rastra Bank's terms and conditions.
- To remit or transfer money through bills of exchange, check, or other financial

instruments; or to deal in gold, silver bullion, share, debenture; and to collect share dividend, and interest on promissory note, debenture, bond, etc.

- To work as a commission agent and take responsibility of purchase and sale of share, debenture; collect share dividend, and interest on debenture; and to send or transfer such dividend, profits and interest within or outside the Nepalese territory on behalf of a customer. To mobilize capital through shares, debentures, bonds, loan-bond, saving-bond, or other financial instrument.
- To exchange information or notices regarding debtors or customers who have obtained credits from it or any other licensed holding institution with the Rastra Bank or other licensed holding institution.

2.5 Review of Journals and Articles

In Nepal there is slow development of financial institution, there is very few media involvement and published different business magazine. In the trend of few years, Nepal has got some excess to international business magazines. It is rear and difficult to find the articles and journals related to risk and return. But due to rapid development of information Technology the world is narrowing by itself. Hence we can get any information in any subject matter easily and safely. Internet are most widely used to get different information about the related topic.

"Financial economics has been defined as the application of economic theory to financial markets" (Smith, 1996). It is largely body of theory including such well known models as modern portfolio theory (Markowitz, 1952), the capital asset pricing model (CAPM) (Sharpe, 1964), the efficient market hypothesis (Samuelson and Fama, 1965) and option pricing model (Black and Scholars 1973).Though these models are all included in institute of faculty education limited in 1995, their acceptance or use is controversial.

The journal of Finance, published bimonthly by American Finance Association for many decades is considered. An article entitled, "*Local Returns Factors and Turnover in Emerging Stock Markets*" by Rouwen Horst (1999) was published which is reviewed here." This paper examines the source of return variation in emerging stock markets. Compared to the developed market the correlation between the most

emerging market and stock market has been historically low and until recently many emerging countries restricted investment by foreign investor.

He attempts to set two set of question to answer by his solution. Many emerging stock market have firms with multiple shares classes are treated as single value weighted portfolio of the outstanding equity securities. He concludes that the return factors in emerging market are qualitatively similar to those in developed market. The low correlation between the country return factor suggest that the premiums have a strong local character. Furthermore global exposure cannot explain the average factor return of emerging market. There is little evidence that correlation between the local factors portfolio have increased which suggest that factors responsible for increase of emerging market country relation are separate from those that drive the difference between expected return within these market.

A Bayesian analysis of premiums in developed and emerging market shows that unless one has stronger prior believes to the contrary, the empirical evidence favors the hypothesis that the size, momentum and the value strategies are compensated for expected returns around the world. At last, the relationship between expected return and share turnover examine the turnover characteristic of the local return factor portfolio. However, beta size and momentum and value are positively cross section ally correlated with turnover in emerging market. This suggest that the returns premiums do not simply reflect compensation for liquidity (Rouwenhorst, 1999:1439-1440).

David Lorenz, Stefan Trück, (2008) "*Risk and Return in European Property Markets: An Empirical Investigation*", Journal of European Real Estate Research, 1 (3): 235 – 253).

Purpose – The purpose of this paper is to explore capital gains, income, and total returns in various property markets in Europe. In a comparative study the nature of returns for different commercial and residential properties is investigated. Hereby, total returns, income returns, and capital growth are distinguished. The paper further presents an analysis of the risk-return relationship of the different markets and

investigates the interactions between property markets, other local financial markets, and macroeconomic variables.

Design/methodology/approach – Focusing on the risk-return relationship of the different asset classes and countries, the Sharpe ratio is used as a risk-adjusted performance measure to investigate the European markets. Using a simple linear regression model, a comparison of the European commercial property markets with respect to their returns and risk are provided. Finally, a capital asset pricing model (CAPM) and factor models based on arbitrage pricing theory (APT) are used in an effort to further explain the spreads and risk premiums for individual property markets.

Findings- The large differences between the markets regarding spreads, risk premiums, and risk-return relationships are found. Overall, the Dutch market can be regarded as giving the highest compensation for the risk taken by the investors in the last decade, while the German market performed the worst and was the only market with negative capital growth rates for the considered period. Applying the CAPM, It has also been found total returns in commercial property markets are not significantly related to the performance of stock market indices. On the other hand, factor models using macroeconomic variables are able to explain a higher fraction of property total return spreads over the risk-free rate in the considered countries. But depending on the country, different macroeconomic variables were estimated to be significant such that there is no single factor model available that could be applied to all European markets. Overall, these findings indicate that classic financial models drawing on existing datasets are unable to satisfactorily explain the performance of property as an asset class. On the other hand, the fact that property office markets yield relatively high returns that exhibit rather low correlations with stock market returns, makes them a very suitable candidate for portfolio diversification.

The article published jointly by Paudel and Koirala (2006) on the topic" *Application of Markowitz and Sharpe Models in Nepalese Stock Market*" (The Journal of Nepalese Business Studies Vol. III No. 1 Dec. 2006).

The purpose of this article is to test whether or not Markowitz and Sharpe models of portfolio selection offer better investment alternatives to Nepalese investors. It has been done by applying those models in a sample of 30 stocks traded in Nepalese stock market. The study finds that the application of these elementary models developed about a half century ago offer better options for making decision in the choice of optimal portfolios in Nepalese stock market .A Rational Investor Always Attempts to minimize risk and maximize return on his investment. Investing in more than one security is a strategy to attain this often-conflicting goal. In 1952, Harry M. Markowitz developed a model that could be used to systematically operationalise the old adage – don't put all eggs in one basket. Markowitz's portfolio model is concerned with selecting optimal portfolio by risk adverse investors. According to the model risk adverse investors should select efficient portfolios, the portfolio that maximizes return at a given level of risk or minimize risk at a given level of return, which can be formed by combining securities having less than perfect positive correlations in their returns.

Markowitz model was theoretically elegant and conceptually sound. As per Sharpe's model, the construction of an optimal portfolio is simplified if a single number of measures the desirability of including a stock in the optimal portfolio. In this case, the desirability of any stock is directly related to its excess return-to-beta ratio. If the stocks are ranked from highest to lowest order by excess return to beta that represents the desirability of any stock's inclusion in a portfolio. The number of stocks selected depends on a unique cutoff rate such that all stocks with higher ratios will be included and all stocks with lower ratios excluded. The establishment and operation of the Nepal Stock Exchange (NEPSE) in 1994 has opened door to investors. Although it has evolved slowly, it still is characterized by small number of listed securities (150 securities of 142 companies) by the end of 2006, traditional trading practice (open outcry system), dominance of one type of securities (banks) in the market portfolio, least trading of government securities, absence of professional investment advisors, very low level of information disclosure and trading driven by rumors than systematic analysis.

This poses a great challenge for the rational investors of Nepal in the capital which indicate a need of systematic approach in investment decision. Although the stock

market of Nepal is in infant stage, all types of investors can benefit from the sound and in-depth knowledge of portfolio analysis which help them to diversify their investment risk. The systematic analysis of available portfolios and thereby selection of optimal portfolio help to diversify risk without adversely affecting the return.

An article published in "Journal of Finance" on the title of "*Expected Return, Realized Return and Asset Pricing Tests"* is also relevant in our research. In this paper the writer mentioned that" Almost all of the testing I am aware of involves using realized rate of return as proxy for expected return relies on a belief that information supervises trend to cancel out over the period of study and realized return are therefore an unbiased estimate of expected returns. however, I believe that there is ample evidence that it belief is misplaced. There are periods longer than 10 years during which stock market realized return are on average less than the risk free rate(1973 to 1984). There are periods of more than 50 years in which risky long term bonds on average perform the risk free rate (1927 to 1981). Having a risky asset with an expected return above the risk-less rate is an extremely weak condition for the realized returns to be an appropriate proxy for expected returns and 10 and 50 years is an awfully long time for such a weak condition not to be satisfied. In the recent past United States has had a stock market return of higher than 30 percent per year while Asian Markets have had negative returns"(Elton, 1999).

The journals published by Poudel (2002) *"Investing in Shares of Commercial Banks in Nepal: An Assessment of Return and Risk Element*" in economic review if Nepal Rastra bank. The objective of the study is to determine whether the shares of commercial banks are correctly priced by analyzing the realized rates of returns and the required rates of return using the Capital Asset Pricing Model (CAPM). The study also aims at exploring the future price behaviors of the individual share in the market striving towards equilibrium. In sum, the paper attempts to determine whether the shares of commercial banks in Nepal are overpriced or under-priced by analyzing risk and return characteristics of the individual shares.

To analyze the risk characteristics of the shares of joint-venture commercial banks, the share prices of eight commercial banks have been analyzed. Data on share price and the NEPSE index have been collected from the secondary sources, particularly from the sample period commenced on mid-July 1996 and ends in mid-July 2001.

For the purpose of analyzing risk characteristics of the shares of selected commercial banks, the standard deviation (with systematic and unsystematic parts of total risk), the coefficient of variation, the correlation coefficient between the return on individual bank's share and the return on market portfolio and the beta coefficient have been used. As Nepal Stock Exchange Limited is the only organized stock market in the country, quarterly percentage changes in the NEPSE index are used as the returns on market portfolio.

The review concludes that shares of commercial banks in Nepal are heavily traded in the stock market and, therefore, these shares play a key role in the determination stock exchange indicators. The average mean return on market portfolio, as measured by percent changes in the NEPSE , was 5.51 percent over the sample period. All the shares produced higher rates of return than the return on market portfolio. The shares with larger standard deviations seem to be able to produce higher rates of return. The portion of unsystematic risk is very high with the shares having negative beta coefficient. The risk per unit of return, as measured by the coefficient of variation, is less than that of the market as a whole for all the individual shares. Most of the shares fall under the category of defensive stocks, (having beta coefficients less than 1), except the shares of Bank of Kathmandu Limited. Return on the shares of Nepal Arab Bank Limited is negatively correlated with the return on market portfolio and, therefore, it has negative beta coefficient. From the analysis, it appears that none of the shares are correctly priced. Therefore, shares of Nepal Arab Bank Limited, Nepal Indosuez Bank Limited and Himalayan Bank limited which are overpriced relative to equilibrium thus market forces, will decline. The remaining shares appears to be under-priced indicating a possible positive long term price trend.

A study conducted by Pradhan and Blampaki (2006) 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. "This study is based on period cross sectional data of 40 listed companies in NEPSE Ltd. and traded in the stock market. The study examines if dividend yield, capital gain yield and total yield are related to earning yield, book to market ratio and cash flow yield. Pradhan and Balampaki has summarized the following results.

- Earnings Yield and Cash flow yield have significant positive impact on

dividend yield, and an insignificant impacts on book to market value, whereas, size has negative impact on dividend yield, in the case of earning yield and cash flow yield, cash flow yield has been found to be more information then earning yield

- Capital gain yield is positive influenced by earnings yield and size, whereas, size has negatively influenced by book to market value and cash flow yield. Book to market value has found to be statistically strong in predicting capital gain yield. Similarly total yield is positively determined by earnings yield and size, whereas the same is negatively determined by book to market value has been found to be more informative than other variables.
- The positive relationship exists among earnings yield, book to market value and cash flow yield. However the size is negatively related to these three variables.

2.6 Review of Thesis

Risk and Return Analysis is not a new concept for financial analysis in the context of Nepal and it's very slow growing capital market. Different studies and research are made regarding this topic by different researchers, authors, college students and provided different views and ideas to overcome any limitations and give valuable suggestions. Some studies related to the topic of risk and return has been conducted for the fulfillment of master degree in T. U. in this study only relevant subject matters are reviewed, which are as follows.

Sapkota (2010), entitled "*Risk and Return Analysis in common stock Investment"* includes eight commercial banks is a very closely related study to this study. The main objective of the study is to analyze the risk and return of the common stock in Nepalese stock market, the study is focused on the common stock of commercial banks" in this study Sapkota found that "Banking industry is the biggest one in terms of market capitalization and turnover. Expected rate of return of on the common stock of Nepal Bank Ltd. is the maximum (66.99%) and C.S. of Nepal SBI Bank ltd. is found minimum. in this regard, C.S. of NBL is most risky and C.S. of NSB is less risky. In the context of industries, expected return of finance and insurance industry is found highest expected return of banking industry in 60.83%."

Sapkota, in this study, has concluded "common stock is the most risky security and life blood of stock market because of the higher expected return, C.S. attracts more investors. Private C.S. holders are the passive owners of the company. But the private investors play a vital role in economic development of the nation by mobilizing the dispersed capital remained in different from in the society. As overall economy Nepalese stocks market is in emerging state. Its development is accelerating since the political change in 1990 in effect of openness and liberalization in national economy. But lack of information and poor knowledge, Nepalese private investors can not analyze the securities as well as market properly."

Recommendation to the Private Sectors

- Stocks market investment is a risky job. Although there is a chance of more return than that of expected, there is also a chance of heavy loss. So, it should really only investment money in the stocks market that it need for other communities. The stock market is undoubtedly risk in the short term and investor needs to be prepared for it.
- Private investors should try and work out their attitude towards the risk of various investment strategies.
- Investors need to diversity their funds to reduce risk. Proper construction of portfolio never takes any considerable loss.

Recommendation to the Government

Nepal Government needs to manage the trading of government securities in NEPSE in spite of Nepal Rastra Bank (NRB). Government securities are assumed as risk free security and trading of these securities at the same place to investors so that they can diversity their fund properly to construct optimal portfolio. This will also increase the strength of stock market and more specially, as well government needs amendment of rules and regulations regarding stock market time to time. Without implementation of rules and regulations, it is meaningless to do anything. There are serious problem in implementation. Hence, Government needs to monitor to make active to all the components of stock as well as capital market properly.

Rai (2010) conducted yet another research entitled with " *Investors Risk And Return In Commercial Bank of Nepal" (With Reference to NABIL Bank, Himalayan Bank, Nepal Investment Bank and Everest Bank)*. He has taken the data both from primary and secondary source and his study has been carried out of ten years period i.e from 15th July to 14th July 2009. Some of his specific objectives include to analyze the systematic risk ,unsystematic risk, returns of the selected commercial banks, to analyze whether the common stocks of selected banks are overpriced or underpriced, to find out whether the investors analyze the risk and return while making investment in the common stocks. While undergoing with his study, he found that average rate of return of NABIL, HBL, NIB and EBL are 28%, 5%, 7% and 22% respectively. Among four sampled banks, NABIL has the highest rate of return and HBL has the lowest return. In year 2001/02, all the sampled banks have negative annual return or no return i.e annual return of NABIL, HBL, NIB and EBL is - 49%, - 31%, - 33%, -31.2 % respectively and in the same year NEPSE index movement is also negative i.e. -0.03. Beta coefficient of NABIL has the highest i.e 1.096 and EBL the lowest i.e 0.633 and the standard deviation of NABIL is also the highest and HBL is the lowest. Excess average rate of return of HBL is -6.29 percent and NIB is -6.71.NIB has higher rate of average return over required rate of return. So, its stock is under priced. Coefficient of variation of NABIL, HBL, NIB and EBL are 1.849, 5.36, 5.057, and 1.8 respectively. Coefficient of HBL is the highest and EBL has the lowest.

Financial statement survey is the base of investment on common stocks of commercial banks in Nepal. At the same time, some investors also make market survey to build on base for their investment. According to him, majority of investors are risk seekers who consider risk in their investment on common stock but the consideration level is at the middle level rather than high. Likewise, there are also some investors who consider return factors and tend to avoid high risk and consider return at middle level. Most of the investors expressed that they have conducted both analysis. At the same time, some of investors have conducted only either financial analysis or market analysis. Those who have conducted either financial analysis or both type of analysis, has ranked return factor in the first priority and only then market price per share, risk and dividend in second, third and fourth priority respectively. Those who have conducted either market analysis or both types of

analysis, has ranked goodwill and image of the bank's first priority and only then share market's performance, future expectation and market rumor in second, third and fourth respectively. Majority of investors agreed that most of the Nepalese investors do not have adequate awareness about risk and return factors. It is observed that most of the Nepalese investors have high consideration on goodwill and image of the commercial bank while investing their money on the common stock of commercial banks based on the market analysis approach. 50% of investors are treated as low awareness, 30% of the investors have adequate awareness and 20% have no any prediction about risk and return factors.

Chhetri (2011) titled *"Risk and Return Analysis and Optimal Portfolio Creation of Sample Commercial Banks*" with reference to Nepal investment bank, Everest bank and standard charter bank. The main objective of this thesis is to assess the risk and return of listed commercial banks and suggest how to create an optimal portfolio among them. The main focus of the study is to measure and make both technical and fundamental analysis of the financial performance of sampled banks. According to this thesis many investors are still afraid to invest in securities because of inadequate knowledge in the field, they are exploited from market intermediaries. Unhealthy competition among financial institutions and fake status and information is prevalent in the market. People run behind earning higher interest without knowing the financial position of any financial institutions. The research is based on the data of period 2005/06 to 2009/10 which are taken from secondary sources.

Some of the major findings of this thesis are SCB has the highest rate of return with 56.26% while it's the lowest of 40.36% incase of NIB. EBL's return is moderate i.e. 46.70%. NIB has the highest 81.80% of risk or standard deviation while EBL is the least risky as it consists of 67.68% keeping SCB's risk at 72.70% moderate. Co-efficient of Variation Analysis has resulted that the highest risk is borne by investor of NIB where for one unit return, the risk is 2.0268 while it is the lowest for SCB. C.V of EBL has remained at 1.4493 as moderate. All 3 sampled commercial banks' relation with banking index shows positive relation. In terms of correlation of co-efficient, NIB has the highest positive relation i.e.85.95% and EBL has the minimum positive relation i.e. 76.78% with the industry/business index. NIB, the first and SCB, the second, both are aggressive (i.e. market sensitive), to the market changes as

evaluated by the highest beta co-efficient of 1.3323 of NIB following SCB's beta at 1.0867 as second and EBL as third with 0.9847 beta co-efficient. The study concluded that an investor should invest with optimal portfolio creations of sampled banks with, 56.75% in SCB and rest 43.25% in NIB having the Optimal Portfolio Return as 67.31% with risk or standard deviation 57.80%. hence, it is recommended to invest in optimal portfolio using two assets i.e. SCB and NIB.

Some of the points recommended by Chhetri is as mentioned below:

- Broker firms are good way to exchange and share investment ideas. Mutual fund is worthwhile for people with little interest in investment. Investors are recommended to share experiences, ideas and take view of expert before investing in stocks of individual banks.
- Investors should select the stock that have higher return and negative correlation or near to zero correlation between different banks and sectors.
- Other investment alternatives availability also affect the market. Commodity market, real estate and gold are the investment alternatives. So, all the investors are recommended to make analyses about all alternative investment which affect the market return.
- The financial institutions are recommended to invest the sum in productive sectors rather than housing and building apartment. In order to gauge the satisfaction level of the customers and to continuously improve the way they work, regular feedback and surveys which provide valuable insights about their product and services, should be undertaken
- It is recommended to all the investors not to run after the financial institutions which provide maximum interest rate of return only. Some of them might be running at bad times. So, all the investors are recommended to invest in those institutions which guarantee the investors' investment though provided with low return. It is really a high time to focus on "Lower the risk, lower the return rather than higher the risk, higher the return".

Neupane (2011), entitled *"Risk and Return Analysis with Reference to Listed Commercial Banks"* is also related to this study. In this study, he has taken six listed commercial banks in account and has given following conclusion. The return is the

income received on a stock investment, which is usually expressed in percentage expected return on the common stock of SCBNL is maximum (i.e. 128.60%), which is very high rate of return. In reality this rate exists only due to the effect of unrealistic annual return because of the issue of bonus share and increase in share price. Similarly expected return of the C.S. of Himalayan Bank Ltd. is found minimum (i.e. 28.94%)."

About the risk he has concluded "risk is the variability of returns, which is measured in terms of standard deviation. On the basis of S.D., Common stock of NBBL is most risky because of its lowest S.D. and C.S. of HBL is least risky because of its lowest S.D. on the other hand, we know that coefficient of variation (C.V.), is more rational basis of investment decisions, which measures the risk per unit of return. On the basis of C.V., common stock of NABIL is the best among all banks, NABIL has 0.86 unit of risk per unit of return. However, C.S. of NABIL has the highest risk per unit of return (i.e.1.2729).

He has recommended the following points:

- NEPSE needs to initiate to develop different programs for private investors such as investor's meeting and seminars in different subject matters like "Trading rules and regulations" etc. on the other hand, NEPSE is following "open cry system" of trading even in the age of digital technology it should be modernized. It needs to develop efficient and effective information channel and to provide up to date data.
- Government needs to amend the rules and regulations regarding stock market in time and to make the policy that protects the individual investor's right.
- The corporate firms should communicate the real financial statements. Values of assets and liabilities should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.

Bhandari (2012) "*Risk and Return Analysis of Common Stocks of Selected Commercial Banks of Nepal(With Reference to Nabil, Nepal Investment, Everest Bank*

and Bank of Kathmandu)". The thesis submitted by Bhandari on the topic risk and return has main objective to assess the risk and return on common stock investment of commercial banks in Nepal. Similarly, to identify the covariance and correlation between the returns of common stock and to examine the relationship between dividend and market price of stock with risk and return is also main objective of this study. This study has been done covering five years data from period 2006/7 to 2010/11.

The major findings of this study is that on the basis of price evaluation of stock of four commercial banks all are under priced, there is negative required rate of return of the stock of NABIL and EBL due to negative beta coefficient of stock. From the analysis of correlation coefficient of stock NIBL & BOK have highest degree of positive correlation and NABIL & NIBL have lowest degree. common stocks of BOK is more volatile because it has the highest beta coefficient (i.e. 1.09) which shows the change in market return by 1% bring the change in return on common stock of BOK by 1.09%. the beta coefficient of EBL and NABIL have negative beta coefficient which shows even the market is prosperous the stock of EBL and NABIL cannot gain significantly and vice-versa. The stock of NIBL is defensive but the stock's of BOK is aggressive.

Bhandari has recommended following points based upon his thesis

- The market sensitivity of Common Stock also helps to invest the funds. It is better to invest the common stock of beta less than 1 But the higher return cannot obtain in such investment. The under priced common stock should be purchased and the overpriced common stock should be sold. Here, all the common stock of listed banks is found under-priced. So, the study recommended to the investors to purchase the common stock of banks.
- There is no dual conflicts with NEPSE, for providing the true information to the investor about stock market. The stock market of Nepal is emerging state and possible investors afraid of investing in secondary market. NEPSE helps investors by giving clear information about stock market, (i.e. process of investing, trading rules and regulation) and inspired to possible investors to investing common stock. Similarly, NEPSE should develop effective

information channel to provide the up to date information. But the recommendation to NEPSE is that it should take steps to established the stock market in other main cities of the countries like Nepalgunj, Dhangadhi, Biratnagar, Dharan, Damak etc. The market is concentrated only in the capital city, which is the main difficulty in development of stock market.

- From the analysis of the whole industry, banking industry is better industry for investment because it has lowest Coefficient of Variance (i.e. 0.8489) than the other industry. Any industry (stock market also) cannot develop and rise their business in the disturbance condition and un-stability condition of political situation of the country and unfavorable rule and regulation of government. Therefore, the government should monitor the activities of stock market and manipulate and amend the rule and regulation regarding stock market time-to-time and making various policy to implementation to the rule and regulations.

2.7 Research Gap

Risk and return is a broad topic in finance and investment. In Nepalese stock market, many studies have been undertaken in the field of risk and return analysis of common stock of commercial banks. It is a continuous process of analyzing and interpreting the result that are obtained from the research. Investment is a dynamic process and investors required various information regarding the stock market and individual companies as soon as possible. In this aspect, this study will provide up to date insights regarding the risk and return characteristics of the common stock of commercial banks. Overall, in terms of time period sample to some extent tools of analysis, this study is different and new from previous studies which will provide updated information regarding the risk and return on common stock investment of listed commercial banks that will help the investors make more rational investment decisions.

CHAPTER - III

RESEARCH METHODOLOGY

The research methodology is the systematic way of solving research problems. Research methodology refers to the overall research process, which a researcher conducts during his/her study. It concludes all the procedures from theoretical under pricing to the collection and analysts of the data. As most of the data are quantitative, the research is based on the scientific models. It is compared of the both parts of technical aspect and Logical aspect, on the basis of historical data. Research is systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well thought out activities flies of gathering, researching, analyzing and interpreting the data with the purpose of findings answer to the problems is called research. Research can be conducted on the basis of primary and secondary data. Here the study includes all the data which are analyzed with using appropriate financial and statistical tools and outcomes are presented in simple way.

The basic objective of the study is to analyze the risk and return of the selected three commercial banks namely, Everest Bank Ltd, Kumari Bank Ltd, Nepal Investment Bank ltd. The content refers to the approach of research process from theoretical foundation to the collection and analysis of the data.

A research Methodology helps us to find out accuracy, validity and suitability. The justifications on the present study cannot be obtained without the help of proper research methodology. For the purpose of achieving the objectives of the study the applied methodology are used which are briefly mentioned as follows.

3.1 Research Design

Research design is a controlling media for the collection of data and it helps to collect the accurate information which is related to risk and return analysis of different commercial banks of Nepal for the study purpose. Research design is the plan structure and strategy of investigation conceived so as to obtain answer to research question.

This study is based on the recent historical data that covers the data from the fiscal year 2006/2007 to 2010/2011 B. S. the analytical as well as descriptive research design has been included In this study. For analytical purpose the annual reports and financial statement of related commercial banks are collected. But this study is mainly based on secondary sources of data.

3.2 Population and Sample Size

Among the total population only three commercial banks that have completed at least five years are taken as sample for the comparative study. EBL,KBL and NIBL are taken for the study and the study Is completely based on the risk and return of selected bank. Three Banks are selected thinking that the selected samples will best represent the population. Financial statement of these banks for 5 fiscal years from 2006/2007 to 2010/2011 A.D will be taken as samples for the study.

The banks selected for the study are as follows

- Everest Bank Limited
- Kumari Bank Limited
- Nepal investment bank limited

3.3 Sources of Data

This study is mainly based on secondary data. While studying individual investor's opinion, bank officials, suggestion and opinion from different personal are also taken into considerations. Data related to the market prices of stock market capitalization, movement of NEPSE index etc. has taken from related websites of NEPSE. Financial reports of commercial banks are also collected. Besides, the secondary data have been acquired from various sources like:

- Annual reports of commercial banks.
- Trading reports published by Nepal Stock Exchange ltd.
- Materials published in paper and magazines.
- Related websites.
- Course books and booklets. etc

3.4 Data Analysis and Tools

The data which are collected need to be presented, edited, tabulated and analyzed. They should be presented not only in the systematic form but also be calculated in systematic way to get the desired output relating to the subject matter to achieve the basic objectives. On the basis of analyzed data, specific conclusions of the study are made. Different financial and statistical tools are used to measure risk and return of sampled commercials banks by categorized as descriptive analysis and inferential analysis. A brief explanation of the terms and tools of analysis used in this study are as follows.

3.4.1 Market Price of the Stock (MPS)

One of the major data of this study is market price of the stock. Market price of stock for a particular year should have represented the average price of the year but for the sake of simplicity, prices of the stock for the closing data of the fiscal Years are taken as the market price of the stocks for the particular years and these data are taken from the annual reports of the respective banks Here in this study, each year closing price is taken as the market price of stock which has specific time period of one year and the study has focused in annual basis. To get the real average volume and price of each transaction in the whole year are essential which is tedious and impossible too, considering the data availability and maintenance. Market value in the secondary market is determined by the supply and demand factors and reflects the opinion of investors and trader concerning the values of the stock. Closing price is used as market price and includes these all information and average of reliable and representative information. There are three price records available: High, low and closing price. So, two approaches either average price (of high and low) or closing price can be used. Closing price is used as market price of stock for this study.

3.4.2 Dividend (D)

Dividend per share (including Bonus) provided under the major indicator section of the respective banks have been used for the study. Dividend is the part of earning that is distributed to the shareholders as a part of their investment. Dividend is return to equity capital that consist price of time and price of risk taken by the investors. The total amount of dividend out of earning available to the shareholder if distributed, the

common stock's portion is said Dividend per share (DPS). Symbolically, *DPS* can be expressed as:

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

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

Total Dividend Amount = Cash Dividend + Stock Dividend % x next year MPS

Where,

MPS= Market price per share

3.4.3 Holding Period Return on Common Stock

Holding period return is sum of dividend income and change in market price of stock expressed as percentage of beginning of investment.

Mathematically,

$$R_j = \frac{P_{t+1} - P_t + D_t}{P_t}$$

Where,

R_j =Holding period rate of return on common stock

D_t =Cash dividend received at the end of period t

P_t =Beginning prices of stock

P_{t+1} =Ending prices of stock

3.4.4 Expected Rate of Return on Common Stock (R)

It is the average rate of return which can be earned in future. The expected rate of return is based upon the expected cash receipt and expected capital appreciation. One of the main objectives of this study is to determine the expected return on the investment in sample banks. It is given by

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

Where,

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

n =Number of years that the return is taken

$\sum$ =Sign of summation

Rj =Return on stock j

Using probabilities,

$E(Rj)=\sum P \times Rj$

Where,

P= probability occurrence

3.4.5 Standard Deviation (S.D)

Standard deviation is the absolute measure of dispersion. Absolute measure of dispersion or variation of the item around their average value. It is the statistical measure of the variability of distribution of return around its means. It is the square root of deviation of return and the average scatterness of returns from mean return. S.D is the measurement of total risk in financial management. Total risk refers on investment, S.D is calculated as follows:

When probability is not given,

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

When probability is given,

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

Where,

σ_j= standard deviation for investment j

P_s=Probability of occurrence

R_j= return on stock j

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

3.4.6 Coefficient of Variation (C.V)

Coefficient of variation is measure of dispersion that is useful in comparing the risk of assets with expected return. C. V shows the risk per unit of return and provides more meaningful basis for comparison when the expected returns on two alternatives are not the same. Higher the coefficient of variation, higher the risk. It is calculated as follows.

$$C.V_j = \frac{\sigma_j}{R_j}$$

Where.

$C.V_j$=Coefficient of Variation of Stock j

3.4.7 Beta Coefficient

Total risk can be classified as the diversifiable (Non systematic) and non-diversifiable (Systematic) risk. Making portfolio between the securities can diversify the diversifiable portion of the total risk. But on the other hand non-diversifiable risk is created from the market related factors. The risk cannot be diversified away and investor should expected to receive additional return associated with the systematic risk. The systematic risk can be measured since the sources of systematic risk are market persuasive, it is logical to measure systematic risk as the covariance between the return of individual assets or portfolio and the return of the market portfolio, which consists of all assets. This measure of systematic risk is represented by beta (β). Securities with beta (β_j>1) are classified is more risky (aggressive) and the securities with betas less than market beta as less risky (defensive) in comparison with market risk mathematically,

$$\beta_j = \frac{COV(R_j, R_m)}{\sigma^2{}_m}$$

or , $= \frac{\mathrm{COV_{jm}}}{\sigma^2{}_{\mathrm{m}}}$

Where,

B_j =Beta coefficient of stock j

COV_{jm} =Covariance of individual assets return with the market portfolio

And $COV_{ab} = \frac{\sum(R_a - \bar{R}_a)(R_b - \bar{R}_b)}{n}$

R_a, R_b = return on stock a and b

$\sigma^2{}_m$ = variance of market portfolio

3.4.8 Correlation Coefficient

The correlation coefficient measures the direction of relationship between two sets of figures. Correlation is the relative measurement of co-movement of the returns of two stocks. Correlation coefficient and co-variance are related by the following equation,

$$r_{ab} = \frac{COV_{ab}}{\sigma_a . \sigma_b}$$

Where,

σ_a =Standard deviation of returns for assets a

σ_b =Standard deviation of returns for assets b

r_{ab} =Correlation coefficient between assets a and b.

There are following cases of correlation and risk conditions:-

Perfectly Positive Correlation (r_{ab} = +1)

Return on two perfectly positive correlation stocks would move up same direction so risk cannot diversified away by investing in such assets in portfolio. Portfolio of such stocks would be exactly as risky as the individual stocks.

Perfectly negative Correlation (r_{ab} = -1)

Return on two perfectly negative correlated stocks would move up exactly opposite direction so risk can be completely eliminated by holding such stocks in portfolio. But perfectly negative correlated stock cannot be found in the real world.

Correlation of r= -1 and r=+1

Generally the condition of correlation coefficient from range of -1 to +1 cannot be found in the real world. Returns of those assets lie in between -1 and +1 and in such situation, risk can be minimized but not up to zero.

Systematic Risk

It gives us the proportion of risk that can not be diversified away. In other words, it is the out of control of management. So it is called un-diversifiable risk. It can be calculated as follows, Systematic risk = $\beta^2 \times \sigma M^2$

Unsystematic Risk

It gives us the proportion of risk that can be diversified away. In other words, it is the under the control of management. So, it is called diversifiable risk. It can be calculated as follows,

Unsystematic Risk = Total Risk (variance) – Systematic Risk

3.4.9 Portfolio Risk and Return

Portfolio is combination of individual or group of assets. It is making investment in more than one alternative at the same time. Investors have different types of investment opportunity but they have limited resource for investment so that investors have to choose that investment opportunity which maximizes return for a given level of risk or minimized risk for a given level of returns. Thus the combination of these investment is called portfolio.

3.4.9.1 Portfolio Return, E (RP)

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

Symbolically,

$E(R_p) = W_a E(R_a)+W_b E(R_b)$

Where,

$E(R_p)$ = Expected return on portfolio

W_a =Weight or proportion of fund invested in a security

W_b = Weight or proportion of fund invested in b security

3.4.9.2 Portfolio Risk

Portfolio risk means that risk which is created while investing in more than one assets all together. The portfolio risk is main influenced by three elements, one is individual risk of assets involve in the portfolio another is weighted of every assets and last is co-movement between the return of the investment assets. The formula for the calculation of portfolio risk for two assets is given by,

$$\sigma_p = \sqrt{\sigma_{a^2 Wa^2} + \sigma_{b^2 Wb^2} + 2COV(R_a R_b)} W_a W_b$$

Or,

$$\sigma p = \sqrt{\sigma a^2 Wa^2 + \sigma b^2 Wb^2 + 2r_{ab}\sigma_a \sigma_b W_a W_b}$$

Where,

σ_p =Standard deviation of portfolio

σ_a^2 =Variance of return of security a

σ_b^2 =Variance of return of security b

w_a =Weight of security a

w_b =Weight of security b

$COV(R_aR_b)$=Covariance between return of assets a and b

r_{ab} =Correlation coefficient between the return of security a and b

3.10 Minimum Variance Portfolio

The minimum variance portfolio gives suggestion about what is the best combination of two assets. A portfolio that has the lowest level of variance (risk) is referred to the optimal portfolio. A risk-averse investor will have a tradeoff between risk and return. We can use the following formula for estimating optimal weights of securities a and b. It is the ratio of two assets, which minimizes risk. Formula,

$$Wa = \frac{\sigma a^2 - COV(R_a R_b)}{\sigma a^2 + \sigma b^2 - 2COV(R_a R_b)}$$

$$W_b = 1 - W_a$$

Where,

W_a =Optimal weight to invest in stock a

W_b = Optimal weight to invest in stock b

σ_a^2 =Variance of stock a

σ_b^2 =Variance of stock b

$COV(R_aR_b)$=Covariance of returns between stock a and b

3.11 Return on Market (R_m)

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

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

Where,

R_m =Return on market

NI_t =NEPSE index at 't' time

NI_{t-1} =NEPSE index at 't-1' time

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

This chapter is the main body of study that includes presentation and analysis of collected data. In this chapter, the effort has been made to analyze risk and return analysis of leading Nepalese commercial banks, which includes detail data of market price of share and dividend of each selected commercial banks their interpretation and analysis. with reference to the various readings and literature review in the preceding chapter effort is made to analyze the recent Nepalese stock market movement to the listed commercial banks. The analysis of data consists of organizing tabulating and assessing financial and statistical result. Different table and diagrams are used to make the result easily understandable and more effective.

4.1 Analysis of Principal Indicators of Individual Commercial Banks

According to Nepal Rastra Bank, there are thirty two commercial banks operating in Nepal. Thus study has been focused on three listed commercial banks only which are listed in NEPSE. The presentation and analysis of data has been made in the order of commercial banks published by NEPSE in the heading of "Classification of the listed Companies under the listing Bye Law (2053)".

The selected listed commercial banks to the purpose of this study are as follows

- Everest Bank Limited (EBL)
- Kumari Bank Limited(KBL)
- Nepal Investment Bank Limited (NIBL)

4.1.1 Everest Bank Limited(EBL)

Following table shows the data of everest bank that includes market price, dividend data, earning per share, price earning ratio and relationship between closing price, EPS and DPS is shown in the diagram.

4.1.1.1 Tabulation of MPS, EPS, P/E Ratio and Dividend Data of EBL

Table 4.1

MPS, EPS, P/E Ratio and Dividend Data of EBL

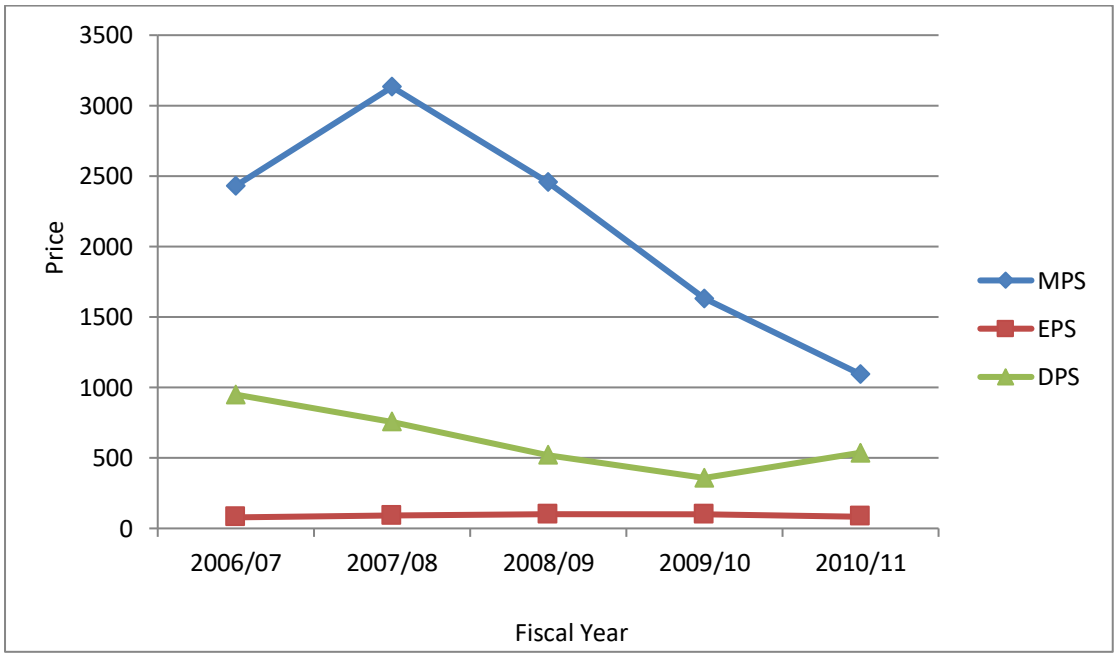
Fiscal Year	Closing MPS	Cash DPS (Rs)	Stock DPS (Rs)	Total DPS (Rs)	EPS (Rs)	P/E Ratio
2006/07	2430	10	30	949.6	78.42	30.99
2007/08	3132	20	30	756.5	91.82	34.11
2008/09	2455	30	30	519	99.99	24.55
2009/10	1630	30	30	358.2	100.16	16.27
2010/11	1094	10	50	526.5	83.18	13.15

Source: Annual Report of EBL

The closing market price is higher in year 2007/08 and has gradually decreased in following year. The bank has distributed cash dividend ranging from Rs 10 to Rs 30 per share every year. EBL has distributed higher stock dividend of Rs 50 in year 2010/11. The highest total dividend is in year 2006/07 of Rs 949.6 and the lowest is in year 2009/10 of Rs 358.2 respectively. From the table above we can conclude that the P/E ratio is maximum when MPS is also maximum.

Figure 4.1

The Relationship between MPS, EPS, DPS of EBL



The earning per share is highest in the year 2009/10 and lowest in year 2006/07. The price earning ratio which is used to take the judgment of the firm's performance

which is highest in 007/08. The ratio is recorded to change from 13.15 to 34.11. it reflects the investors expectation about the growth in the firms earning. But if this ratio declines the management is also interested in the market appraisal of the firm performance and focus on it to find the causes. The price earning ratio of the bank is in decreasing phase.

Table 4.2

Tabulation of Calculated Expected Return, Standard Deviation and C.V of EBL

Expected Rate of Return(R_j)	36.904%
Standard Deviation(σ)	60.86%
Co-efficient of Variation(C.V)	1.6861

Source Annex-1,2

According to table, The Expected Rate of Return of EBL is 36.904 % with the Standard deviation of 60.86% and Co-efficient of Variation of EBL is 1.6861. This denotes that to get per unit return, the investor has to undergo with 1.6861 risk.

Table 4.3

Tabulation of All Results of Everest Bank Limited

Correlation of coefficient (r)	0.9789
Beta Co-efficient (β)	1.342
Variance(σ^2)	0.3703
Systematic Risk (SR)	35.47%
Unsystematic Risk(USR)	1.569%
Proportion of systematic Risk in total Risk	95.76%
Proportion of Unsystematic Risk in total Risk	4.24%

Source: Annex 4

According to table, the beta coefficient of EBL is found 1.342 which is greater than one (1), therefore, it is aggressive type of assets. That means stock of EBL is highly volatile than the market. Beta is an indicator of systematic risk and is found to be Maximum. So, this is aggressive type of asset and found to be more risky. Correlation coefficient between market and EBL is 0.9789. This shows the positive relationship between market and EBL stock. EBL has 35.47% systematic risk which is non-diversifiable but it has 1.569% unsystematic risk from the total risk. The proportion of systematic risk in total risk is 95.76% where as unsystematic risk is 4.24%.

4.1.2 Kumari Bank Limited (KBL)

The table below shows the data of Kumari bank that includes market price, dividend data, earning per share, price earning ratio , and relationship between closing price, EPS and DPS is shown in the diagram.

4.1.2.1 Tabulation of MPS, EPS, P/E Ratio and Dividend Data of KBL

Table 4.4

MPS, EPS, P/E Ratio and Dividend Data of KBL

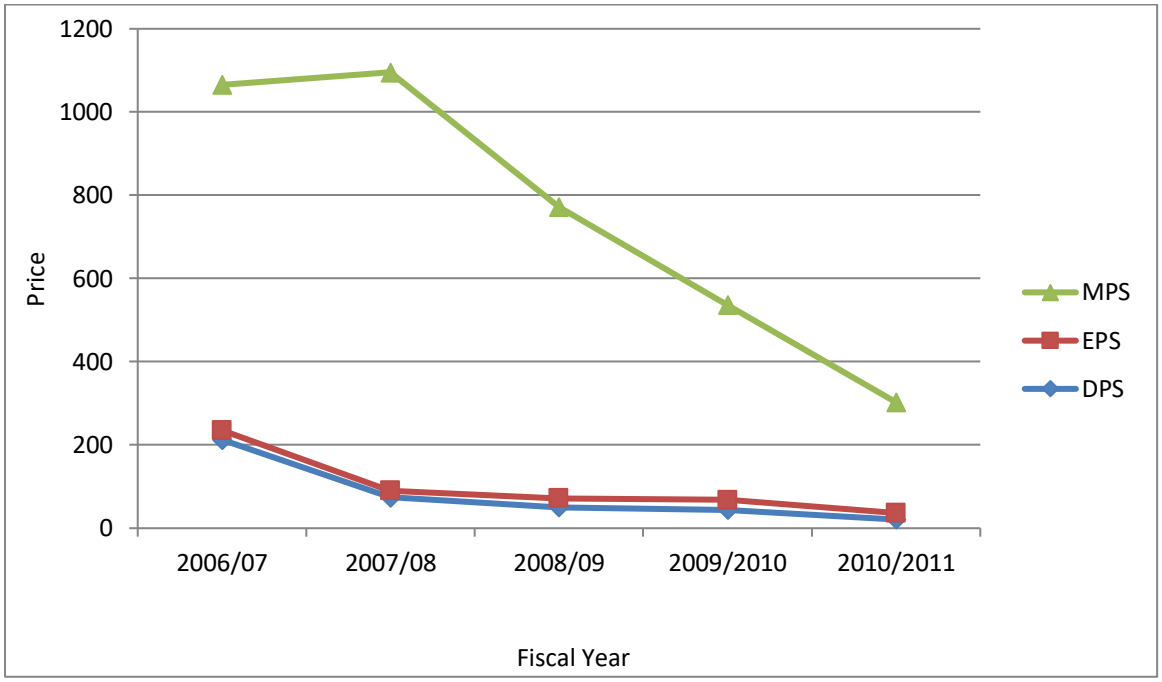
Fiscal Year	Closing MPS	Cash DPS (Rs)	Stock DPS (Rs)	Total DPS (Rs)	EPS (Rs)	P/E Ratio
2006/07	830	1.05	21.05	212.6	22.70	36.56
2007/08	1005	0.53	10.53	74.24	16.35	61.47
2008/09	700	0.55	10.58	50.06	22.04	31.76
2009/10	468	12	12	43.92	24.24	19.31
2010/11	266	0.44	8.44	20.86	15.67	16.98

Source: Annual Report of KBL

From the above data closing market price of the share is in decreasing trend in year 2010/11 and in year 2007/08 is the highest in this five years period. The bank has distributed low stock dividend in year 2010/11 and higher dividend in year 2006/7. The bank is distributing cash dividend ranging from Rs0.44 to 12 and total dividend ranging from Rs43.92 to Rs212.6 respectively .EPS of KBL is found to be maximum of Rs 24.24 to minimum of Rs16.35. The price earning ratio which is used to judge the financial performance of the firm is 61.47 in year 2007/08 which shows 362% increased over the 5 years period which is maximum. Hence P/E ratio is also maximum in year 2007/08 with maximum MPS.

Figure 4.2

The Relationship Between MPS, EPS, DPS



From the above diagram we can observe that the closing price is higher in year 2007/08 and it has decreasing trend thereafter. Similarly, the EPS and DPS of KBL has also decreasing trend after fiscal year 2006/07.

Table 4.5

Tabulation of calculated Expected Return, Standard Deviation and C.V of KBL

Expected Rate of Return(R_j)	15.97%
Standard Deviation(σ)	66.80%
Co-efficient of Variation(C.V)	4.1817

Source Annex-1,2

According to table, The Expected Rate of Return of KBL is 15.97 % with the Standard deviation of 66.80% and Co-efficient of Variation of KBL is 4.1817. This denotes that to get per unit return, the investor has to undergo with 4.1817 risk.

Table 4.6

Tabulation of all Results of Kumari Bank Limited

Correlation of coefficient (r)	0.9492
Beta Co-efficient (β)	1.4284
Variance(σ^2)	0.4462
Systematic Risk (SR)	40.18%
Unsystematic Risk(USR)	4.44%
Proportion of systematic Risk in total Risk	90.04%
Proportion of Unsystematic Risk in total Risk	9.96%

Source: Annex 4

According to table, the Beta co-efficient of KBL is found 1.4284 which is more than one (1). Therefore, it is aggressive type of assets i.e it has more risk and return than market portfolio. That means stock of KBL is more volatile than the market. Beta is an indicator of systematic risk and that is found to be maximum. So, this is aggressive type of asset and found to be more risky. Correlation coefficient between market and KBL is 0.9492. This shows positive relationship between market and KBL's stock. KBL has 40.18% systematic risk which is non-diversifiable but it has 4.44% unsystematic risk from the total risk. The proportion of systematic risk and unsystematic risk is 90.04% and 9.96% respectively.

4.1.3 Nepal Investment Bank Limited (NIBL)

The table below shows the data of Nepal Investment bank that includes market price, dividend data, earning per share, price earning ratio , and relationship between closing price, EPS and DPS is shown in the diagram.

4.1.3.1 Tabulation of MPS, EPS, P/E Ratio and Dividend Data of NIBL

Table 4.7

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

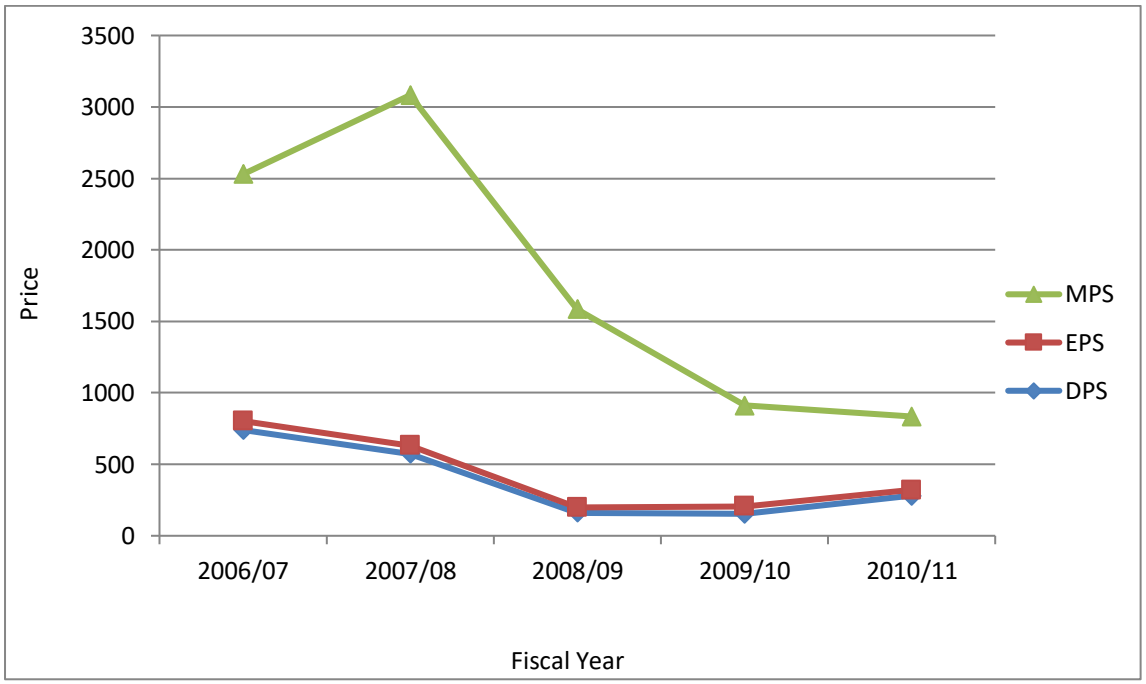
Fiscal Year	Closing MPS	Cash DPS (Rs)	Stock DPS (Rs)	Total DPS (Rs)	EPS (Rs)	P/E Ratio
2006/07	1729	5	30	740	62.57	27.63
2007/08	2450	7.50	40.83	574.22	57.87	42.33
2008/09	1388	20	20	161	37.42	37.10
2009/10	705	25	25	153.75	52.55	13.42
2010/11	515	25	50	280.5	39.10	10.54

Source: AGM Report of NIBL

The closing price of share is higher in year 2007/08 and it starts decreasing thereafter. The bank has distributed cash dividend ranging from Rs5 to Rs 25 respectively. The stock dividend is maximum in year 2007/08 of Rs 40.83 and is minimum in year 2008/09 of Rs 20.The EPS is higher in year 2006/07 and is in decreasing trend the year after. Similarly P/E ratio also shows the decreasing trend after year 2007/08 till 2010/11. The P/E ratio is maximum in year 2007/08 when MPS is also maximum.

Figure 4.3

The Relationship between MPS, EPS, DPS



From the above diagram we can observe that the closing price is higher in year 2007/08 and it has decreasing trend thereafter till year 2010/11. Similarly, the EPS and DPS of NIBL has also decreasing trend after fiscal year 2006/07 to 2008/09 and again it starts increasing to year 2010/11 positively.

Table 44.8

Tabulation of Calculated Expected Return, Standard Deviation and C.V of NIBL

Expected Rate of Return(R_j)	21.758%
Standard Deviation(σ)	55.56%
Co-efficient of Variation(C.V)	2.5535

Source Annex-1,2

According to table, The Expected Rate of Return of NIBL is 21.758 % with the Standard deviation of 55.56% and Co-efficient of Variation of NIBL is 2.5535 . This denotes that to get per unit return, the investor has to undergo with 2.5535 risk.

Table 4.9

Tabulation of all Results of Nepal Investment Bank Limited

Correlation of coefficient (r)	0.9384
Beta Co-efficient (β)	1.1746
Variance(σ^2)	0.3086
Systematic Risk (SR)	27.17%
Unsystematic Risk(USR)	3.69%
Proportion of systematic Risk in total Risk	88.01%
Proportion of Unsystematic Risk in total Risk	11.98%

Source: Annex 4

According to table, the Beta co-efficient of NIBL is found 1.1746 which is more than one (1). Therefore, it is aggressive type of assets. That means stock of NIBL is more volatile than the market. Beta is an indicator of systematic risk and that is found to be maximum. So, this is aggressive type of asset and found to be more risky. Correlation coefficient between market and NIBL is 0.9384. This shows positive relationship between market and NIBL's stock. NIBL has 27.17% systematic risk which is non-diversifiable but it has 3.69% unsystematic risk from the total risk which can be diversified. The proportion of systematic and unsystematic risk is 88.01% and 11.98% respectively.

4.2 Analysis of Market Movement

Market Index (NEPSE Index)

There is only one stock exchange in Nepal on market risk and return. The program has been started by Nepal Government to return capital converted securities. Stock exchange center Nepal 1993 has been working a non-profit organization opening under the securities exchange Act 1983 overall market movement of the country is represented by market index or NEPSE index. The return and risk of market is the average return and risk of all the securities available in the market. The market assuming the lowest risk provides the best return. The market risk and return has calculated from NEPSE index in Annex No.

Table 4.10

NEPSE Index Movement

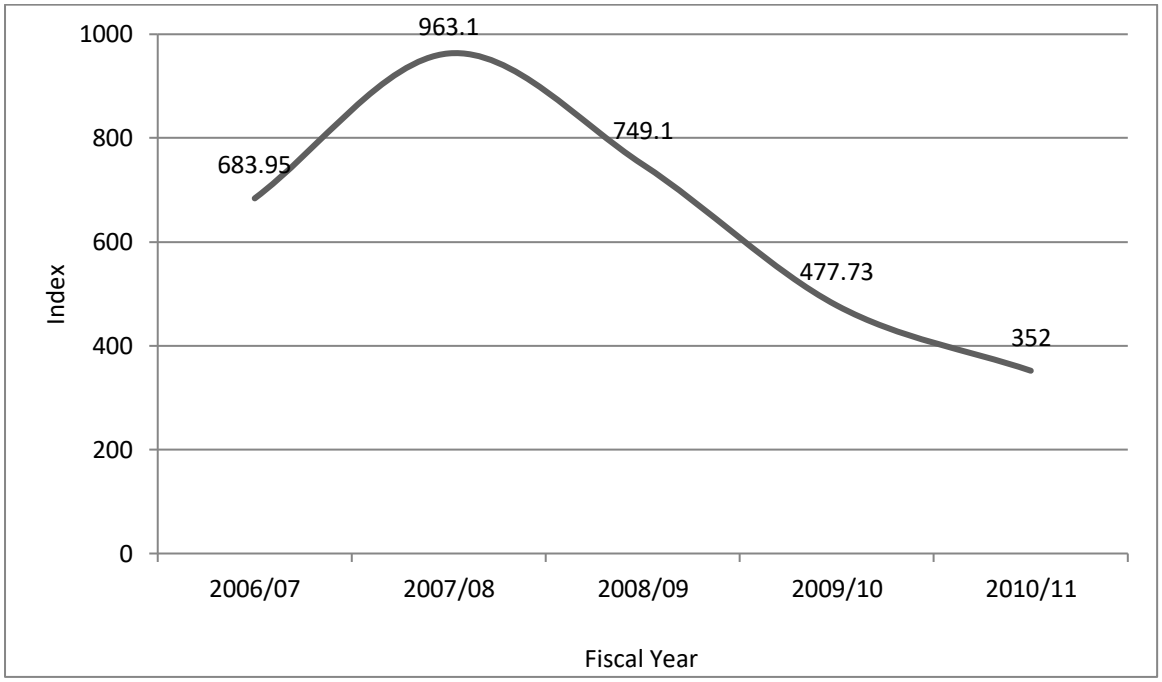
Fiscal Year	Index(in Point)
2005/06	386.83
2006/07	683.95
2007/08	963.1
2008/09	749.1
2009/10	477.73
2010/11	352

Source: www.nepse.com.np

NEPSE Index is calculated by considering all listed share including that of promoter share of all listed companies at NEPSE. NEPSE Index was in increasing trend during the F/Y 2005/2006. It went on increasing and reached the maximum point at 963.10 in the F/Y 2007/2008. Slowly, the index went on drooping and reached at 352 at F/Y 2010/11. It shows that the market is very sensitive in current days of particular year.

Figure 4.4

Movement of NEPSE Index



Above diagram shows the trend line of NEPSE index movement from 2006/07 to year 2010/11. This show the increasing upwards NEPSE index from F/Y

2006/07 to 2007/08 but then after, the market movement went downward and NEPSE index falls less than 500 i.e. 352 point in current days.

4.2.1 Expected Return, S.D. and C.V. of Market Returns

Table 4.11

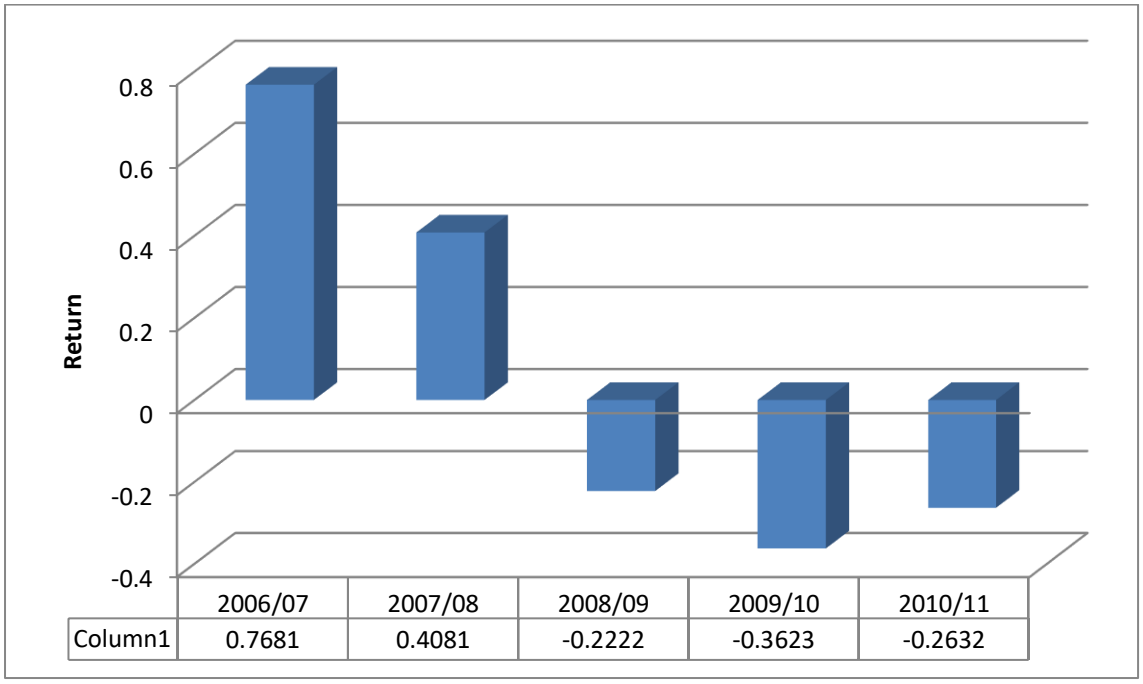
Expected Return, S.D. and C.V. of Market Returns

Statistical Tools					Value
Expected return					0.0657
Standard Deviation					0.4438
Coefficient of Variation					6.755
Fiscal Year	2006/07	2007/08	2008/09	2009/10	2010/11
Market Return	0.7681	0.4081	-0.2222	-0.3623	-0.2632

Expected market return 26.67%, total risk 11.04% and C.V of return is 0.4140.

Figure 4.5

Movement of Market Return



The above diagram shows that the market return is positive and highest in Fiscal year 2010/11 (i.e. 40.79%), lowest return in 2006/07 (9.36%) and increased to positive value fiscal year 2007/08 (i.e. 27.95%) and in fiscal year 2008/09 it increased to 34.94 % and fiscal year 2009/10 the market rate of return is decreased but positive (i.e. 20.31%).

4.3 Comparative Analysis of Sample Commercial Bank Based on Expected Return, Standard Deviation and C.V

Table 4.12

Expected Rate of Return, Standard Deviation and C.V of Sample Banks

S.N	Banks	Expected Return	Standard Deviation	C.V
1	EBL	36.904%	60.86%	1.6861
2	KBL	15.97%	66.80%	4.1817
3	NIBL	21.758%	55.56%	2.5535

Source-Annex 2

Table shows the comparison of Expected Returns, Standard Deviation and the Co-efficient of Variation between 3 Commercial Sampled Banks. The Statistical results imply that over the study period, EBL has the highest expected return i.e 36.904%. The lowest expected return is 15.97% which is observed in KBL. Based on Standard deviation (risk) securities of sample banks, the standard deviation of the return on the shares of NIBL is the lowest one. Looking at the coefficient of variation, the share of the EBL has the lowest risk per unit of return; the highest is at KBL. Investment in EBL is the most desirable among 3 because for 1 unit of return, investors should bear only1.6861 unit of risk.

4.4 Market Sensitivity (Beta co-efficient Analysis)

Market sensitivity of the stock is explained by its beta coefficient. Beta coefficient (β) measures how much systematic risk on the assets has. It measures the responsiveness of a security to movement in the market and shows the volatility of the stock which cannot be diversifiable. Beta coefficient of the market is always equal to 1.

Table 4.13

Beta Co-efficient of three Commercial Banks

S.No	Sampled Banks	Beta(β)	Types of Stock
1	EBL	1.342	Aggressive
2	KBL	1.4284	Aggressive
3	NIBL	1.1746	Aggressive

According to table , the beta of EBL, KBL and NIBL are 1.342, 1.4284 and 1.1746 respectively which is greater than 1. These are highly sensitive with market as the beta is positive. It means if the banking sector return rises, the stock return of all three

banks will also rises. If the banking return rises by 1%, then the stock return of EBL, KBL and NIBL will rise by about 1.324%, 1.428% and 1.1746% respectively and vice-versa. KBL has the highest beta coefficient with the banking sector. That means its stock moves more sensitive than other 2 sampled banks' beta. The stock of NIBL has the lowest beta co-efficient with banking sector which means that its stocks are less sensitive than others. Thus, comparing the beta coefficient of 3 commercial banks, we can say that the stock of KBL is more risky and the stock of NIBL is less risky than other banking sector.

4.5 Analysis of Required Rate of Return

Price evaluation determines the overpriced and under-priced of stock. The comparison of required of return and expected rate of return gives the result of overpriced, under-priced and correctly price stock. There are three conditions of price evaluation, they are as follows:-

Expected rate of return > Required rate of return = Under-price

Expected rate of return = Required rate of return = Correct price

Expected rate of return < Required rate of return = Overprice

For the price evaluation, we have to calculate the required rate of return. The required rate of return can be calculated as

$$E(R_j) = R_f + [E(R_m) - R_f]\beta_j$$

Where,

R_f = Risk free rate of return

$E(R_m)$ = Expected market rate of return

In the above equation the risk free rate of return (R_f) is needed to determine. The interest rate of Treasury bill issued by Nepal Rastra Bank is taken as R_f in Nepal. As given in annual report of NRB, in F/Y 2010/11, the weighted average interest rate of 91 days treasury bills remained at 7.41% while it was 6.50% in the previous year. Hence the requirements for the equations are:

R_f = Risk free rate of return = 7.41%

$E(R_m)$ = Expected market rate of return = 6.57%

Table 4.14

Required Rate of Return, Expected Rate of Return and Price Evaluation

Banks	Beta	$E(R_j) = R_f + [E(R_m) - R_f]\beta_j$	Expected Return	Price Evaluation
EBL	1.342	6.282	36.90%	underpriced
KBL	1.428	6.210	15.97%	underpriced
NIBL	1.174	6.423	21.75%	underpriced

From the all above table all the stocks are under priced. So, all the commercial banks are in demand and are investment opportunities. The investors can gain from buying the under priced stock. But the price of stocks will increase only up to the point where expected rate of return equal to required rate of return.

4.6 Analysis of Systematic Risk and Unsystematic Risk of Sampled Banks

The total risk of the sampled commercial banks can be classified into systematic risk and unsystematic risk. We can further partition the total risk which is shown in the table below in percentage basis.

Table 4.15

Partition of SR and USR in Total Risk of 3 Sampled Banks

S.N	Bank	Portion of SR(%)	Portion of USR(%)
1	EBL	95.76	4.24
2	KBL	90.04	9.96
3	NIBL	88.01	11.98

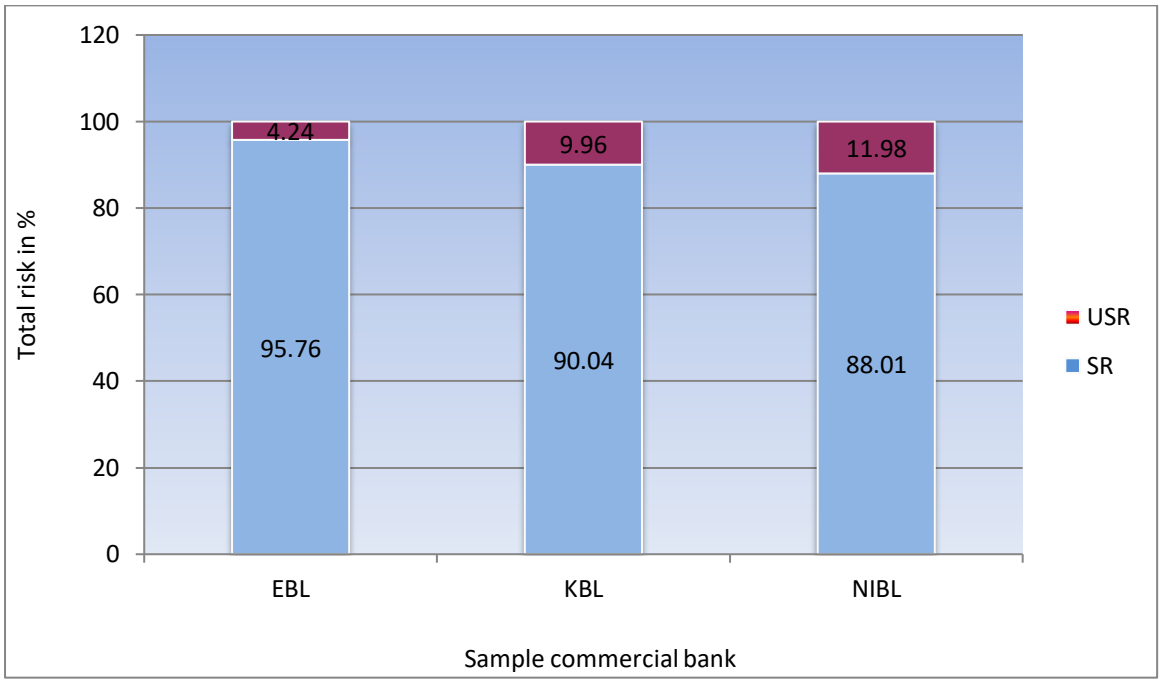
Source: Annex 4

Table shows that partition of Total risk into two part i.e. systematic risk and unsystematic risk, NIBL stock has lowest SR and more portion of USR which shows its poor management capability because unsystematic risk arises from internal factor which can be eliminated. All 3 sampled commercial banks have more SR than USR. The table shows clearly that all the sampled banks are efficient enough to manage and diversify its internal affairs and hence their unsystematic risk is less compared to systematic risk but because of market risk or macro economic factors

like inflation, interest rate, severe political instability, etc., their systematic risk which cannot be diversified, is more. In terms of internal management capability, EBL is the best among 3 banks I've chosen because its unsystematic risk is the least i.e only 4.24%.

Figure 4.6

Partition of SR and USR in Total Risk of 3 Sample Banks



The Diagram shows that selected three sampled banks have greater SR than USR. The unsystematic risk can be eliminated from portfolio creation at investment but systematic risk cannot be diversifiable. From the calculation EBL has the highest SR(95.76%) and the lowest USR(4.24%), and NIBL has lowest SR(88.01%) and highest USR(11.98%).

4.7 Analysis About Creating Optimal Portfolio

The portfolio is the holding of securities and investment in different financial assets i.e.bond, common stock. Portfolio management is related to efficient portfolio investment in financial assets. If portfolio is being constructed, they can reduce unsystematic risk without losing considerable return. The portfolio analysis is performed to develop a portfolio that has the maximum return at whatever level of risk an investor thinks appropriate. Therefore, we need to extend our analysis about creating an optimal portfolio to search for the better investment. The very

study takes into consideration of 3 portfolio creation between two banks separately EBL and KBL,KBL and NIBL, and EBL and NIBL for creating optimal portfolio which will minimizes the risk and maximize the return.

Table 4.16

Tabulation of Portfolio Risk and Return on Different Weight Invested in EBL and NIBL

Investment Proportion in EBL(Wa)	Investment Proportion in NIBL (Wb)	Return Portfolio(R_p)	Standard Deviation(σ_p)
1	0	0.3609	0.6085
.75	.25	0.3250	0.5856
.50	.50	0.2892	0.5689
.25	.75	0.2534	0.5587
0	1	0.2175	0.5556

Source: Annex 6

According to table, we get return portfolio and standard deviation portfolio from investing different proportions in EBL and NIBL. The maximum return portfolio is 36.09%, if all investment is made into EBL and minimum standard deviation is 55.56%, if all invested into NIBL. Once we know that which securities are to be included in the optimal portfolio we must calculate the percent to be invested in each security. For optimal portfolio, the percentage invested in each security is calculated by using the following formula:

$$Wa = \frac{\sigma a^2 - COV(R_a R_b)}{\sigma a^2 + \sigma b^2 - 2COV(R_a R_b)}$$

Where,

W_a =Optimal weight to invest in stock a

W_b = Optimal weight to invest in stock b

σ_a^2 =Variance of stock a

σ_b^2 =Variance of stock b

$COV(R_aR_b)$ =Covariance of returns between stock a and b

Table 4.17

Investment Proportion

Return Portfolio and Standard deviation between EBL and KBL

Weight of EBL	Weight of KBL	Return Portfolio(R_p)	S.D(σ_p)
54.68%	45.32%	27.41%	63.30%

Source: Annex 6,7

Table 4.18

Investment Proportion

Return Portfolio and Standard Deviation between KBL and NIBL

Weight of KBL	Weight of NIBL	Return Portfolio(R_p)	S.D(σ_p)
40.81%	59.19%	19.40%	57.62%

Source: Annex 8

Table 4.19

Investment Proportion

Return Portfolio and Standard Deviation between EBL and NIBL

Weight of EBL	Weight of NIBL	Return Portfolio(R_p)	S.D(σ_p)
45.41%	54.59%	28.62%	56.65%

Source: Annex 9

Table shows that the return portfolio and standard deviation portfolio of sample banks taken for the study. If 54.68% investment is made in EBL and 45.32% in KBL then the portfolio return will be 27.41% and portfolio standard deviation will be 63.30%. Similarly, if 40.81% invested in KBL and 59.19% in NIBL then the return will be minimum of 19.40% and the standard deviation will be 57.62%. And the last portfolio combination of the study is between EBL and NIBL. If investment of 45.41% is made on EBL and 54.59% on NIBL its return portfolio is 28.62% and 56.65% of standard deviation respectively. In comparison to three portfolios so created above, the best portfolio so far made is between EBL and NIBL.

In conclusion, to be optimal portfolio, 45.41% should be invested in EBL and rest i.e.54.59% should be invested in NIBL having the optimal portfolio Return as 28.62% with risk or standard deviation 56.65% which is the optimal combination of portfolio among the three portfolio combinations.

Table 4.20

Tabulation of Major Findings

Result	EBL	KBL	NIBL	Remarks
Expected Rate of Return ($\bar{R}_j$)	36.90%	15.97%	21.75%	Highest Return=EBL Lowest Return=KBL
Standard Deviation(σ)	60.86%	66.80%	55.56%	Highest Risk=KBL Lowest Risk=NIBL
Coefficient of variation(C.V)	1.6861	4.1817	2.5535	Highest C.V=KBL Lowest C.V=EBL
Correlation of coefficient (r_{jm})	0.9789	0.9492	0.9384	Highest Correlation=EBL Lowest Correlation=NIBL
Beta Coefficient(β)	1.342	1.4284	1.1746	Highest Beta=KBL Lowest Beta=NIBL
Proportion of SR	35.47%	40.18%	27.17%	Highest SR=KBL Lowest SR=NIBL
Proportion of USR	1.569%	4.44%	3.69%	Highest USR=KBL Lowest USR=EBL

4.8 Major Findings of the Study

On the basis of the above analysis and presentation of data, the major findings of the study is as below,

- The common stock of listed commercial banks have evaluated in terms of risk and return. The return is the income provided by the stock. EBL has the highest rate of return with 36.90% while it's the lowest of 15.97%% in case of KBL. NIBL's return is moderate i.e. 21.75%The expected return of the common stock of EBL is maximum due to increase in price of share in the secondary market and is also affected by the issue of bonus share and the minimum return is due to decrease in share price and distribution of low amount of dividend per share.
- The risk of assets can be measured quantitatively using statistics standard deviation and coefficient of variation. Standard deviation is the strong statistical device to measured total risk involve in an investment that consists of both market risk and diversifiable risk.KBL has the highest 66.80% of risk or standard deviation while NIBL is the least risky as it consists of 55.56% keeping EBL's risk at 60.86% moderate.
- Co-efficient of Variation Analysis has resulted that the highest risk is borne by investor of KBL where for one unit return, the risk is 4.1817 while it is the

lowest for EBL of 1.6861. C.V of NIBL has remained at 2.5535 as moderate.

- From the analysis of correlation coefficient of stock, there is no perfect positive and perfect negative correlation coefficient between the stock of two banks. All 3 sampled commercial banks' relation with NEPSE index shows positive relation. In terms of correlation of co-efficient, EBL has the highest positive relation i.e.97.89% and NIBL has the minimum positive relation i.e. 93.84% with the NEPSE index.
- All the 3 sampled commercial banks have Unsystematic Risk which can be diversifiable. The highest USR is 4.44% of KBL where the USR of EBL is 1.569%. KBL consists of 40.18% of SR from total risk whereas it's the lowest of NIBL is 27.17%.
- From the analysis all three sampled banks are aggressive (i.e. market sensitive), to the market changes as evaluated by the beta co-efficient of 1.4284 of KBL following EBL's beta at 1.342 as second and NIBL as third with 1.1746 beta co-efficient.
- If 54.68% investment is made in EBL and 45.32% in KBL then the portfolio return will be 27.41% and portfolio standard deviation will be 63.30%. Similarly, if 40.81% invested in KBL and 59.19% in NIBL then the return will be minimum of 19.40% and the standard deviation will be 57.62%. And the last portfolio combination of the study is between EBL and NIBL. If investment of 45.41% is made on EBL and 54.59% on NIBL its return portfolio is 28.62% and 56.65% of standard deviation respectively. In comparison to three portfolios so created above, the best portfolio so far made is between EBL and NIBL.
- To be optimal portfolio, 45.41% should be invested in EBL and rest i.e.54.59% should be invested in NIBL having the optimal portfolio Return as 28.62% with risk or standard deviation 56.65% which is the optimal combination of portfolio among the three portfolio combinations.

In conclusion, the major finding of this very study is about the analysis of Risk and Return of sampled commercial bank. We can conclude that return of EBL is higher than other selected commercial bank and risk is higher in KBL so it is better to invest either in EBL or in NIBL. Or if investor thinks about investing in portfolio then EBL and NIBL will be best combination.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The last chapter of this study explains the overall analysis of the topic Risk and Return analysis. This chapter represents the analysis in summarized way, drafts a conclusion and provides vital recommendation to the readers.

Risk and Return, a new complex concept, is also foundation of modern investment decision. Here, risk is defined as the variability of the return of a period. The greater the variability of the return the riskier the investment would be whereas an investment involves the sacrifice of current rupees for future rupees or reward that future rupees or reward is called the return. It includes both current income and capital gains or losses that arise due to the increase or decrease on price of the security (common stock). So to maximize the security price, the financial manager must learn to assess two key determinants: risk and return. It becomes easier when there is existence of developed and healthy stock market.

Investors of common stock are ultimate owner of the company, who are ultimately associated with the risk and return. At present, every investment has the risk factor. Investors have to minimize the risk and maximize the return. For this, investors consciously examine the behavior of stock return and ultimate risk associated with it and then invests their fund in efficient portfolio from which they can realize higher return with lower risk.

This study mainly aims to examine the situation of securities market of Nepal and to evaluate the risk and return associated with common stock investment of selected commercial banks. The specific objective of this study are to analyse the risk and return associated with the common stock of commercial banks, to analyse and recommend the risk and return behaviour within and between commercial banks and to determinate effect of portfolio on risk and return.

Although many studies are already conducted to evaluate the risk and return on common stock investment of some banks, this study is based on 3 selected samples of

32 commercial banks listed in NEPSE. And financial statements are available for at least 5 years of study period the mentioned banks. This research work is based on secondary data provided by SEBON, NEPSE, and other publication related to source of information.

While analyzing risk and return in brief review of literature for the present study has been made and theoretical review and related studies where fundamental concept has been prepared to facilitate the study more accurate and effective. The study has also included research methodology to fulfill the objective of the present study. To analyze the standard deviation, beta coefficient, expected rate of return, coefficient variation have been calculated on the basis of major finding. Based on the derived conclusion a very useful recommendation has been made.

5.2 Conclusion

Based on the analysis and interpretations of various financial indicators of all the sampled banks in chapter four, the following conclusions have been drawn which are summarized below:

Comparing the expected rate of return, EBL has the highest rate of return with 36.90% while it's the lowest of 15.97% in case of KBL . KBL is the highest risky asset having 66.80%. of risk while NIBL is the least 55.56% of risk while EBL is the least security in terms of co-efficient of variation while KBL is the worst security in terms of CV. All 3 sampled commercial banks' relation with NEPSE index shows positive relation. In terms of correlation of co-efficient, EBL has the highest positive relation i.e. 97.89% and NIBL has the minimum positive relation i.e.93.84% with the NEPSE index. All the 3 sampled commercial banks have Unsystematic Risk which can be diversifiable. The highest USR is 4.44% of KBL where the USR of EBL is 1.569%. KBL consists of 40.18% of SR from total risk whereas it's the lowest of NIBL is 27.17%. From the analysis all three sampled banks are aggressive (i.e. market sensitive), to the market changes as evaluated by the beta co-efficient of 1.4284 of KBL following EBL's beta at 1.342 as second and NIBL as third with 1.1746 beta co-efficient.

Considering the market sectors risk and return, expected return of overall market index is 6.57% which is the lowest from the expected return of all 3 sampled banks

The risk found in NEPSE index is 44.38%, which represents the sensitivity on investment in the market sectors.

If 54.68% investment is made in EBL and 45.32% in KBL then the portfolio return will be 27.41% and portfolio standard deviation will be 63.30%. Similarly, if 40.81% invested in KBL and 59.19% in NIBL then the return will be minimum of 19.40% and the standard deviation will be 57.62%. And the last portfolio combination of the study is between EBL and NIBL. If investment of 45.41% is made on EBL and 54.59% on NIBL its return portfolio is 28.62% and 56.65% of standard deviation respectively. In comparison to three portfolios so created above, the best portfolio so far made is between EBL and NIBL.

To be optimal portfolio, 45.41% should be invested in EBL and rest i.e.54.59% should be invested in NIBL having the optimal portfolio Return as 28.62% with risk or standard deviation 56.65% which is the optimal combination of portfolio among the three portfolio combinations.

5.3 Recommendations

At the end of this study I would like to recommend some of the points which will be helpful for the individual investors who are going to invest their valuable capital in the market so that their wealth will be invest on right stocks. The following recommendations are prescribed on the basis of data analysis and major findings of this study.

- The common stock returns of commercial banks are highly sensitive to market. They are highly positively correlated to the market. So, market should be further analyzed by the investors to balance the risk and return properly.
- Generally, it is believed that higher the return, higher will be the risk. Investment risks are better covered through a large and diversified portfolio. Diversifying an investment is a way of reducing the risk. Here, all the risky sampled banks are recommended to diversify their investment policy in less risky securities.
- Nepalese investors are requested to develop an appropriate basis for their investment on common stock as per the requirement. They are recommended to invest their fund by performing multiple analysis.

- All investors are recommended to make two analyses: technical and fundamental analysis. Technical analysis gives result from market trend and price movement of common stock and fundamental analysis gives result from companies internal and external, all information and also recommends about rules and regulations of countries which impact directly and indirectly the market price of common stock where investors going to invest.
- Expected return recommends that banking sectors' common stocks are the best options for the investment as they are providing attractive rate of return
- Government should amend the rules and regulations regarding the stock market in time-to-time that ensures the protection of an individual investor's right. Such amendment is essential to make the act effectiveness with the pace of time and need to follow the implementation and supervision of rules and regulation to make sure the objective is achieved.
- According to the analysis of individual asset of bank, investors should invest their money in the assets which has lowest C.V, maximum expected return and medium risk. The market sensitivity of common stocks also helps to invest the funds, so it is better to invest the shares of beta less than 1(i.e. defensive stock).
- Investors must concern with the portion of systematic risk which arises from external factors which cannot be diversifiable but Unsystematic risk can be diversified. This type of risk arises from internal factor. Asset of EBL has the highest 95.76% systematic risk from the total risk. So EBL is recommended and NIBL has the lowest systematic risk but the highest unsystematic risk that shows weakness in management to deal with internal factors which have created unsystematic risk.
- Broker firms are good way to exchange and share investment ideas. Mutual fund is worthwhile for people with little interest in investment. Investors are recommended to share experiences, ideas and take view of expert before investing in stocks of individual banks
- Investors need to diversify their fund to reduce the risk. Proper construction of portfolio will reduce considerable potential loss, which can be defined in terms of the risk but portfolio construction is dynamic and difficult job. Thus, investors should select the stock that have higher return and negative correlation or near to zero correlation between different banks and sectors. The portfolio revision is

also necessary at certain interval time to get best return at lower risk.

- Before making an investment decision, it is recommended to visit and discuss with investment companies, with individual expert and researchers. Investors should make their investment decision because of reliable information or financial parameters of the related bank rather than imagination rumor.
- To the various banks, one of the major weaknesses are inefficient management system, low productivity, lack of transparency and slow decision making towards changing environment because of that caused high unsystematic risk. Hence, such type of banks are recommended to change their policy and strategy to make quick decision towards changing environment, apart from this international quality, develop high productivity, quality service and develop the efficient management system be transparent helps to reduce the unsystematic risk. The provisional balance sheet and annual general meeting give the information and strategy of the bank which send positive message in the market and help to increase the market demand of the share of the bank which increases the market price of the share finally increase the overall market capitalization of the bank.
- Other investment alternatives are also available in the market. Commodity market, real estate and gold are the investment alternatives. So, all the investors are recommended to make analyses about all which affect the market return. One should not completely remain on investing in shares and buildings apartments and housing only but also need to look for other better alternative of investments.
- It is recommended not to follow the general trend of buying and selling of the securities when it is going up and down because it is a risky strategy. The decision should be based on fact and figures rather use intuition and go blindly.
- Last but not the least, it is recommended to all the investors not to run after the financial institutions which provide maximum interest rate of return only. Some of them might be running at bad times. So, all the investors are recommended to invest in those institutions which guarantee the investors' investment though provided with low return. It is really a high time to focus on "Lower the risk, lower the return rather than higher the risk, higher the return".

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ANNEXURE

Annex-1

Calculation of Total Dividend

Total dividend in Rs=cash dividend +% of stock dividend X Next year's MPS

Everest Bank limited

Fiscal Year	MPS	Cash Dividend	Stock Dividend	Total Dividend(Rs)
2006/2007	2430	10	30	10+30%*3132=949.6
2007/2008	3132	20	30	20+30%*2455=756.5
2008/2009	2455	30	30	30+30%*1630=519
2009/2010	1630	30	30	30+30%*1094=358.2
2010/2011	1094	10	50	10+50%*1033=526.5
2011/2012	1033	-	-	-

Kumari Bank Limited

Fiscal Year	MPS	Cash Dividend	Stock Dividend	Total Dividend(Rs)
2006/07	830	1.05	21.05	1.05+21.05%*1005=212.06
2007/08	1005	0.53	10.53	0.53+10.53%*700=74.24
2008/09	700	0.55	10.58	0.55+10.58%*468=50.06
2009/10	468	12	12	12+12%*266=43.92
2010/11	266	0.44	8.44	0.44+8.44%*242=20.86
2011/12	242	-	-	-

Nepal Investment Bank ltd

Fiscal Year	MPS	Cash Dividend	Stock dividend	Total Dividend(Rs)
2006/07	1729	5	30	5+30%*2450=740
2007/08	2450	7.5	40.83	7.5+40.83%*1388=574.22
2008/09	1388	20	20	20+20%*705=161
2009/10	705	25	25	25+25%*515=153.75
2010/11	515	25	50	25+50%*511=280.5
2011/12	511	-	-	-

Annex-2

Calculation of Expected Return (R_j), Standard Deviation (σ) and C.V

Expected Return, S.D and C.V of EBL

Fiscal Year	Closing Price (MPS)	Total Dividend (D)	$R_j = \frac{P_{t+1} - P_t + D_t}{P_t}$	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$
2005/06	1379	-	-	-	-
2006/07	2430	949.6	1.4508	1.0899	1.1879
2007/08	3132	756.5	0.6002	0.2393	0.0573
2008/09	2455	519	-0.0504	-0.4113	0.1692
2009/10	1630	358.2	-0.1901	-0.551	0.3036
2010/11	1094	526.5	-0.0058	-0.3667	0.1345
		Total	$\sum Rj$=1.8047		$\sum(R - \overline{R})^2$= 1.8525

Expected Rate of Return ($\overline{R_j}$)= $\sum R_j/N$=1.8047/5= 0.36094 or 36.904%

The detail calculation of R_j for each F/Y of EBL

F/Y 2006/07 $\frac{949.6+2430-1370}{1370}$ =1.4508

2007/08 = $\frac{756.5+3132-2430}{2430}$ =0.6002

2008/09 = $\frac{519+2455-3132}{3132}$ =-0.0504

2009/10 = $\frac{358.2+1630-2455}{2455}$ =-0.1901

2010/2011= $\frac{526.5+1094-1630}{1630}$ = -0.0058

For Standard Deviation, $\sigma_j = \sqrt{\frac{\sum(\mathbf{R_j}-\overline{\mathbf{R}}_\mathbf{j})^2}{\mathbf{N}}} = \sqrt{\frac{1.8525}{5}}$ =0.6086

For Coefficient of Variation(C.V)= $\frac{\sigma}{R_j}$ =$\frac{0.6086}{0.36094}$ = 1.6861

Expected return, S.D and C.V of KBL

Fiscal Year	Closing price (MPS)	Total Dividend (D)	$R_j = \frac{P_{t+1} - P_t + D_t}{P_t}$	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$
2005/06	433	-	-	-	-j

2006/07	830	212.6	1.4079	1.2482	1.558
2007/08	1005	74.24	0.3003	0.1406	0.0198
2008/09	700	50.06	-0.2537	-0.4134	0.1709
2009/10	468	43.92	-0.2687	-0.4284	0.1835
2010/11	266	20.86	-0.3871	-0.5468	0.299
		Total	$\sum$Rj= 0.7987		$\sum(R-\overline{R})^2$= 2.2312

Expected Rate of Return($\sum\bar{R}_j$)= $\sum R_j/N$=0.7987/5 = 0.15974 or15.97%

The detail calculation of R_j for each F/Y ofKBL

F/Y 2006/07 $\frac{212.6+830-433}{433}$ =1.4079

2007/08= $\frac{74.24+1005-830}{830}$ =0.3003

2008/09: $\frac{50.06+700-1005}{1005}$ =-0.2537

2009/10= $\frac{43.92+468-700}{700}$ =-0.2687

2010/2011= $\frac{20.86+266-468}{468}$ = -0.3871

For Standard Deviation, $\sigma_j = \sqrt{\frac{\sum(\mathbf{R_j}-\bar{\mathbf{R}}_\mathbf{j})^2}{\mathbf{N}}} = \sqrt{\frac{2.2312}{5}}$ =0.6680

For Coefficient of Variation(C.V)= $\frac{\sigma}{R_j}$ =$\frac{0.6680}{0.15974}$ = 4.1817

Expected return, S.D and C.V of NIBL

Fiscal Year	Closing price (MPS)	Total Dividend (D)	$R_j = \frac{P_{t+1} - P_t + D_t}{P_t}$	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$
2005/06	1260	-	-	-	-
2006/07	1729	740	0.9595	0.7419	0.5504
2007/08	2450	574.22	0.7491	0.5315	0.2825
2008/09	1388	161	-0.3678	-0.5854	0.3427
2009/10	705	153.75	-0.3813	-0.5989	0.3587
2010/11	515	280.5	0.1284	-0.0892	0.008
		Total	$\sum Rj$=1.0879		$\sum(R - \overline{R})^2$= 1.5423

Expected Rate of Return($\sum \overline{R_j}$)= $\sum R_j/N$=1.0879/5 = 0.21758 or 21.758%

The detail calculation of R_j for each F/Y of NIBL

F/Y 2006/07 = $\frac{740+1729-1260}{1260}$ =0.9595

2007/08= $\frac{574.22+2450-1729}{1729}$ =0.7491

2008/09= $\frac{161+1388-2450}{2450}$ =-0.3678

2009/10= $\frac{153.75+705-1388}{1388}$ =-03813

2010/2011= $\frac{280.5+515-705}{705}$ = 0.1284

For Standard Deviation, $\sigma_j = \sqrt{\frac{\sum(R_j - \bar{R}_j)^2}{N}} = \sqrt{\frac{1.5432}{5}}$ =0.5556

For Coefficient of Variation(C.V)= $\frac{\sigma}{R_j}$ =$\frac{0.5556}{0.21758}$ = 2.5535

Annex-3

Calculation of Expected Return, S.D and C.V. of Market(NEPSE)

Fiscal Year	NI	$R_M = \frac{NI_{t+1} - NI_t}{NI_t}$	$(R_m - \overline{R_m})$	$(R_m - \overline{R_m})^2$
2005/06	386.83	-	-	-
2006/07	683.95	0.7681	0.7024	0.4934
2007/08	963.1	0.4081	0.3424	0.1172
2008/09	749.1	-0.2222	-0.2879	0.0829
2009/10	477.73	-0.3623	-0.428	0.1832
2010/11	352	-0.2632	-0.3289	0.1082
		$\sum R_m$=0.3285		$\sum(R_m - \overline{R_m})$=0.9849

Expected Rate of Return($\sum\overline{R_m}$)= $\sum R_m/N$=0.3285/5 = 0.0657 or 6.57%

The detail calculation of R_m for each F/Y of NEPSE

F/Y 2006/07 = $\frac{683.95-386.83}{386.83}$ =0.7681

2007/08= $\frac{963.10-683.95}{683.95}$ =0.4081

2008/09= $\frac{749.10-963.10}{963.10}$ =-0.2222

2009/10= $\frac{477.73-749.10}{749.10}$ =-0.3623

2010/2011= $\frac{352-477.73}{477.73}$ = -0.2632

For Standard Deviation, $\sigma_m = \sqrt{\frac{\sum(R_m-\bar{R}_m)^2}{N}} = \sqrt{\frac{0.9849}{5}}$ =0.4438

For Coefficient of Variation (C.V)= $\frac{\sigma m}{R_m}$ =$\frac{0.4438}{0.0657}$ = 6.755

Annex-4

Calculation of Co-Variance, Co-relation of Coefficient and Beta

Coefficient of Sample Banks

EBL and Market

Fiscal Year	$(R_j - \overline{R_j})$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})\,(R_m - \overline{R_m})$
2006/07	1.0899	0.7024	0.7655
2007/08	0.2393	0.3424	0.0819
2008/09	-0.4113	-0.2879	0.1184
2009/10	-0.551	-0.428	0.2358
2010/11	-0.3667	-0.3289	0.1206
			$(R_j - \overline{R_j})\,(R_m - \overline{R_m})$=1.3222

We have,

$$COV(R_jR_0) = \frac{\sum(R_j-\overline{R_j})(R_m-\overline{R_m})}{N} = \frac{1.3222}{5} = 0.2644$$

Co-relation coefficient between EBL and Market

$$r_{jm} = \frac{COV_{jm}}{\sigma_j.\sigma_m} = \frac{0.2644}{0.6086 \times 0.4438} = 0.9789$$

Beta coefficient between EBL and Market

$$\beta_j = \frac{COV(R_j,R_m)}{\sigma^2 m} = \frac{0.2644}{0.1970} = 1.342$$

KBL and Market

Fiscal Year	$(R_j - \overline{R_j})$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})\,(R_m - \overline{R_m})$
2006/07	1.2482	0.7024	0.8767
2007/08	0.1406	0.3424	0.0481
2008/09	-0.4134	-0.2879	0.119
2009/10	-0.4284	-0.428	0.1834
2010/11	-0.5468	-0.3289	0.1798
			$(R_j - \overline{R_j})\,(R_m - \overline{R_m})$=1.407

We have,

$$COV(R_j R_m) = \frac{\sum(R_j - \overline{R_j})(R_m - \overline{R_m})}{N} = \frac{1.407}{5} = 0.2814$$

Co-relation coefficient between KBL and Market

$$r_{jm} = \frac{COV_{jm}}{\sigma_j . \sigma_m} = \frac{0.2814}{0.6680 \times 0.4438} = 0.9492$$

Beta coefficient between KBL and Market

$$\beta_j = \frac{COV(R_j, R_m)}{\sigma^2 m} = \frac{0.2814}{0.1970} = 1.4284$$

NIBL and Market

Fiscal Year	$(R_j - \overline{R_j})$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
2006/07	0.7419	0.7024	0.5211
2007/08	0.5315	0.3424	0.182
2008/09	-0.5854	-0.2879	0.1685
2009/10	-0.5989	-0.428	0.2563
2010/11	-0.0892	-0.3289	0.0293
			$(R_j - \overline{R_j})(R_m - \overline{R_m})$=1.1572

We have,

$$COV(R_jR_m) = \frac{\sum(R_j-\overline{R_j})(R_m-\overline{R_m})}{N} = \frac{1.1572}{5} = 0.2314$$

Co-relation coefficient between NIBL and Market

$$r_{jm} = \frac{COV_{jm}}{\sigma_j.\sigma_m} = \frac{0.2314}{0.5556 \times 0.4438} = 0.9384$$

Beta coefficient between NIBL and Market

$$\beta_j = \frac{COV(R_j,R_m)}{\sigma^2{}_m} = \frac{0.2314}{0.1970} = 1.1746$$

Calculation of Systematic and Unsystematic Risk

EBL

SR = $\beta 2_{EBL}$ $\sigma 2_{NEPSE}$ = (1.342)2 × (0.4438)2 = 0.3547 i.e 35.47 %

USR = $\sigma 2_{EBL}$ –SR = (0.6086)2 – 0.3547 =0.01569 i.e1.569 %

KBL

SR = $\beta 2_{KBL}$ $\sigma 2_{NEPSE}$ = (1.4284)2 × (0.4438)2 = 0.4018 i.e 40.18 %

USR = $\sigma 2_{KBL}$ –SR = (0.6680)2 – 0.4018 =0.0444 i.e 4.44 %

NIBL

SR = $\beta 2_{NIBL}$ $\sigma 2_{NEPSE}$ = (1.1746)2 × (0.4438)2 =0.2717 i.e 27.17 %

USR = $\sigma 2_{NIBL}$ –SR = (0.5556)2 – 0.2717 = 0.0369 i.e 3.69%

Calculation of Proportion of systematic and unsystematic Risk

EBL

Proportion of Systematic Risk from the total risk

$$= \frac{SR}{\sigma^2_{EBL}} = \frac{0.3547}{(0.6086)^2} = 0.9576 \text{ or } 95.76\%$$

Proportion of USR =1-Proportion of SR

=1-0.9576

=0.0424 or 4.24%

KBL

Proportion of Systematic Risk from the total risk

$$= \frac{SR}{\sigma^2_{KBL}} = \frac{0.4018}{(0.6680)^2} = 0.9004 \text{ or } 90.04\%$$

Proportion of USR =1-Proportion of SR

=1-0.9004

=0.0996 or 9.96%

NIBL

Proportion of Systematic Risk from the total risk

$$= \frac{SR}{\sigma^2_{NIBL}} = \frac{0.2717}{(0.5556)^2} = 0.8801 \text{ or } 88.01\%$$

Proportion of USR =1-Proportion of SR

=1-0.8801

=0.1198 or 11.98%

Annex-5

Calculation of Covariance between EBL and KBL

EBL and KBL

Fiscal Year	$(R_{EBL} - \overline{R_{EBL}})$	$(R_{KBL} - \overline{R_{KBL}})$	$(R_{EBL} - \overline{R_{EBL}})(R_{KBL} - \overline{R_{KBL}})$
2006/07	1.0899	1.2482	1.3604
2007/08	0.2393	0.1406	0.0336
2008/09	-0.4113	-0.4134	0.1700
2009/10	-0.551	-0.4284	0.2360
20010/11	-0.3667	-0.5468	0.2005
			$(R_{EBL} - \overline{R_{EBL}})(R_{KBL} - \overline{R_{KBL}})$=2.00058

Covariance between EBL and KBL

$COV(R_{EBL}R_{KBL}) = \frac{(R_{EBL} - \overline{R_{EBL}})(R_{KBL} - \overline{R_{KBL}})}{N}$ $\frac{2.00058}{5}$=0.4001

EBL and NIBL

Fiscal Year	$(R_{EBL} - \overline{R_{EBL}})$	$(R_{NIBL} - \overline{R_{NIBL}})$	$(R_{EBL} - \overline{R_{EBL}})(R_{NIBL} - \overline{R_{NIBL}})$
2006/07	1.0899	0.7419	0.8086
2007/08	0.2393	0.5315	0.1272
2008/09	-0.4113	-0.5854	0.2408
2009/10	-0.551	-0.5989	0.3299
20010/11	-0.3667	-0.0892	0.0327
			$(R_{EBL} - \overline{R_{EBL}})(R_{NIBL} - \overline{R_{NIBL}})$=1.53929

Covariance between EBL and NIBL

$$COV(R_{EBL}R_{NIBL}) = \frac{(R_{EBL} - \overline{R_{EBL}})(R_{NIBL} - \overline{R_{NIBL}})}{N}$$

KBL and NIBL

Fiscal Year	$(R_{KBL} - \overline{R_{KBL}})$	$(R_{NIBL} - \overline{R_{NIBL}})$	$(R_{KBL} - \overline{R_{KBL}})(R_{NIBL} - \overline{R_{NIBL}})$
2006/07	1.2482	0.7419	0.9260
2007/08	0.1406	0.5315	0.0747
2008/09	-0.4134	-0.5854	0.2420
2009/10	-0.4284	-0.5989	0.2566
20010/11	-0.5468	-0.0892	0.0488
			$(R_{KBL} - \overline{R_{KBL}})(R_{NIBL} - \overline{R_{NIBL}})$=1.5481

Covariance between KBL and NIBL

$COV(R_{KBL}R_{NIBL}) = \frac{(R_{KBL} - \overline{R_{KBL}})(R_{NIBL} - \overline{R_{NI}}}{N}$ $\frac{1.5481}{5}$=0.3096

Annex-6

Calculation of Return and Risk Portfolio of EBL and NIBL Bank

Let EBL be a and NIBL be b

If Wa = 1 and Wb = 0

$(R_p) = W_a E(R_a)+W_b E(R_b)$

$R_p=1\times 0.36094+0\times 0.21758=0.36094$

Return Portfolio $\sigma_p = \sqrt{\sigma_{a^2Wa^2} + \sigma_{b^2Wb^2} + 2COV(R_aR_b)}W_aW_b$

$=\sqrt{(0.6086)^2\times(1)^2+(0.5556)^2\times(0)^2+2\times 0.3078}\times 1\times 0=0.6085$

If Wa = 0.75 and Wb = 0.25

$R_p=0.75\times 0.36094+0.25\times 0.21758=0.3250$

$\sigma_p= \sqrt{(0.6086)^2\times(0.75)^2+(0.5556)^2\times(0.25)^2+2\times 0.3078\times 0.75\times 0.25}$

$=0.5856$

If Wa = 0.50 and Wb = 0.50

$R_p=0.50\times 0.36094+0.50\times 0.21758=0.2892$

$\sigma_p= \sqrt{(0.6086)^2\times(0.50)^2+(0.5556)^2\times(0.50)^2+2\times 0.3078\times 0.50\times 0.50}$

$=0.5689$

If Wa = 0.25 and Wb = 0.75

$R_p=0.25\times 0.36094+0.75\times 0.21758=0.2534$

$\sigma_p= \sqrt{(0.6086)^2\times(0.25)^2+(0.5556)^2\times(0.75)^2+2\times 0.3078\times 0.75\times 0.25}$

$=0.5587$

If Wa = 0 and Wb = 1

$R_p=0\times 0.36094+1\times 0.21758=0.21758$

$\sigma_p= \sqrt{(0.6086)^2\times(0)^2+(0.5556)^2\times(1)^2+2\times 0.3078\times 0}\times 1$

$=0.5556$

Annex-7

Calculation of Optimal Portfolio from sample banks

Calculation of Proportion of Investment in

EBL and KBL for Portfolio creation

Let EBL be a and KBL be b, then

$$Wa = \frac{\sigma b^2 - COV(R_a R_b)}{\sigma a^2 + \sigma b^2 - 2COV(R_a R_b)}$$

$$W_b = 1 - W_a$$

Where,

W_a= Weight of EBL that maximizes the portfolio risk of a and b

W_b= Weight of KBL that maximize the portfolio risk of a and b

σ_a =Standard deviation of EBL

σ_b= Standard deviation of KBL

COV(R_a R_b)= Co variance between EBL and KBL

$$W_a = \frac{(66.80)^2 - 40.01}{(60.86)^2 + (66.80)^2 - 2\times 40.01} = \frac{4422.23}{8086.159} = 0.5468 = 54.68\%$$

W_b= 1-W_a= 1-0.5468=0.4531 i.e 45.32%

Now,

Calculation of Return and Standard deviation Portfolio

(R_p) = W_a E(R_a)+W_bE(R_b)

=0.5468×0.3690+0.4532×0.1597

=0.2741 i.e 27.41%

$$\sigma_p = \sqrt{\sigma_{a^2} W_{a^2} + \sigma_{b^2} W_{b^2} + 2COV(R_a R_b) W_a W_b}$$

$=\sqrt{(0.6086)^2\times(0.5468)^2+(0.6680)^2\times(0.4532)^2+2\times 0.4001\times 0.5468\times 0.4532}$

=0.6330 i.e 63.30%

Annex-8

Calculation of Proportion of Investment in

KBL and NIBL for Portfolio Creation

Let KBL be a and NIBL be b, then

$$Wa = \frac{\sigma b^2 - COV(R_a R_b)}{\sigma a^2 + \sigma b^2 - 2COV(R_a R_b)}$$

$$W_b = 1 - W_a$$

Where,

W_a= Weight of KBL that maximizes the portfolio risk of a and b

W_b= Weight of NIBL that maximize the portfolio risk of a and b

σ_a =Standard deviation of KBL

σ_b= Standard deviation of NIBL

$COV(R_a R_b)$= Co variance between KBL and NIBL

$$W_a = \frac{(55.56)^2 - 30.96}{(66.80)^2 + (55.56)^2 - 2\times 30.96} = \frac{3055.95}{7487.23} = 0.4081 = 40.81\%$$

W_b= 1-W_a= 1-0.4081=0.5919 i.e 59.19%

Now,

Calculation of Return and Standard deviation Portfolio

$(R_p) = W_a E(R_a) + W_b E(R_b)$

=0.4081×0.1597+0.5919×0.2175

=0.1940 i.e 19.40%

$$\sigma_p = \sqrt{\sigma_{a^2} W a^2 + \sigma_{b^2} W b^2 + 2COV(R_a R_b) W_a W_b}$$

$=\sqrt{(0.6680)^2\times(0.4081)^2+(0.5556)^2\times(0.5919)^2+2\times 0.3096\times 0.4081\times 0.5919}$

=0.5762 i.e 57.62%

Annex-9

Calculation of Proportion of Investment in

EBL and NIBL for Portfolio Creation

Let KBL be a and NIBL be b, then

$$Wa = \frac{\sigma b^2 - COV(R_a R_b)}{\sigma a^2 + \sigma b^2 - 2COV(R_a R_b)}$$

$$W_b = 1 - W_a$$

Where,

W_a= Weight of EBL that maximizes the portfolio risk of a and b

W_b= Weight of NIBL that maximize the portfolio risk of a and b

σ_a =Standard deviation of EBL

σ_b= Standard deviation of NIBL

COV(R_a R_b)= Co variance between EBL and NIBL

$$W_a = \frac{(55.56)^2 - 30.78}{(60.86)^2 + (55.56)^2 - 2\times 30.78} = \frac{3056.13}{6729.29} = 0.4541 = 45.41\%$$

W_b= 1-W_a= 1-0.4541=0.5459 i.e 54.59%

Now,

Calculation of Return and Standard deviation Portfolio

(R_p) = W_a E(R_a)+W_bE(R_b)

=0.4541×0.3690+0.5459×0.2175

=0.2862 i.e 28.62%

$$\sigma_p = \sqrt{\sigma_{a^2} W_{a^2} + \sigma_{b^2} W_{b^2} + 2COV(R_a R_b)} W_a W_b$$

$=\sqrt{(0.6086)^2\times(0.4541)^2+(0.5556)^2\times(0.5459)^2+2\times 0.3078\times 0.4541\times 0.5459}$

=0.5665 i.e 56.65%

ABBREVIATIONS

B.S	:	Bikram Sambat
C.S	:	Common Stock
C.V	:	Coefficient of Variation
CAPM	:	Capital Assets Pricing Model
Div	:	Dividend
DPS	:	Dividend Per Share
EBL	:	Everest Bank Ltd
EPS	:	Earning Per Share
HPR	:	Holding Period Return
i.e	:	That is
KBL	:	Kumari Bank Ltd
MPS	:	Market Price Per Share
NEPSE	:	Nepal Stock Exchange
NI	:	NEPSE Index
NIBL	:	Nepal Investment Bank Ltd
NRB	:	Nepal Rastra Bank
Rf	:	Risk Free Rate
SEBO	:	Security Board
SML	:	Security Market Line
SR	:	Systematic Risk
T.U	:	Tribhuvan University
USR	:	Unsystematic Risk