PORTFOLIO ANALYSIS OF COMMON STOCK INVESTMENT OF NEPALESE COMMERCIAL BANKS

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RECOMMENDATION

This is to certify that the thesis

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

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VIVA-VOCE SHEET

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

Master's Degree in Business Studies (MBS)

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DECLARATION

I hereby declare that the work reported in this thesis entitled **"Portfolio Analysis of Common Stock Investment of Nepalese Commercial Banks"** submitted to Office of the Dean, Faculty of Management, Tribhuvan University is my original work done for the partial fulfillment of the requirements for the Master's Degree of Business studies (M.B.S.) under the supervision and guidance of **Dr. Sushil Bhakta Mathema** of Nepal Commerce Campus.

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Researcher

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ABBREVIATIONS

Bet^n	-	Between
CAPM	-	Capital Assets Pricing Model
CBs	-	Commercial Banks
COV	-	Covariance
CV	-	Coefficient of Variation
EBL	-	Everest Bank Ltd.
Ed	-	Edition
FY	-	Fiscal Year
HBL	-	Himalayan Bank Ltd.
i.e.	-	That is
LTD	-	Limited
Mgmt.	-	Management
NBL	-	Nepal Bank Ltd.
NEPSE	-	Nepal Stock Exchange
No.	-	Number
NRB	-	Nepal Rastra Bank
Pvt.	-	Private
SCBNL	-	Standard Chartered Bank Ltd.
SD	-	Standard Deviation
SEBON	-	Security Board of Nepal
SML	-	Security Market Line
TU	-	Tribhuvan University

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The nature of bank fund and its payment depends upon day-to-day operation. Therefore, its operation of fund raising and investments of funds are of short-term nature. As long term, investments are associated with higher risk. Banks are confined to make short-term investments only. R W Goldsmith suggests that significance of commercial banks is greater in countries of comparatively lower level of economic development. The shares of commercial banks in the net issues of all financial institution are much higher in such countries in the ones with higher stage of economic development. There are different types of securities as treasury bills, long term government bonds long term corporate bonds, common stocks etc. among these securities this study concerns with common stocks. Common stocks represent a commitment on the part of a corporation to pay periodically whatever its board of directors deems appropriate as a cash dividend.

For the growth of the economy of any country, private sector as well as public sector both can play the vital role. Integrated and speedily development of the country is possible only when competitive banking service reaches each and every corners of the country. Commercial banks occupy an important place in the framework of every economy because they provide capital for the development of industry, trade, business and other resources deficit sectors by investing the deposit as saving collected. All the economic activities of each and every country are greatly affected by the commercial banking business of the country.

Commercial banks play an important role in the directing the affair of the economy in various ways. The operations of commercial banks record the economic plus of the economy. The size and composition of their transitions mirror the economic happenings in the country. For example, the mass failures of commercial banks during the 1930s reflected the phenomenon of severe global depression in the world. Commercial banks have played a vital role in giving the direction to economy's

development over time by financing the requirements of trade and industry in the country. By encouraging thrift among people, banks have fostered the process of capital formation in the country. In the context of deposit mobilization, given the saving income ratio, commercial bank induce the savers in the community to hold their saving in the form of socially useful assets of which bank deposits constitute the most important element. Commercial banks draw the community savings into the organized sector which can then be allocated among the different economic activities according to the priorities laid down by planning authorities in the country. Banks bring together the diverse decisions of the income-earners to save, the decisions of the savers to hold their saving in the form of bank deposits and decisions of the producers to draw upon the savings of community for the purpose of capital assets formation. They help the process of saving and of the holding of savings in a socially desirable from. Through their advances, banks also help the creation of the incomes out of which further savings by the community and further growth potentials emerge for the good of the economy. In a planned economy, banks make the entire planed productive process possible by providing funds for all type of production incorporated in the plan regardless of whether the production is in the public sector, join sector, or in the privates sector, or whether the production is undertaken by one type of organization or another. All employment, income distribution and other objective of the plan are as far as possible subsumed into the production plans which banks finance.

The importance of the commercial banks in directing the economics activities in the system be it a capitalist or socialist system dominated economy is indeed overwhelming. Not only in the highly developed industrial and non-industrial economics of the world where in a way the commercial and industrial activities are paralyzed in the absence of banks keeping their door open, even in the developing countries most economic activities, particularly in the economy's organized sector are bank-based. This is evident from the fact that a threat of strike by bank employees union is views seriously by trade, industry and government in these countries. In several developing industries, banking has been placed in the category of 'essential

services' in which strike by the worker is declared illegal. In short, the growth of the economy is tied with the growth of the commercial banks in the economy. Where the commercial banking system is in its primitive stage of development, there the economy has scarcely come out of the primitive stage of barter with total absence of division of labour and specialization in production. Consequently, people practice primitive methods of production bearing the hardships of primitive culture and life. No development takes place in the economy. With the establishment of commercial banks in the country, the floodgates of accelerated economic development promising great hopes for people in life open. Production no longer remains dependent on the mercy of the small size of local demand. Once it happens, the multiplying process of an ever- expanding demand and supply holds the economy fast in its grip. The banking culture spreads its blessings far and wide in the economic system benefiting the whole community.

As per preliminary estimates of Central Bureau of Statistics (CBS), the Gross Domestic Product (GDP) is estimated to have grown by 4.6% in the FY 2066/67 compared to 3.4% in the previous year at 2062/63 prices. GDP growth in the Agricultural sector slowed down from 3.0% in the fiscal year 2065/66 to 1.2% in 2066/67. The structural weaknesses in the agricultural sector and disruptions in the non agricultural sector appear to have constrained the economic activity.

In the year 2066/67, Government could not meet its capital expenditure targets due to unfavorable political situation. However, the redeeming feature was the tourist arrivals going up by 1.9% during the year 2066/67.

The foreign trade depicted an insignificant growth. Total exports, which increased by14.2% in 2065/2066 has deteriorated by 9.7% in 2066/2067.Total imports, which increased by 28.2% in 2065/2066 has increased by 28.9% in 2066/2067. Likewise, remittance, which increased by 47.0% to Rs.209.7 billion in previous FY 2065/2066, has gone up by 7.0% to Rs.224.29 billion in current FY 2066/2067.

In the current FY 2066/2067 the growth rate of deposits of the commercial banks system has been declining. The 30.4% growth in deposit mobilization observed in FY 2065/2066 grew only by 9.6% in FY 2066/2067.

The volume of trade deficit has been widening due to heavy increase in imports and decline in export. Due to heavy trade deficit, the balance of payment recorded a deficit of Rs.19.57 billion in FY 2066/2067. However, import coverage of current level of foreign exchange reserve remains satisfactory.

The gross foreign exchange reserves, which increased by 31.7% to Rs. 279.99 billion in previous FY 2065/2067, has decreased by 9.5% to Rs. 253.36 billion in current FY 2066/2067 as mainly contributed by the worker's remittances. The reserves will be sufficient to finance merchandise imports of the country for 8.4 months.(source: Economic survey FY 2066/2067)

In present global scenarios , Joint venture are mode of trading through partnership among nations and also sort of negotiations between groups of industries and traders to achieve mutual exchange of goods and services for sharing comparative advantages. Nepal is a member of WTO and agreed for global partnership for the financial activities. This incorporates accessibility of multinational companies and others financial institutions in its home land. In this regards, creation of portfolio is one instrumental tool to enhance strength of financial institutions.

Investment in two and more than two assets is normally called portfolio. A portfolio is a combination of investment assets. Portfolio is holding securities and investment in financial assets like bond, stock. Portfolio means the risk of holding in securities owned by an investor or institution. (Oxford dictionary of financial and banking new edition 1997) a portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment assets is called portfolio. Portfolio theory deals with the selection of optimum portfolios; that is portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. (Weston and Copeland, 1992) According to Weston & Brigham, "A portfolio simply represents the practice among

the investors of having their funds in more than one asset. The combination of investment assets is called a portfolio." (Weston & Brigham, 1982:245). "Portfolio means collection of investments. For an investor through the stock exchange the portfolio will be a collection of shareholding in different companies" (Raymond Brockington). For a property, investor has portfolio will be a collection of buildings. To a financial manager within an industrial company has portfolio will be a collection of a real capital projects. It will be apparent that the actual of the components of a portfolio depends on the population of opportunities from which the selection has been made" (Relly and Brown; 2004:148)

1.2 Statement of the Problem

Due to the lack of the information and poor investors are manipulated or exploited by the financial institution or the market intermediaries to such an extent that investing in common stock in intolerable hazardous. Nevertheless, investors are responsible to make rational investment decision rather than switching blame to others. For this purpose, knowledge is essential. Investor's attitude and perceptions also plays a vital role in rational decision. Previous research shows that in Nepal most of the investors invest their funds in single security rather they can be benefited by investing in portfolio of securities through diversification of risk. Illiterate people but also even most of the postgraduates in commerce or business administration cannot perfectly analyze the risk and return in stock market investment. There are no any separate institutions, which give such valuable information that accelerates the stock investment and market efficiency.

Government policy is less encouraging proper investment situations. Some plans and policies are not implemented. There are no strong commitment towards increasing public investment in policy makers and government. Investors are the bases for any company they are the sources of revenue as a customer for the stockbrokers and financial institutions and ultimately they are the backbone of economic development of the nation. However, any above body has no any effective program to develop investor's knowledge.

People feel more risk in stock investment than its real risk that may due to lack of proper knowledge about the stocks he/she is trading in due to the false presentation of stock prices in the secondary market. To build their confidence unbiased analysis and information about it is necessary. Unavailability of a simple and clear way or technique to analyze risk and return of individual stock and portfolio is therefore being a major weakness to increase stock investment and stock market efficiency as well.

This study will be helpful to investors regarding the risk return statistics association with investment. Analysis of comparative study among various banks will be benefited for them to know about the position of financial performance. Risk return analysis and portfolio theory will create awareness to utilize their scarce resources with optimization. The customers financing agencies and stock traders are interested in the performance of the banks and they can identify as to which bank they should invest. This study will be helpful to know about the portfolio management taken by Nepalese investors and financial institution.

1.3 Significance of the Study

Investment decision depends upon two factors i.e. risk and return. The return is defined as the reward for bearing the risk. Return is the most important outcome from an investment. Return from stock can be of holding period return, return from speculation or from short sell, capital gain and dividend gain etc. However, return to investor is ever followed by risk, which is known as the occurrence of unfavorable outcomes and is ever harmful for the business. Many times, investor blindly invest their money with the hope of getting good return in their investment able funds but due to the many reasons they lose their hard earning while investment made without analyzing the risk and return involved in the stocks. Other hand the increasing number of the bank and financial institution has created a competitive environment in financial sectors. Those, to get the maximum return from a minimum level of risk, the investor should diversify its investment by the means of portfolio with analysis the risk and return. Therefore, our focus of the study is to measure and analysis the financial

performance of Joint Venture Banks, their risk & return, and portfolio patterns etc. to make sound investment decision.

As discussed above main target of the study is that potential investor who wants to invest in security but repel by imaginary or unreal risk. Therefore, the study will be more significant for exploring and increasing stock investment. Study not only used a partial fulfillment of TU course of MBS but it also will provide little contribution to Nepalese stock market development.

During the period of last decade due to political conflict, investors were skeptical to invest. After the political change in 2063, BS people participation in security investment and stock trading is increasing. This situation indicates that there is a high potentially in stock investment. These potentialities can change into fruitful investment by increasing transparency, increasing information flow and developing analytical power of public sector investors that ultimately increase national economic health. This study will give information about Nepalese capital market by analyzing risk and return and their portfolio will definitely contribute to increase the analytical power if the investors in capital market.

1.4 Objectives of the Study

On the ground of aforementioned problems being faced by Nepalese investors, the main objective of this study is to assess the risk associated with return on common stock investment of the listed commercial banks on the basis of selective financial tools and techniques. Some objectives of the study are as follow:

- To analyze the risk and return on common stock of selected Nepalese commercial banks.
- To analyze the trend of return among the commercial banks.
- To analyze the risk and return trend of minimum variance portfolio.
- To evaluate the out of line securities.
- To evaluate the opinion of investors of common stock towards risk and return of Nepalese commercial banks.

1.5 Research Question

In this study, the following issues will be enquired which have been specified as the research questions.

- What is the risk and return of commercial banks of Nepal?
- How risk and return are correlated?
- In what extent, the investors should be compensated for taking a certain degree of risk?
- How do they find the scale and intensity of risk?
- How can one make higher return assuming lower risk?
- What are the attitudes towards risk and return of Nepalese Investors on common stocks?

1.6 Limitation of the Study

This study is to fulfill the required of Master Degree in Business Studies. It cannot cover all the dimension of the subject matter and resource. The major limitations of the study are as follows:

- The main point of this study is time factor which is the major limitation of this study.
- The study concern only five years periods of data i.e. 2005/06 to 2009/10 and conclusion drawn confines only to the limit duration.
- This study has employed secondary as well as primary data published by selected banks and people's opinion. Also the websites like www.nrb.org.np and www.nepalstock.com.
- This study concentrates only on those factors, which are related with portfolio analysis and common stock investment.

1.7 Organization of the Study

This research has been organized in five chapters. The titles of this chapter are listed below:

Chapter one: Introduction

This chapter is introductory and deals with subject matter of the study including general background of the study, problem of the study, objective of the study, significance of the study, and limitation of the study.

Chapter Two: Review of Literature

This chapter contains the profound review of available literature related to the area of this study. It is directed towards the review of conceptual framework and review of major related studies.

Chapter Three: Research Methodology

This unit presents research methodology used in the study which includes various tools and techniques of data. It consists of research method as library research and field research, sources of data, population and sample, research, method of data analysis etc.

Chapter Four: Presentation and Data Analysis

This chapter presents the analysis and presentation of data by using various methods of statistical and financial tools. Tables, pie charts etc. will be used accordingly.

Chapter Five: Conclusion and Recommendation

This chapter is for summary of main findings conclusion, recommendation and suggestions for further important. It contains the profound review of available literature related to the area of the study. It is directed towards the review of conceptual framework and review of major related studies.

CHAPTER TWO

REVIEW OF LITERATURE

Review of Literature consists of study of past research studies and relevant information that they used and induced. It is an advancement of existing knowledge and in-depth study of subject matters. It starts with a search of a suitable topic and continuous throughout the volumes of similar or related subjects. This chapter with about review of literature; deals with the review of the financial system and investment opportunity. The more details are in descriptive manner, for this study, various books, journal and articles as well as the past thesis review were taken into consideration. During the review of this research, in depth study and theoretical investigation regarding portfolio's aspects and their present application and potentialities also are made.

History tells us that it was the merchant who first evolved the system of banking by trading in commodities than money. Reviewing the history, we can find that present day banker has three ancestors of particular note. One the merchant and two other were lender and the goldsmith. Lending and borrowing are almost as old as money itself. However, modern banking sowed its se in medieval Italy. The bank of Venice, founded in 1157A.D. was the first public banking institution. Subsequently bank of Barcelona 1401 and bank of Genoa 1407 were established. The Lombard migrated to England and other parts of Europe from Italy are regarded for the development and expansion of the modern banking. Ancestors Geoffrey couther says that the merchant goldsmith and moneylenders are the ancestors of modern banking.

2.1 Conceptual Framework

Though bank of England was established in 1694 as a joint stock bank and later on it became the first bank in the world in 1844, the growth of bank accelerated only after the introduction of banking act 1833 in united kingdom as it allows to open joint stock commercial banking system development in the lending countries of the world.

Though the modern banking system is a very recent origin in Nepal to compare to other developing nations, some operations alike to banking were known and have been practiced even in ancient times.

Prior to the establishment of the Nepal bank limited, there was no organized financial institution in Neola. During the prime ministers ship of Ranoddip Singh around 1877 AD a number of economic and financial reforms were introduced. The establishment of the "Tejarath adda" fully subscribed by the government in the Katmandu valley was one of them. In the overall development of the banking, system in Nepal the "Tejarath adda" may be regarded as the father of modern banking institution and for quite a long time it tended a good service to government servants as well as to the public. However, the installation of "Kausi tosha khana" as a banking agency during the regime of king Prithvi Narayan Shah could also claim to be regarded as the first step towards initiating banking development in Nepal.

The inception of Nepal bank limited in 1937AD was a landmark in the field of banking and financial sector in Nepal. It was established under the special banking act 1936AD having elementary function of commercial bank as a semi government organization, without existence of a central bank in the country. After the founding of Nepal bank limited the organized expansion of banking was apprehended. Nepal Rastra bank, the central bank was established on 26 April 1956 with an authorized capital of Rs. 10 million subscribed by the HMG/N under Nepal Rastra bank act of 1955. The main purpose is to help the government in formulating monetary polices with an objectives of supervising, protecting and directing the functions of commercial banking activities. It has acted as a government's agent and has contributed in the financial growth of country's economy. In order to facilitate the people all over the country government established the second commercial banks named Rastriya Banijya bank in 2022(B.S.) which is fully owned and controlled by Nepalese government. With the view to promote the development and modernization of the agriculture sector, agriculture development bank was established in 2024 B.S. under the agriculture development bank act 2024. In addition, security exchange centre was set up to enhance capital market. The successful establishment of Nabil

bank limited as the first joint venture bank and the liberal economic policy adopted by the successive government, more commercial banks come into existence.

During the mid 80s the adopted the policy of liberalization which attracted the foreign banks to come to Nepal. In 1984 NABIL bank ltd. was established as the first joint venture bank. After the restoration of democracy in 1990, Nepal adopted democratic constitution that was lauded as the best social-legal document in the world. Further, the economic liberalized with a view of enhancing private sector participation in various spheres. As consequences as in the most to the countries, Nepalese financial sector is largely dominated by the banking sector. Under the commercial banking sphere, majority occupied by large number of joint venture banks.

NABIL bank, Nepal Indosuez bank ltd (Nepal Investment Bank) Nepal Grind lays bank ltd (now standard chartered bank ltd.) Himalayan bank ltd. Nepal SBI bank ltd. Nepal Bangladesh bank ltd. Everest bank ltd. Bank of Ceylon (now Nepal credit and commerce bank ltd.) was established as a joint venture bank. Out of which Nepal Indosuez bank was take over by Nepalese investors like wise bank of Ceylon. Now only NABIL, SCBNL, SBI, EBL and HBL are in existence as joint venture bank.

Quantitative operative commercial banks although are giving some choosing right of banking service but overall competitive environment have not been created yet. NRB and NBL have lost their faith to public. Which are now in reconstruction process through privatization (management contract). In urban areas standard chartered bank, Himalayan bank ltd, NABIL bank ltd, Nepal investment bank ltd., has been dominating the segment of commercial banking. On the other hand, there are some banks from other country whose domestic banking system is not properly supervised by their home country Central's banks. In regard of other Nepalese private commercial bank, some of them are not far from the critics. However, it is not the time to evaluate the performance of some recent originated young commercial banking financial activities. (Business law journal 2003:15-18).

The simplest meaning of the investment is sacrificing the present worth to generate more value of worth in certain future. It is concern with the sacrifice of the current rupee for the expectation of future money. It maximizes the wealth position.

Investment, in its broadest sense, means the sacrifice of the current dollars for future dollars. Two different attributes are generally involved time and risk. “The sacrifice takes place in present and is certain. The reward comes later, if at all and magnitude is generally uncertain” (Francis: 1998: 38).

Portfolio management is the process of selecting a bundle of securities that provides the investing the organization a maximum yield for a given level of risk or alternatively ensuring minimum level of risk for given level of return. It can be also taken as risk and return management. Its aims to determine an appropriate asset mix which attains optimal level of risk and return. Various books, which are either dependent or independent deals with theoretical aspects of risk, return and portfolio, are taken into consideration in this chapter. Major focus is on the investment of common stock and its impact on individual risk, return and portfolio.

2.1.1 Common Stock

Common stock is an ownership share in a corporation. Therefore, the common stockholders are true owners of a corporation. Each share of common stock represents a fractional ownership interest in the firm. For example, One share of common stock in a corporation that has 100 shares outstanding would represent 1/1,000 ownership interest. The return on common investment comes from either of two sources-the periodic receipt of dividend and capital gains. Common stock holders enjoy a No. of rights such, as is dividend right. Assets right, preemptive right, voting right etc. Common stock is the recipient of the residual income of the corporation. Common stock holders are an uncertain position about dividend, Capital gain and residual claim. Therefore, common stock holder musts bear greatest risk. Common stock is suitable for the investor who wants to take high risk and return for a long period too. “Common stocks are traded in stock exchanges and over the counter market (OTC)” (Thapa, Bhattarai and Basnet; 2006: 9).

Common stocks are easier to describe than fixed-income securities such as bonds, but they are harder to analyze. Fix-income usually has a limited life and an upper dollar limit on cash payments to investors. Common stocks have neither. Although the basic

principles of valuation apply to both, the role of uncertainty is larger for common stocks. So much so, that often dominates all other elements in their valuation.

The great advantage of the corporate from of organization is the Limits Liability of its owners. Common stocks are generally “fully paid and no assessable”, meaning that common stockholders may lose their initial investment but no more. That is, if the corporation fails to meet its obligations, the stockholders cannot be forced to give the corporation the funds that are needed to pay off the obligations. However, as a result of such as a failure, it is possible that the value of a corporation’s shares will be negligible. This outcome will result in the stockholders’ having lost and amount equal to the price to buy the sharers” (Sharpe and Alexander; 2003: 457).

- “Common stock represents ownership of a firm. Owners of the common stock of a firm share in the company prospers, the investor receives high rates of return and can become wealthy. In contrast, the investor can lose money if the firm does not do well or even goes bankrupt, as the once formidable K-Mart, Enron, W.T. Grant, and Interstate Department Stores all did. In these instances, the firm is forced to liquidate its assets and pay off all its creditors. Notably, the firm’s preferred stockholders and common stocks all the advantages and disadvantages of ownership and is a relatively risky investment compare with fixed-income securities” (Relly and Brown; 2004: 83)

“Common stock has one important investment characteristics and one important speculative market polices tend increase irregularly but persistently over the decades as their net worth builds through the reinvestment of undistributed earning. However, most of the time common stocks are subject to irrational and excessive price function in both directions, as consequences of the ingrained tendency of most people to speculative or gamble, i.e. to give way to hope fear and greed” (Western and Brigham; 1999).

“Common stock holders of corporation are its residual owners, their claim to income and assets comes after creditors and preferred stock holders have been paid in full. As a result, a stockholders return on investors is less certain than the return to lenders or to a preferred stock holder. On the other hand, the shares of a common stock can be

authorized either with or without par value. The par value of a stock is merely a stated figure in the corporate charter and is of little economic significance. A company shouldn't issue stock at price less than par value because stock holders who bought stocks for less than par value would be liable to creditors for the difference between the below par price they paid and the par value" (Horne and James; 1997: 560).

2.1.2 Investment

The common definition of investment is, "the sacrifice of certain present value for future value" (Sharp and Alexander, 1999; 217). Investment is not a gamble rather it is the systematic and scientific way of using the excess fund to get the maximum return at minimum level of risk. Investment made to obtain some expected profit. Investment forgives the present return for future return. Present investment is contribution to the future return. Investment is not gambling rather than it is systematic and scientific way of using excess fund from income to gain expected return with lower level of risk. While investing future return one should not forget that the amount s/he investing i.e. capital, a collective form of surplus. The surplus is that part of money deducting all the expenses from income. A person spends his/her years in capital formation process. That is why each one should be rational while investing. Since most of investors are risk averters, they require additional unit of return for bearing one more level of risk. People always try to reduce the risk factor. Common definition say us that contribution of present value for future return is investment or it's a search of certainty within the uncertainty. An investment is a commitment of money that expects to generate additional money. Every investment entitles some degree of risk; it required a present sacrifice for a future uncertain benefit. The motivating factor of investment is collective form of saving, expectation of future return and wealth position maximization.

2.1.3 Return

Return is the main motivating force of the investment or return is the reward of investment. In return, there have two factors one is capital gain and another is regular gain or ordinary gain. Capital gain means difference between the ending and beginning price. Regular gain means annually cash receipt.

Total return = Capital gain + regular gain (ordinary gain)

Capital gain = ending price – beginning price

Regular gain = dividend or interest.

2.1.3.1 Single Period Rate of Return

The rate of return is the speed at which the investor's wealth increases or decreases. This rate of return depends upon the future cash flows that include cash receipt (dividend) and capital gains. And the investors make investment for high rate of return at minimum risk. Thus, the investor's single period rate of return can be defined as the total return that the investor receives during the holding period of the shares as a percentage of the purchase price at the beginning of the holding period. The rate of return over the holding period is called holding period rate of return (HPR) which can be calculated as:

HPR % = [(ending price – beginning price + cash receipt) / beginning price] * 100

HPR in Rs. = Capital gain + Cash Receipt

2.1.3.2 Required Rate of Return

When setting the required rate of return on an investment an investor must consider the real rate of return, expected inflation and risk. Because consumption is foregone today, investor is entitled to a rate of return that compensate for differ consumption in future. Required rate of return is the rate of return demanded by an investor forgoing the present utility and satisfaction. If investors postponed his satisfaction for uncertain future, investment should compensate his satisfaction. The compensation, e demand on behalf of future uncertainty over the risk free risk, is required rate of return. The capital market determines required rate. The required rate of return is the minimum rate of return that an investor expects from his investment. It is function of real rate of return and risk.

2.1.3.3 Expected Rate of Return

Expected rate of return is the return one expects by his/her investment. Suppose one invested Rs 100 in security of Nepal Ban Limited and he/she thinks that it will

generate year-end dividend of Rs 5 with ending price of Rs 110 then its total return will be Rs 15 and expected return will be 15%. The expected rate of return should be higher than required rate of return. Expected return is the hypothetical rate of return. The expected rate of return based upon the expected cash receipt over the holding period and expected year-end selling price of the securities. Of course, an investor has expected return must be reasonable. Most expectation based on history. Reasonable conclusions about future returns could be reached by looking at the past, tempered with the understanding that these returns. Even if your expectations are reasonable, however, there are the possibilities that your investment's actual return will be different from the expectation. This is risk, we must take as an investor and it includes the possibility of losing original investment. Risk is greater when the variation is greater in return.

2.1.3.4 Expected Rate of Return Based on Historical Data

During this research, it is assumed that history repeats itself. The future cash flows will base on the historical cash flow. The expected rate of return will be the average of historical rate of returns. In term of holding period return, the expected rate of return for any specific securities is the expected rate of return taken from its historical return. However, the simple arithmetic averaging ignores the compounding effects that result if the first period returns reinvested. In addition, the result of the arithmetic average, return distorted if there are large differences in the rate of return across period. Large difference in the periodic rates of return over longer investment horizons will; because the arithmetic rate of return to be misleading. The geometric rate of return does not suffer from this defect. The geometric mean rate of return HPR defined as the rate of return that would make the initial investment equal to the ending investment value.

2.1.4 Risk

Risk is the potential variability in future cash flows. Therefore, it is defined as variability of returns in a period. The wider the range of possible events that can occur, the greater the risk, that means higher the variability higher the risk and vice versa.

Risk and uncertainty are the integral part of investment. Risk is a situation where the possible consequences of the decision are known. However, uncertainty is a situation sphere the probabilities cannot be eliminated. However, risk and uncertainty are used interchangeably.

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

“Although there is difference in the specific definitions of risk and uncertainty, for our purposes and in most financial literature the two terms are used interchangeably. In fact, one way to define risk is the uncertainty of future outcomes. And alternative definitions might be the probability of an adverse outcome. Subsequently, in our discussion of portfolio theory, we will consider several measures of risk that are used when developing the theory” (Relly and Brown; 2004: 210-211).

2.1.5 The Range

“The range (maximum return-minimum return) is known as one of the traditional way of measuring risk. It simply shows the difference between the best possible return and the worst possible return but does not provide information about the distribution of the rates of return between the extremes.” (Cheney and Moses; 1992: 41) The range is one of the traditional methods of measuring risk, which simply communicates the difference between the best possible returns and the worst possible return; it does not provide information about distribution of the rates of return between the extremes.

The Range = Best possible Rates of return-worst possible rate of return.

The degree of risk of an underlying security is reflected in the magnitude of the differences. The smaller the difference the lower will be degree of risk**”** (Pokharel: 2004:11).

“Another measure risk is the range of returns. It is assumed that a larger range of expected returns, from the lowest to the highest return, means greater uncertainty and risk regarding future expected returns” (Relly and Brown; 2004: 211).

2.1.6 Standard Deviation (SD)

Standard deviation measures the risk as variability of return. “Standard deviation is a statistical measure of the variability of a set of observations. It is the measure of total risk. Smaller the variance, lower the risky of the stock and vice- versa. The risk or standard deviation is denoted by the symbol sigma (σ). The square root of the variance of the rate of return is called the standard deviation (σ) of the rate of return” (Thapa, Bhattarai and Basnet, 2006: 121-122).

2.1.7 Coefficient of Variation (CV)

Standard deviation is obsolete measure of return where as coefficient of variation is relative measure of return. Risk is measured by standard deviation. And risk per unit of expected return is measured by coefficient of variation is denoted by CV. Greater the CV the greater relative risk of the investment. Coefficient of variation is calculated to compare the variability in returns of two alternative investments. Hence, it is useful to compare the investments having different expected return and different level of risk (Horne and Wachowicz; 2001:94).

2.1.8 Portfolio Analysis and Diversification

2.1.8.1 Portfolio Analysis

Investors undertake investment with the target of making some expected rate of return. For making more return, they diversify their investment across different securities rather than invest in one stock. Risk diversification creates and efficient investment thereby reducing the variability of return around the expected return. The reduction in risk will occur only if the stock returns within the portfolio do not move precisely together over time- that is, if they are not perfectly correlated.

A portfolio is collection of investment securities. Portfolio theory deals with the selection of optimal portfolio; that is, portfolios that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate

of return.(Western and Copeland, 1992:302).“A portfolio simply represents the practice among the investors of having their funds in more than one asset. The combination of investment assets is called a portfolio.”(Western and Brigham, 1982; 245). In simple words, portfolio means the list of holdings in securities owned by an investor or institution, which provides maximum return at minimum risk. So an investor should always have good knowledge of portfolio analysis as it considers the future return and risk and helps to develop a portfolio that provides the maximum return at given level of risk.

Portfolio theory deals with the selection of optimum portfolio. Only the optimum portfolio provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return in order to develop the optimum portfolio, which is the main objective of portfolio announces, the investor should have good knowledge of portfolio management. It is concerned with efficient management of investment in financial assets including equity shares, preference share and debentures of the companies. It is the process involves a logical set of steps common to any decisions. It is just an attempt made by the investor to gain maximum return at lower risk and largely depends on the correct decision of them, which cannot be always ensured. The objectives of portfolio management are:

Primary Objectives

- To maximize return
- To minimize risk.

Secondary objectives

- Regular return.
- Safety or security of an investment.
- Appreciation of capital.
- Liquidity.
- Marketability.
- Tax planning – capital gain tax, income tax and wealth tax.

The main objective of portfolio construction is to diversify the risk by combining securities of low risk with securities of high risk to obtain the highest expected return for a given level of risk. One of the well-said proverbs “never keep all the eggs in a same basket” supports this. So diversification plays an important role in designing efficient portfolios (that is portfolios whose return is maximize for a given level of risk or, equivalently, portfolios whose risk is minimized for a given level of return.).

Diversification simply means spreading the risk among the various companies, industries and asset class. It reduces the portfolio risk thereby eliminating the unsystematic risk, which is not rewarded. There are two types of risk attached with investment; systematic and unsystematic risk. The investors are only rewarded for systematic risk that is market risk, which is unavoidable. It is important to investors as it protect them from business risk, financial risk and the volatility. There are different types of diversification risk management techniques that help in reducing portfolio risk. They are simple

Types of Diversification:

1. Simple diversification

In simple diversification is the random selection of securities to add to a portfolio. It would reduce unsystematic risk or diversifiable risk. According to this approach, it is found that 10- 15 securities in portfolio brings adequate returns with average risk and each selected securities in this portfolio is provided equal weight in its portfolio. This is better way of reducing the risk.

2. Superfluous diversification across quality rating categories

It is investing in only same qualified and same rated securities such as NEPSE has rated security in various grades, A, B, C and so on and in this portfolio, investor will make in same category security.

3. Markowitz’s Diversification

It may be defined that combining assets, which are less then perfectly positively correlated in order to reduce portfolio risk without sacrificing portfolio return. It can sometimes reduce the risk below the un-diversifiable level. There is a natural trade off

between risk and return in the market but at any given level of expected return, Markowitz diversification can reduce risk more than simple diversification. Applying diversification to a collection of potential investment assets with a compute is Markowitz portfolio analysis. It is a scientific way to manage a portfolio and its result is quite interesting.

2.1.8.2 Expected Portfolio Return

Since each security's future may be considered as a random variable, the return of a portfolio also can be thought as a random variable depended on expected returns of the individual securities that make up the portfolios. The expected return of portfolio is a weighted sum of the expected returns of the individual securities weight being the proportion of funds invested in individual securities. The portfolio weights are % of the total dollar amount available to be invested in the portfolio and sum to the expected portfolio return can be calculated as:

$$E\ (r_p) = \sum_{i=1} X_i E(r_i) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5.1)$$

$$= X_1 E\ (r_1) + X_2 E(r_2) + \ldots\ldots\ldots + X_n E(r_n) \ldots\ldots\ldots\ldots (5.1a)$$

Where,

$E\ (r_p)$ = Expected rate of return of portfolio

X_i = The fraction of the total value of the portfolio invested in the i^{th} asset or stock

$E\ (r_i)$ = The expected return from the i^{th} assets or stock"

(Thapa, Bhattarai and Basnet; 2006: 149)

2.1.8.3 Portfolio Risk

Portfolio risk is a function of the proportional invested in the components. The risk ness of the components is correlation of returns on the component securities. It is measured by standard deviation. The risk of a portfolio is not a simple weighted average of the standard deviation of the individual securities. It depends on the investment weight on individual security. Risk on individual security and correlation between given securities.

"Portfolio risk is measured by statistical tool standard deviation and variance. It is a function of the proportions invested in the components. The riskiness of the components and the correlation of returns on the components securities are computed by using the following equations:

$$\text{Var}(r_p) \text{ or } \sigma_p^2 = \sum_{i=1}^{n} \sum_{j=1}^{n} x_i x_j Cov_{ij}$$

$$= \sum_{i=1}^{n} \sum_{j=1}^{n} x_i x_j \rho_{ij} \sigma_i \sigma_j$$

Where,

σ_p = Standard deviation of portfolio's return

X_i = Proportion(weight) of investment in asset i

X_j = Proportion(weight) of investment in asset j

Cov_{ij} = covariance of the return between security i and security j, it can be also written as σ_{ij}

P_{ij} = Correlation co-efficient between asset I and asset j

(Thapa, Bhattarai and Basnet; 2006: 150)

2.1.9 Correlation Coefficient and Portfolio Risk

"The risk of the portfolio can be measured by using covariance of the returns of assets in the portfolio. The covariance's simply means the degree to which the returns of the two assets vary together. In other words its measures how two variables co-vary. A positive covariance indicates that the returns of two assets move in the same direction where as a negative covariance indicates that the return of two assets moves in opposite direction. If the covariance is zero, it means the rate of return on assets is independent. The correlation coefficient is the covariance divided by the product of the standard deviation for the investments.

Correlation coefficient (ρ_{ij}) = $\frac{\text{cov}(r_i, r_j)}{\sigma_j \sigma_j}$

Where,

ρ_{ij} = Correlation coefficient between assets i and j

σ_i = Standard deviations of return for asset i

σ_j = Standard deviation of return for asset j

The correlation coefficient between –1 and +1, if the value of correlation is 1, it is perfectly positively correlated. It indicates that the return on two assets move together exactly the same way. In additional, the value of correlation –1 means perfectly negatively correlated which indicates that the return on two assets move together perfectly opposite way. If the value of correlation 0 means that, there is no relationship between two assets return."(Thapa; 2005: 38-39)

2.1.10 Systematic Risk and Unsystematic Risk

"Systematic risk is market related risk. It is also called market risk or un-diversifiable risk. For example; inflation, interest rates war etc. Unsystematic risk is non-market related risk. It is also called non-market risk or company unique risk or company specific risk or diversifiable risk. For example, winning a new contract, an industrial dispute, and the discovery of a new technology, Labor strikes etc. The systematic risk is rewarded in the form of risk premium. The unsystematic risk is not rewarded because it can be reduced to zero." (Thapa, Bhattarai and Basnet; 2006: 183)

Systematic risk has its source factors that affect all the marketable assets and thus can't be diversified away. The sources of systematic risk are market- pervasive. The measure if systematic risk permits an investor to evaluate an asset required rate of return relative to systematic risk of the stock. Unsystematic (company specific/unique) risk can be reduced through diversification. The relationship among total risk, systematic risk and unsystematic risk are shown below:

Total risk = Systematic Risk + Unsystematic Risk

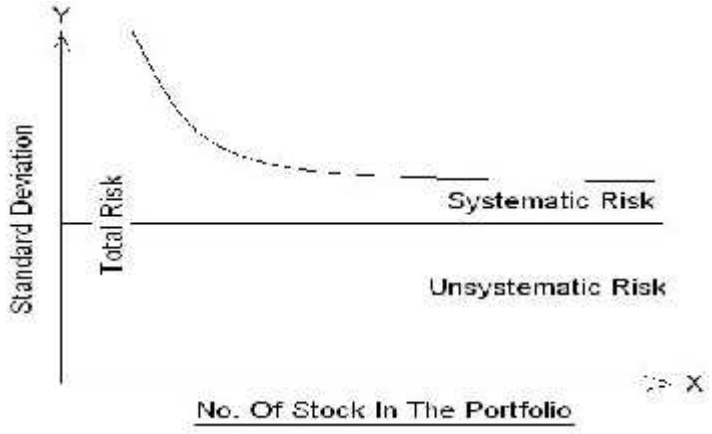
While Systematic Risk = (σ_j) (ρ_{im}) and unsystematic Risk= (σ_j) $(1-\rho_{im})$

In this equation ρ_{im} is the correlation between the return of given stock (i) and the return on market portfolio." (Upadhyaya; 2001: 11)

The relationship between systematic risk and unsystematic risk are shown in given figure;

Figure No. 2.1

Relation between Systematic risk and Unsystematic risk



Source: Thapa, Bhattarai and Basnet; 2006: 183

2.1.11 Capital Assets Pricing Model (CAPM)

"Capital assets pricing model (CAPM) is a model that indicates what should be the expected or required rate of return on risky assets. This transition is important because it helps you to evaluate an asset by providing an appropriate discount rate to use in any valuation model. Alternatively, if you have already estimated the rate of return that you think you will earn on an investment, you can compare this estimated rate of return to the required implied by the CAPM and determine whether the assets is undervalued, overvalue, or properly valued.

To accomplish the foregoing, we demonstrate the creation of security market line (SML) that visually represents the relationship between risks and expected or the required rate of return on an asset. The equation of this SML, together with estimates for the return on risk-free asset and so on the market portfolio, can generate expected or required rate of return to any asset based on its systematic risk. You compare this required rate of return to the rate of return that you estimate that you will earn on investment to determine if the investment id undervalued or overvalued. After

demonstrating this procedure, we finish the section with demonstration of how to calculate the systematic risk variable for a risky asset."(Reilly and Brown; 2004: 247)

The capital assets pricing model states that expected risk premium on each investment is proportional to its beta. This means that each investment should lie on the sloping security market line connecting Treasury bills and Market Portfolio" (Brealey and Myers; 2003: 200).

"The capital assets pricing model (CAPM) specifies the relationship between risk and required rates of return on assets when they are held in well diversified.

Basic Assumptions of the CAPM

1. All investors focus on a single holding, and they seek to maximize the expected utility of their wealth by choosing among alternative portfolios on the basis of each portfolio's expected return and standard deviation.
2. All investors can borrow and lend an unlimited mount are a given risk free rate of interest KRF, and there are no restrictions on short sales of any assets.
3. All investors have identical estimates of the expected returns, variances, and covariance among all assets; that is, investors have homogeneous expectations.
4. All assets are divisible and liquid.
5. There are no transaction costs.
6. There are no taxes
7. All investors are price takers (that is, all investors assume that their own buying and selling activity will not affect stock prices)
8. The quantities of all assets are given and fixed."

Source: Thapa, Bhattarai and Basnet; 2006: 177

CAPM is a model that describes the relationship between risk and expected return. In this model, a security's expected return is the risk free rate plus a premium based on the systematic risk of the security. The SML equation as suggested for the computation of expected rate of return on common stock. This model is as under:

ki or $\sum(r_i) = r_f + [\sum(r_m) - r_f] \times ß_i$

Where,

ki = required rate of return or equilibrium rate of return for stock i.

$\sum(r_m)$ = expected return for the market portfolio

$ß_i$ = an index of systematic risk of stock i.

It means the sensitivity of a stock's return. It changes in returns on the market portfolio. "The beta of portfolio is simply a weighted average of the individual stock beta in the portfolio" (Horne; 1997: 100).

"The major implication of the CAPM is that expected return of assets will be related at a measure of risk for that asset knows as beta (β). The exact manner in which expected return and beta are related is specified by the CAPM. The model provides the intellectual basis for a number of the current practices in the investment industry" (Sharpe, William, and Alexander; 2002: 261-262).

"CAPM is a model that describes the relationship between risk and return. In this model, a security expected return is the risk free rate and a premium based on the systematic risk of the security.

Hence, beta is the index of systematic risk. It means the sensitivity of a stock return to change in returns on the market portfolio. The beta of a portfolio is simply weighted average of the individual stock betas in the portfolio" (Horne and Wachowicz; 1995: 100). "Beta measures un-diversifiable risk. Beta shows how the price of a security responds to market forces. In effect, the more responsive the price of a security is to changes in the market, the higher will be its beta. Beta is calculated by relating the returns on a security with the returns for the market. Market return is measured by the average return of a large sample of stocks, such as the S & P 500 stock index.

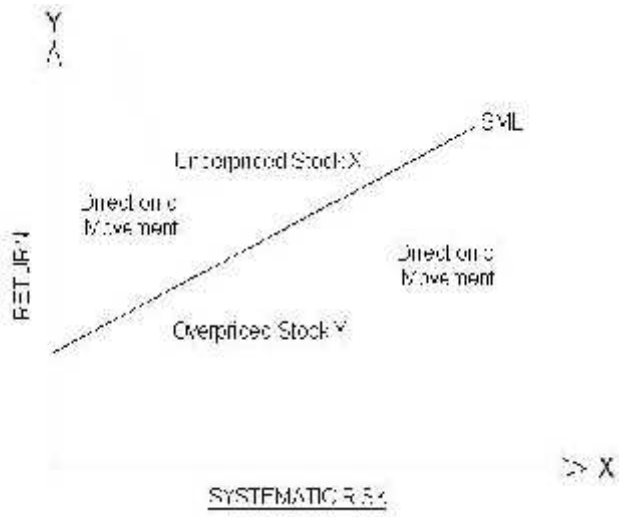
The beta for the overall market is equal to 1.00 and other betas are viewed in relation to this value." Betas can be positive or negative. However, nearly all betas are positive. Most betas lie between 4 and 1.9. "The CAPM provides a means by which one can estimate the required rate of return of a security. Based on price and dividend data, expected return can be calculated. By comparing two or more than two returns,

investors can analyze whether the stocks are over-priced or under –priced. “The capital asset pricing model allows us to draw certain implications about the expected return of a specific security. The key assumptions in the model are that the perfect capital markets exist and that investors have homogeneous expectations” (Van Horne; 1997: 85).

“In market equilibrium, the required rate of return on stock equals its expected return. That is all stocks will lie on the security market line, what happens when this is not so? Suppose that in the given diagram the security market line is drawn on tee basis of what investors as a whole know to be the approximate relationship between the required rate of return and systematic or unavoidable risk. For some reason, two stocks call them X and Y is improperly priced. Stock X is under –Priced relative to the security market line, while stock Y is over –priced.

Figure No. 2.2

Movement of stock



Source: Thapa, Bhattarai and Basnet; 2006: 218

As a result, stock X is expected to provide a rate of return greater than that required based on its systematic risk. In contrast stock Y is expected to provide a lower return than that required compensating for its systematic risk. Investors seeing the opportunity for superior returns by investing in stock X should rush to buy it. This action would drive the price up and the expected return down. How long would this continue? It would continue until the market price was seen. The expected return would now lie on the security market line. In the case of stock Y, investors holding this stock would sell it, recognizing that they could obtain a higher return for the same amount of systematic risk with other stocks. This selling pressure would drive Y's market price down and its expected return up until the expected return was on the SML. When the expected returns for those two stocks return to SML market equilibrium will again prevail"(Horne and Wachowicz, 1995; 107-108).

2.1.12 Arbitrage Pricing Theory (APT)

Arbitrage is the process of earning risk less profits by taking advantage of differential pricing for the same physical asset or security. As a widely applied investment tactic, arbitrage typically entails the sale of security at a relatively high price and the

simultaneous purchase of the same security (or its functional equivalent) at a relatively low price.

Arbitrage activity is a critical element of modern, efficient security markets. Because arbitrage profits are by definition risk less, all investors have an incentive to greater resources and inclination to engage in arbitrage than others. However, it takes few of these active investors to exploit arbitrage situations and, by their buying and selling actions eliminate these profits opportunities" (Reilly and Brown; 2004: 284).

"The basis foundation of Arbitrage pricing theory is 'Law of one price' Law of one price states that two identical goods cannot be sols at different process there will be the presence of arbitrage opportunity. Arbitrage opportunity means zero additional investment, zero additional risk but presence of additional return." If two identical goods sold at differing prices anyone could engage in arbitrage by simultaneously, buying at low price and selling high price and make risk less profit. Arbitrage also applies to financial assets. If two financial assets have the same risk they should have, the same expected return. If they do not have the same expected return, a risk less profit could be on by simultaneously issuing at low return and buying the high return assets. Arbitrage causes prices to be revised as suggested by the law of one price." Arbitrage pricing process can be shown as below (Thapa, Bhattarai and Basnet; 2006: 220).

$$E(r_i)=\lambda_0+\lambda_1.b_{i1}+\ldots\ldots+\lambda_n b_{in}\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (5.35)$$

Where,

$E(r_i)$ = required rate of return on asset i or equilibrium rate of return.

λ_0 = risk free rate of return.

λ_1 = constant variable

b = systematic risk factor or independent variable"

"Arbitrage is the process of earning risk less profits by taking advantage of differential pricing for the same physical asset or security. As a widely applied investment tactic, arbitrage typically entails the sale of security at a relatively high price and the

simultaneous purchase of the same security (or its functional equivalent) at a relatively low price.

Arbitrage activity is a critical element of modern, efficient security markets. Because arbitrage profits are by definition risk less, all investors have an incentive to take advantage of the whenever they are discovered. Granted, some investors have greater resources and inclination to engage in arbitrage than others. However, it takes relatively few f these active investors to exploit arbitrage situation and, by their buying and selling actions, eliminate these profit opportunities" (Sharpe, Alexander and Bailey; 2003: 284).

2.1.13 Beta Co-efficient

Beta Coefficient is defined as a comparative measure of the sensitivity of an assets return to changes in the return on the market portfolio. It tells is how much systematic risk a particular asset has relatively to an average assets. The tendency of a stock to move up and down with the market reflected in its beta coefficient, β. Therefore, beta is a key element of the CAPM; mathematically the beta coefficient of a stock is the stock's co-variance with the market portfolio divided by the variance of the market portfolio. (Kothari, Shaken and Stoan; 1995:117).

2.1.14 Portfolio Performance Evaluation

Risk and return should be considered by giving important priority when considering a portfolio performance. Due to absence of either risk or return, we cannot measure their performance of portfolio effectively. There are various methods applied to measure the portfolio performance. Among them, one of the important techniques that are Sharpe's Portfolio Performance Measure is considering here in this study:

) Sharpe's Performance Measure

William Sharpe developed it. Sharpe's measure divides average portfolio excess return over the sample period by the standard deviation of return over that period.

The Sharpe's measure of portfolio performance (designated S_p) is stated as

$$S_p \; X \frac{\overline{r_i} \; Z \overline{r_f}}{\pm_i}$$

Where,

S_p = Sharpe's index of portfolio performance.

r_i = average return on portfolio 'i' during a specified time period.

r_f = average risk free rate during the same period.

σ_i = standard deviation of portfolio 'i'

(Thapa, Bhattarai and Basnet; 2006: 421-424)

2.2 Review of Related Studies

2.2.1 Review of Journals and Articles

These days information highway or the internet has becomes to the most easily accessible mediums to gain information in any subject matter. In the study period different books and article have been consulted.

There is an article, "The theoretical relationship between systematic risk and financial variable" by Robert G. Bownan. The purpose of the study was to examine the relationship between risk and financial variables. Systematic risk of livered firm is equals to the systematic risk of the same firm without leverage. There is no direct relationship between earning variability and market risk. Systematic risk is directly related to the accounting beta. There is no theoretical basis for relationship of divided payout and beta. There is not only theoretical relationship between dividends and systematic risk but also size and growth of the firm and systematic risk.

This study shows that there is a theoretical relationship between systematic risk and firms accounting beta and systematic function are not a function of earning variability, dividends policies and size growth of firm.

There is another article by Mark Mitchell and Todd Pulvion, “Characteristics of Risk and return in Risk Arbitrage”. To determine whether the returns to risk arbitrage reflect market inefficiencies or rewards for bearing rare-event risk over the 1963 to 1986 time period.

Using a comprehensive sample of cash and stock-for-stock mergers, we examine returns generated from risk arbitrage. For constraints merger an investment in any merger cannot exceed 10 percent of total capital, sizes are limited by the liquidity of the under lying securities. The index fund must have an adequate amount of cash reserves to undertake the investment.

Finance from the investor’s perspective is explained as; “Investor’s whether they are individuals or institutions such as pension funds, mutual funds or college endowment hold portfolios that is they hold a collection of different securities. Much of the innovation in investment research over the past forty years has been the development of theory of portfolio management and this module is principally an introduction to their new methods. It will answer the basic question, what rate of return will investors demand to hold a risky security in their portfolio. To answer this question we first must consider what investors want how we define return, and what we mean by risk.

Investors want to make more money in the future. The key measure of benefit derived from a security is the rate of return. “The investor return is a measure of growth in wealth resulting from that investment. This growth measure is expressed in percentage forms to make if comparable across large and small investors. Stock returns may be riskier or more volatile, but this concept is a difficult one to express simply. To do so, we borrow a concept from statistics, called standard deviation. It is single measure, allowing us to quantity assets returns by risk and it also provides the basis for decisions about portfolio choice.”

2.2.2 Review of Nepalese Studies

Very limited numbers of journals are available in management and it is further hard to find any journals in the subject matter of finance in context of Nepal. In the Nepalese context, there are very limited numbers of articles can be found relating to management of commercial banks of Nepal. Specially, it is rare in the case of this research topic. However, there are available some independent-studies which are related to the Nepalese Stock Market, Portfolio management and Shareholders democracy are summarized below in detail:

Shrestha, (1947), carried out the study on "Shareholders Democracy and annual general meeting (AGM) feedback". This study critically analyzed the situation of common stock investors and the situation is not improved significantly till now. Though the size of the shareholders population in Nepal has been growing constantly the government seems to have not taken any initiation in formulating the separate Act which protects the shareholders right. Company and other acts relating to financial and industrial sector have provisioned rights of the shareholders as: -

- Voting right
- Participation in general meeting
- Right of getting information
- Electing as BOD
- Participation in the profit and loss of company
- Transferring shares.
- Proxy representation.
- Collective rights of shareholders are:
- Amend the internal bylaws.
- Authorize the sales of assets
- Enter into merges
- Change the amount of authorized capital

Some public limited companies have floated the shares of the general public without having shareholders representation in the board. There are many such companies, which conduct the annual general meetings just to fulfill their desire and do not consider the voice of the shareholders. Shrestha argued further to safeguard the investors interest: "The encouraging and growing confidence of shareholders over their investment seek an independent inquiry of disclosed contents of prospectus. This helps to satisfy a minimum standard of faith on investment in shares through relying on pros and cons of prospectus. It is therefore, important to dispose everything in prospectus, which could reasonably influence the mind of the prudent investors.

Various annual general meetings held by different public limited companies reveal a greater gap between disclosure made in prospectus and the actual results, which were reported. In this context the expression of disclosures philosophy and investigation of frauds in prospectus need to be reconciled to check and growing problems in the development of the capital market in Nepal.

Pradhan **(**1993**),** carried out a study on the topic of "Stock Market Behavior in a small capital market: a case in Nepal" in 1993, the study was based on the data collected for 17 enterprises from 1983 through 1990. One of the major objectives, which are related to this study, was "To access the stock market behavior in Nepal."

Pradhan has summarized the following findings:

- Dividend per share and Market price per share was positively correlated.
- Higher the earning on stocks, larger the ratio of dividends per share to market price per Share.
- There are positive relationship between dividend payment and liquidity.

Chopra **(**2046 B.S.**),** in his article "The Role of Foreign Bank in Nepal" conclude that the joint venture banks are already playing a dynamic and vital role in the economic development of the country and this will undoubtedly increase with time.

Shrestha **(**2055B.S**.)** has given a short foretaste on the "Portfolio Management in Commercial Bank, Theory and Practice". Shrestha has highlighted the following issues in his article.

The portfolio management becomes very important for both individuals as well as institutional investors. Investors would like to select a best mix of investment assets subject to the following aspects:

- Higher return which is comparable with alternative opportunities available according to the risk class of investors.
- Good liquidity with adequate safety of investment.
- Certain capital gain.
- Maximum tax concession.
- Flexible investment.
- Economic, efficient and effective investment mix.

In view of above aspects, following strategies are adopted:

- Do not hold any single security i.e. try to have a portfolio of different securities.
- Do not put all the eggs in one basket i.e. to have a diversified investment (making investment in different sectors).
- Choose such a portfolio of securities, which ensures maximum return with minimum risk or lower of return but added objectives of wealth maximization.

However, Shrestha also presented the following approaches to be adopted for designing a good portfolio and its investment:

- To find out the invisible assets (generally securities) having scope for better returns depending upon individual characteristics like age, health, need, disposition, liquidity, tax liability etc.
- To find out the risk of securities depending upon the attitude of investor toward risk.
- To develop alternative investment strategies for selecting a better portfolio this will ensure a trade off between risk and return to attach the primary objective of wealth maximization at lowest risk.

- To identify securities for investment to refuse volatility of return and risk.

In this study, Shrestha has presented two types of investment analysis techniques i.e. fundamental analysis and technical analysis to consider any securities such as equity, debentures bond and other money and capital market instruments. He has further suggested that the banks having been international net work can also offer access to global financial market. He has also point out the required skilled work force research and analysis and proper management information system in any type of commercial banks to get success in portfolio management and customer's confidence. (Shrestha; 2055: 13)

Dr. Shrestha (Ph.D.), **(**2000**),** in his article "Commercial Banks Comparative Performance Evaluation" concluded that the Joint Venture Banks are new operationally more efficient, having superior performance while comparing with local banks that are operating in Nepal. Better performance of joint venture banks is due to their sophisticated technology, modern banking method and skill. Their better performance is also due to the government's branching policy in rural areas. Local banks are efficient and expertise in rural sectors but having number of deficiencies. Thus, local banks are facing growing constraints of socio-economic, political system on one hand spectrum and that of the issues and challenge of joint venture banks commanding significant banking business on other spectrum**.**

2.2.3 Review of Unpublished Thesis

Miss. Bajracharya, (2000) conduct a study on "Investment of Commercial Banks in Priority Sector" with the objective of;

- To analyzed the trend of investments in private sectors for 10 years from 2047 B.S. to 2056 B.S.
- To analyzed the trend of repayment in private sectors for 10 years.
- To measure the effectiveness of the program in terms of the investment and repayment in rural and urban sector.

- To evaluate the banking procedures and services in disbursing loan in this sector.

Major Findings:

- The target of 12% investment of total outstanding liabilities in priority sector and 3% out of which has been invested in deprived sector has been met by RBB.
- Trend analysis for 10 years shows the increasing trend of investment in priority sectors which shows that the CBs are giving due consideration to increase investment in priority sector.
- Interest charged on the loan disbursed in this sector is fairly less than the interest charge on loans for other purposes. In addition to this, there is high overhead cost incurred for supervision, administration and others in this program.
- Regression analysis shoes positive relation between investment and repayment.
- The chi square test of effectiveness of program is more effective in rural & semi rural area as compared to the urban areas.
- Investment on agriculture is higher than investment on industry and service sector.
- The study revealed that the procedure of loan disbursing itself is complicated for the borrowers to understanding.
- In fact, if the supervisors make the scheduled supervision & inspection & the frequent contact with the borrowers, the chance of misuse of the loan can be minimized.

Major Recommendations:

Researcher used to various financial tools to analyze the data to support the conclusion. The major ratios like total investment to total deposit ratio, loan and advances to total deposit ratio, net profit to total asset ratio, investment on government securities to total outside investment ratio etc. Other financial tools like return on portfolio return on loan and advances, return on share and debenture, return on government securities are used to find the relevance and significance of the samples. To process the financial data, some common statistical tools like co-variance, coefficient of variation, mean and trend analysis are used.

Mrs. Khaniya (2003), Conducted study on "Investment Portfolio Analysis of Joint Venture Banks" has been done in 2003. The study based on five joint venture banks and they are NABIL, SCBNL, HBL, NBBL and EBL.

The main objectives are general study is to identify the current situation of investment portfolio of joint venture banks in Nepal.

Major Findings:

- SCBNL and HBL have better position. NBBL and NABIL have a low position in the industry. But Everest Bank has a very low position in the industry because of having lowest mean return on shareholders' fund resulting from the negative returns in the fiscal years 1995/96 and 1996/97.
- SCBNL has the highest mean return and EBL has the lowest return. Expect EBL, all other four banks i.e.; NABIL, SCBNL, HBL and NBBL have good performance.
- SCBNL has the highest EPS and EBL has the lowest EPS. Similarly, HBL also has above mean EPS than industry average and that of NBBL is lower than industry average.
- Himalayan Bank has the lowest beta coefficient among the five joint venture banks which means that the systematic risk of Himalayan bank is the lowest among the JVBs. The portfolio return of NBBL is 94%. This return is the average capital gain yield and dividend yield.
- The coefficient of correlation between loans and advances in private sector and portfolio return of joint venture banks come out to rxy = -0.6. Therefore, it indicates that there is negative correlation between loans and advances in private sector and portfolio return of five JVBs in Nepal.

Major Recommendations**:**

Among other joint venture banks, SCBNL has the highest return and EBL has mean return than industry average. SCBNL and EBL mobilizes the funds in investment title is higher than the standard ratio. NABIL, SCBNL & HBL are investing low amount of

deposits on loans and advances which is lower than industry average and NBBL & EBL have invested a high amount of deposits to loans and advances title which is higher than industry average.

Mr. Joshi, (2004), has conducted a study entitled "Risk and Return Analysis of common stock of five listed Commercial Banks."

The major objectives of the study are to calculate and analyze the risk and return of banking sector, to evaluate common stock of listed commercial banks and to analyze whether the common stock of commercial banks are correctly priced or not etc.

Major Findings:

- Regarding the market capitalization of selected companies, SCBL has the maximum market capitalization and NBBL has the minimum market capitalization.
- Regarding the market capitalization of the inter industry, Banking sector has 65%, Insurance & Finance has 14%, Manufacturing & Processing sector has 13%, Hotel sector has 7%, Trading sector has 1% and Other sector has negotiable proportion of share in overall market capitalization.
- As analyzing the Coefficient of variation, he suggests that the banking industry is the best one for investment. Similarly, while analyzing individual securities, SCBL is the best for investment due to highest return and lowest C.V.

Joshi further concludes that the considering return, the return of SCBL is maximum (i.e.73.30%) but its risk also maximum but if risk is taken into account for consideration, NIBL has the minimum risk of 43.82%. In industry wise analysis, the expected return of finance and insurance has a maximum expected return (i.e. 27.70%), while other sector has a minimum expected return (i.e.16.61%). If the risk is assessed in term of C.V., Banking sector has minimum C.V. like 1.66, which indicates that it is better to invest on the shares of banking sector.

Major Recommendations:

Based on the findings and conclusion of the study, it is recommended to the investor that if they wish to generate higher return, then they should bear higher risk and invest in the shares of SCBL. But if they are risk averters and they want to invest in single assets, then they can invest in the share of NIBL or HBL because these two stocks have lower risk than that of portfolio risk. Portfolio analysis shows that the portfolio investment can reduce risk significantly. Thus, portfolio investment is recommended to receive high return at minimum risk.

Mr. Pokharel, (2006**),** has under taken a study entitled "Risk & Return on Common Stock Investment of commercial banks, with reference to six commercial banks.*"*

Among various objectives of his study, some majors basic objectives of his research are to analyze, whether the common stock of commercial banks are correctly priced or not, by analyzing the required rate of return and to study systematic and unsystematic risk associated with securities of the commercials banks.

Majors Findings:

- Among the six commercials banks, NABIL bank has highest expected rate of return on common stock (i.e.14.03percentage) and NIB bank has negative expected rate of return o common stock (i.e.-3.9698%). Similarly, the common stock of BOKL is most risky asset, which has highest standard deviation (i.e.52.15%) and HBL's stock is less risky due to lowest standard deviation (i.e.19.49%).
- Regarding the market capitalization of six selected companies, SCBNL has the maximum market capitalization (i.e.31.36%) and the market capitalization of BOKL is low by 7.11%.
- Considering the different investment sectors, the expected return of other sector is maximum by 34.53% and the processing sector has very low expected return (-12.076%). Similarly, considering coefficient of variation of different sectors, the trading sector has maximum by 18.49 units, which indicate that to earn 1 unit of return, the investor has to bear 10.49 units of risk. The coefficient of variation on manufacturing & processing is –3.1349 and –3.28 (negative) respectively.

- On the basis of required rate of return and expected rate of return, the study shows that RRR of NIBL, NABIL, SCBNL, HBL, EBL & BOKL is 0.0175, -0.0677, -0.0174, -0.0099, -0.0526, and –0.0903 respectively. The ERR of NIBL, NABIL, SCBNL, HBL, and BOKL is -0.0396, 0.1403, 0.2264, 0.1158, 0.1312 and 0.0021 respectively. As his study shows that the common stock of NIBL is overpriced and rest of all's common stocks are under priced.

Major Recommendations:

At the end of study, Mr. Pokharel recommended that before making investment decision, the investor should visit and discussion with investment Companies, with export and researchers because sharing experience, idea and view of export will provide grater help. He also advises that the investors need to diversify their investment to reduce risk. Proper construction of portfolio never takes any considerable loss.

Mrs. Pradhan, (2008), has conducted a study on "Portfolio Analysis of Common Stock Investment of Listed Companies".

The key objectives of the study revolve around the subject of finding out risk minimizing tools and techniques in relation to certain financial as well as other constraints. The main and basic objective of her study is to estimate an optimal portfolio among CS investment of different companies. However, the objectives are as below:

- To evaluate common stock of different companies in terms of risk and return.
- To analyze an optimal portfolio among Common Stock investment of different companies.
- To indicate whether the shares of different companies in Nepal are overpriced or under priced by analyzing the risk and return characteristics of the individual shares
- To evaluate the systematic and unsystematic risk associated with security under study.

Major Findings:

- Among the 7 banks, the different shares have different rate of returns within the range of -5.07 to 49.22. On the basis of average rate of return, the share of DCBL seems to be the best for investment.
- Observing the standard deviation of returns of the companies, Salt trading Corporation has the lowest standard deviation i.e. 2% and Soltee Hotel Limited has the highest i.e. 61.44%. SCBL, KFL, EICL, BNL and DCBL have standard deviation of 26.76%, 44.80%, 16.91%, 15.36% and 47.35% respectively. Salt trading Corporation has the lowest risk among all.
- The common stocks of Salt trading Corporation Limited seem attractive among all with CV of 0.27 and Bottlers Nepal Limited offers the highest risk per unit of return with CV of 4.17. So investors retaining the stocks of BNL should assume more risk than any others.
- Average rate of return of market is only 27.85% with the standard deviation of 32.62%. Coefficient of variation, which measures the risk per unit of return, is 1.17.
- The beta coefficient of HS and DCBL is 1.69 and 1.26 respectively and are aggressive stock which indicates that the sticks are riskier and volatile than market.
- The stock of SCBL, KFL, EICL, SH, BNL, STCL and DCBL have the systematic risk of 6.31%, 4.97%, 0%, 30.39%, 0.03%, 0%, and 16.89% respectively.
- The Sharpe index of portfolio performance measure of, SCBL, KFL, EICL, HS, BNL, STCL and DCBL are 1.54, 0.34, 0.23, 0.18, -0.56, 1.97, and 0.97 respectively.
- Based on the comparison of excess return to beta ratios with cutoff rate, only 2 securities i.e. STCL and SCBL have been selected for an optimum portfolio form available alternatives. The optimum weights are 18% and 82% respectively. The Portfolio Expected Return from the two securities is 38.18% and the variance is 4.83%.

Major Recommendations**:**

At the end of study, Mrs. Pradhan recommended that before making investment decision, the investor should visit and discussion with investment Companies, with export and researchers because sharing experience, idea and view of export will provide greater help. He also advises that the investors need to diversify their investment to reduce risk. Proper construction of portfolio never takes any considerable loss.

Mr. Aryal, (2009), has undertaken a study entitled "Portfolio Analysis on Common Stock Investment of Joint Venture Banks in Nepal".

The main and basic objectives of his study are to find out the condition of portfolio management, and to estimate an optimal portfolio among the common stock investment of five selected commercial Banks. The basic objective of the study is to estimate the portfolio on common stock investment of commercial banks in Nepal.

The other objectives of the study are as follows:

- To evaluate the common stocks of selected commercial Banks in terms of risk and return.
- To examine systematic an unsystematic risk associated with stock.
- To determine whether the share of listed commercial banks in Nepal are over-priced, under priced or correctly priced.

Major Findings:

- According to above calculation the expected return of NABIL is the highest among sample banks that is 56.06% and HBL has lowest one that is 17.95%.Moreover , NBBL , SCBNL and EBL have 32,99%,44.68% and 46.08% respectively expected rate of return.
- On the basis of S.D NBBL has highest value that is 0.6205 and lowest one is of NABIL that is 0.1219. In addition, HBL, EBL and SCBNL consist of 0.1283, 0.1353 and 0.2892 respectively.

- Considering the beta coefficient of mentioned banks, the beta coefficient of HBL is lowest 0.1384, and EBL, NBBL and SCBNL have one (1), 1.2944 and 2, 0024 are betas Co-efficient of these three banks respectively. Among them NBBL has highest Bea Co-efficient, that indicates that the return of NBBL is more volatile than that of market.
- The systematic risk of HBL is the highest one among the mentioned joint venture bank of Nepal i.e. 0.9465 and the lowest is 0.7213 of the NBBL. In the case of unsystematic risk, the NBBL has the highest i.e. 0.2787 and the lowest are 0.0535 of HBL, AS we know that unsystematic risk is diversifiable risk and could be eliminated through diversification.
- Considering the market capitalization of five sample banks, the market capitalization of NABIL, HBL, EBL, NBBL and SCBNL 26.77%,21.95%,13.08%, 03.18%and 35.02% respectively in the fiscal year 2006/07. The SCBNL has capitalized grater amount of money in the market i.e. Rs.13487050000 and the lowest amount that is capitalized by NBBL is Rs. 1223870000.
- Considering the market risk and return, the expected return is 5.55% and S.D. of market is 28.67% where coefficient of variation of the market is 5.1659.
- From the analysis of required rate of return and expected rate of return, it was found that NABIL, SCBL, under priced likewise in cases of HBL‘s is correctly priced and EBL and NBBL’s & stocks are overpriced.
- While creating the portfolio between the two assets of all the sample banks, the optimal portfolio of NABIL and EBL gives, the maximum expected return that is 62.37% whereas, the portfolio of NABIL & EBL gives the lowest expected return that is 3.37%.
- Correlation between NABIL & HBL is found 0.9942, which is highest between mentioned banks under the study and the correlation of SCBL & NBBL is 0.5839 that is the lowest correlation. However, all the banks are positively correlated but they are neither perfectly correlated nor negatively correlated.

- Considering the Sharpe's performance measure, the portfolio of HBL & NBBL has the best performance because of the highest risk premium return per unit of total risk that is (1.4015) and the portfolio of NABIL&EBL is worst due to the lowest risk premium return per unit that is (-0.0185).

Major Recommendations:

At the end of study, Mr. Aryal recommended that to evaluate the common stocks of selected commercial Banks in terms of risk and return it should examine systematic an unsystematic risk associated with stock and to determine whether the share of listed commercial banks in Nepal are over-priced, under priced or correctly priced.

2.3 Research Gap

Risk, return and portfolio are the most important part of finance because they can strong impact on investment. Thus, it is not very new concept. Many researchers have done research on this aspect. As long as researcher knows, no specific research has yet been able to go in-depth of the topic and has successfully accomplished the specified objectives of the research work. All of the previous research on this topic has been based on only showing the risk and return analysis of the stocks of commercial banks. Hence, this research will fulfill the prevailing research gap by calculating the portfolio risk, return and market price of different companies and estimating the optimal portfolio among the common stock on the basis of all relevant data and information of the latest six fiscal year of four Nepalese joint venture banks, which are the major concern of public share holders and others stakeholders. Furthermore, the portfolio performance has also been evaluated with using Sharpe index of portfolio performance measure, which has not been calculated on other studies.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents all the necessary steps to be followed throughout this research work in order to achieve and accomplish the objective of the study. Research methodology discussed in this chapter helps to guide the research study providing different issues and aspects. It systematically solves the various sequential steps to adopt by a researcher in studying problem with the objectives in view. This chapter is to outline the nature and sources of data, sample selection & classification of variables, techniques and steps adopted in interpreting and analyzing the data. It also focuses on how to collect required data, what is the population and sample, and what techniques to be adopted to analyze and interpret.

3.1 Research Design

Research design is the conceptual structure within which research is performed. Research design is an overall framework or plan, which specifies the sources and types of information relevant to the research problem. In this study, the research is based on recent historical data, which are collected from various secondary sources. The research study covers the data of six fiscal years up to 2009/10. It relates with the study of risk, return and portfolio analysis of commercial banks that based on available information.

This study is more analytical, empirical and less descriptive. Analytical in the sense that all the available data are analyzed by using various statistical tools and techniques, such as, standard deviation, coefficient of variation and regression model etc. All the data used in this study have been taken from related sources. The study is purely empirical due to purely historically data. The Risk, return and portfolio are main subjects of the study that follow the numerical data. For explanation of result, description has been also followed.

3.2 Population and Sample

Among the total 31 commercial banks only four commercial banks that is Nabil Bank Ltd., Standard Chartered Bank Ltd., Himalayan Bank Ltd. and Everest Bank Ltd. are taken as sample for the comparative study. The sample is chosen with an objective to do the portfolio analysis of these commercial banks and the data are taken from last 5 years. Populations of primary data are taken among 75 people.

3.3 Nature and Source of Data

This research study is based on both secondary and primary data. Published annual report of the concern banks are taken as the basic source of data. Similarly, related books, magazine, journals, articles, reports and data from Nepal Stock Exchange, Nepal Rastra Bank banking directive and financial statistics and related website etc. Previous related studies to the subject are also counted as the source of information.

3.4 Data Collection Techniques

Almost the data, which are necessary for the research is collected from secondary sources. However, during the study period, related bank officials, SEBO/N (Security Board of Nepal) and NEPSE (Nepal Stock Exchange) staffs. The information has also been collected by financial documents provided by commercial banks, NRB (Nepal Rastra Bank), trading manual published by NEPSE, NEPSE periodical articles, related Websites and previous research reports. During the study period the primary data are collected in informal opening survey has been also taken with the individual investor.

3.5 Data Analysis Tools

3.5.1 Market Price of Stock (P)

Among the various major data of this study, market price of stock is the most important tools because without market price, we cannot further calculation. There are three types of prices of the share, i.e. High price, low price & closing

price of each year, which are summarized and published by Nepal Stock Exchange. For the analysis, single one is needed. Therefore, two approach either average price (i.e. average of high and low price) or closing price can be used. It is denoted by symbol of “P”.

It may be very closer result if it is used average price that represents the price of whole year but it is very difficult to obtain the real average. To get the real average, volume and price of each transition of the stock and the duration of the time of each transaction in the whole year are necessary. But, it is very hard and difficult to include all the information. In this regard, it is very difficult to use average price as a market price of stock. Thus, the closing price of each year is used as the market price of the stock (MPS).

3.5.2 Dividend (D)

Dividend is a portion of net earning which are paid out to the shareholders as a reward for their investment. Normally there are two types of dividend i.e. cash dividend and stock dividend. If a company declares only the cash dividend, it is easy to calculate dividend amount. But, if company declares the stock dividend (Bonus Share), it is difficult to obtain the amount that really shareholders have gained. In such condition, they get extra numbers of shares as a dividend and simultaneously the price of stock declines due to increased numbers of outstanding stocks. So to get the real amount of dividend, there is no model or formula developed yet. But in this study, model is used which has been developed by considering practical and theoretical aspect after several discussing with NEPSE staffs & investors.

In case of stock dividend;

Total dividend = cash dividend + stock dividend % × Next year MPS

Where,

MPS = Market price per Share

Symbolically “D” detonates Dividend

3.5.3 Return on Common Stock Investment (R_j)

Return is the income received in an investment plus any change in market price, usually expressed as a % of the beginning market price of the investment. It is denoted by “r"

Symbolically,

r= Ending price - Beginning price+(cash dividend+stock dividend)
Beginning Price

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

Where,

r= Return on common stock investment.

D_t = Cash dividend received at 't' period.

P_t = Price of stock at 't' period.

P_{t-1} = Price of stock at 't-1' period.

3.5.4 Expected Return on Common Stock: E (r_i)

One of the main objectives of the study is to determine the expected return on common stock investment. Thus, Expected return is one of the main tools to measure the performance of the company.

Expected rate of return is the average rate of return on common stock, which is calculated by the arithmetic mean of historical returns.

Symbolically

$$\bar{r}_i = \frac{\sum r_i}{n}$$

Where,

$\bar{r}_i$ = Expected rate of return on stock 'i'.

n = Number of years that the return is taken.

ϕ = Sign of summation.

3.5.5 Standard Deviation (±)

Standard deviation is the statistical measurement of the variability of a distribution of return around its mean .it is the square root of the variance and measures the total risk on stock investment. Sigma sign denote it **(±)**.

Symbolically,

$$\pm_i \; X\sqrt{\frac{\int r_i \; Z\bar{r}_i \AA}{n \; Z1}}$$

Where,

$\exists_I$ = Standard deviation of returns on stock 'i' during the period n.

3.5.6 Co-efficient of Variation (CV)

The Co-efficient of Variation is defined as the standard deviation divided by the mean of expected return. It is used to standardize the risk per unit of return. In other word, it is the ratio of standard deviation of returns to the mean of that distribution. It gives the result regarding the unit of risk to bear for earning 1 unit of return.

Symbolically,

$$C.V. \; X\frac{\pm_i}{\bar{r}_i}$$

3.5.7 Beta ( )

Market sensitivity of stock is explained in terms of beta coefficient. Higher the beta, greater the sensitivity and reaction to the market movement. Logically, the systematic risk is covariance between the returns of an individual asset or portfolio and the returns of the market portfolio. The measure of systematic risk is represented by beta. It is an index of systematic risk, which cannot be eliminated through the means of diversification. It measures the sensitivity of a stock's return on the market portfolio.

Symbolically,

$$\beta_i = \frac{Cov(r_i, r_m)}{\sigma_m^2}$$

Where,

β_i = Beta co-efficient for stock 'i'.

COV (r_j, r_m)= Covariance between returns on stock I & return of market.

σ_m^2 = Variance of market return.

$$Cov(r_i, r_m) = \frac{\sum (r_i - \bar{r}_i)(r_m - \bar{r}_m)}{n - 1}$$

An asset or a portfolio with a beta grater than 1 is considered to be aggressive (more risky than the market). An asset or portfolio with a beta less than 1 is considered to be defensive (less risky than the market). Beta coefficient of market is always equal to 1.

3.5.8 Correlation Co-efficient (ρ_{ij})

The correlation is also a measure of the relationship between two assets. It can be taken on a value ranging from –1 to +1. Correlation and co- variance are related by the following equation.

Symbolically,

$$\rho_{ij} = \frac{Cov_{ij}}{\sigma_i \sigma_j}$$

Where,

σ_i and σ_j are standard deviations of returns for assets i and j.

ρ_{ij} = Correlation co-efficient of assets i and j.

There are various cases of correlation and risk conditions, which are presented as follows:

• Perfectly positive correlation (ρ_{ij} = +1):

Return on two perfectly positive correlated stocks would move up and down together and a portfolio of two such stocks would be exactly as risky as the individual stocks. Thus, the diversifications cannot reduce risk if the portfolio consists of perfectly positive correlated stocks.

• Perfect negative correlation ($\partial_{ij} = -1$):

Returns on two perfectly negative correlated stocks would move perfectly together but in exactly opposite direction. In this condition, risk can be eliminated. Perfect negative correlation almost never found in the real world.

• No relationship between return ($\partial_{ij} = 0$):

When the correlation between two stocks is exactly 0, there is no relationship between the returns of the two stocks. In such case, some risk can be reduced.

• Intermediate risk ($\partial_{ij} = +0.5$):

Most stocks are positively correlated but not perfectly. On average the returns on two stocks would lie on the range of +0.4 and +0.75. Under this condition, combining stocks in portfolios reduces risk but does not eliminate it.

3.5.9 Portfolio Risk & Return

A portfolio is a combination of investment assets. Portfolio theory deals with the selection of optimal portfolios, i.e. portfolios that provide the highest possible return for any specified degree of risk or the lowest possible risk for any specified rate of return. Portfolio management is related to the efficient portfolio investment in financial assets.

3.5.9.1 Portfolio Return (r_p)

The expected return on portfolio, $\overline{r_p}$ is simply the weighted, is simply the weighted average of the expected returns on the individual assets in the portfolio with the weights being the fraction of the total portfolio invested in each asset.

$$\overline{r_p} \; X \sum_{i X 1}^{n} x_i \; | \overline{r_i}$$

● **In case of two assets case:**

$$\overline{r_p} = x_i \overline{r_i} + x_j \overline{r_j}$$

3.5.9.2 Portfolio Risk ($\sigma_{P)}$

Portfolio risk is measured by a statistical tool standard deviation. It is a function of the proportions invested in the components, the riskiness of the components and correlation of return on the component securities. The portfolio risk is computed by using the following equations:

● In case of two assets:

$$\sigma_p = \sqrt{x_i^2 \sigma_i^2 + x_j^2 \sigma_j^2 + 2 x_i x_j Cov(r_i, r_j)}$$

3.5.10 Minimum Variance Portfolio

It is the ratio of two assets, which minimize risk ($\exists_{P)}$:

Formula:

$$x_i = \frac{\sigma_j^2 - Cov(r_i, r_j)}{\sigma_i^2 + \sigma_j^2 - 2Cov(r_i, r_j)}$$

Where,

x_i = weighted of stock i that minimize the portfolio risk of stock i&j.

$\exists_i$ = Standard deviation of stock i.

$\exists_j$ = Standard deviation of stock j.

3.5.11 Systematic Risk

Systematic risk refers to that portion of total variability in return caused by factors affecting the prices of all securities. Systematic risk is market related risk or non-diversifiable risk which is due to economy wide factors. Systematic risk is external to an industry and, of business and is attributed to board forces out of the business. Unlike systematic risk it is the risk that can be diversify away. Due to this character of this risk it is said to be relevant risk to be concerned.

We can sort out systematic risk out of total risk by using this tool mentioned below:

Total risk = Systematic risk + Unsystematic.

$\pm_i X \ _i^2 \mid \pm_m^2 \Gamma \pm_e^2$.....(*i*)

Portion of systematic risk = $\frac{SystematicRisk}{TotalRisk}$

$$X \frac{i^2 \mid \pm_m^2}{\pm_i^2}$$

Where,

$\exists_i^2$ = Variance of stock i.

$\exists_m^2$ = Variance of market.

$\wp^2$ = Square of beta of stock i.

3.5.12 Unsystematic Risk

Unsystematic risk, which is also called diversifiable risk, is that component of total risk that is unique to the firm and may be eliminated by diversification. The unsystematic risk can be removed by holding a wide range of well-diversified portfolio where the returns on such well-diversified portfolio will vary due to the effects of market-wide or economy wide factors.

Portion of unsystematic risk will simply be (1- portion of systematic risk).

3.5.13 Sharpe's Portfolio Performance Measure (S_P)

It was developed to evaluate a portfolio's performance, considering both return and risk simultaneously which measures the reward to total volatility trade off. Sharpe's Performance Measure can be defined by this equation:

$$S_P \; X \frac{\bar{r}_i \; Z r_f}{\pm_i}$$

Where,

S_P = Sharpe's Portfolio Performance Measure for portfolio.

r_i = Average/ Expected return from portfolio 'i'

$\exists_i$= Standard deviation of returns for portfolio 'i'

r_f = Risk free rate of return.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1 Presentation and Analysis of Secondary Data

This section involves interpretation and analysis of secondary data to analyze portfolio management of common stocks of CBs; required variables are calculated using financial as well as statistical tools follows.

4.1.1 Risk and Return Analysis of Individual Stocks

In order to analyze risk and return analysis of individual stocks, there are many terms to be calculated in the process of gaining knowledge about risk and return pattern of individual stocks, which are presented in the following way.

a. Single period rate of return r_i

b. Expected rate of return $E(r_i)$

c. Variance σ_i^2

d. Standard deviation σ_i

e. Coefficient of variation CV

Single period rate of return is the basic random variable in investment analysis which measures the speed at which the investors' wealth increases or decreases. [1] where as expected tare of return is the weighted average rate of return. Likewise variance is a statistical measure of the variability of a set of observations or it is the measure of total risk. The greater the variability of returns, the riskier the project and vice-versa. Standard deviation is the square root of the variance of the rate of returns i.e. higher the standard deviation higher the risk. These all variables of each security are calculated in the following table and calculating procedure is almost discussed in chapter third.

4.1.1.1 Single Period Return and Expected Return

Table No. 4.1

Single Period rate of return r_i and Expected Rate of Return E(r_i)

Name of CBs	Fiscal year					
	2006	2007	2008	2009	2010	E(r_i)
NABIL	0.575	0.5449	1.6496	0.5809	0.5072	0.5686
HBL	0.4242	0.4913	0.5668	0.3462	-0.5193	0.2618
EBL	0.3088	0.6138	0.607	0.438	-0.3198	0.3296
SCBNL	0.4126	0.8678	1.088	0.2758	-0.4464	0.4396
Average	0.4302	0.6295	0.9779	0.4102	-0.1946	0.3999

Source: Appendix-II

Above table shows the single period rate of return which measures the speed at which investor's wealth increases and decreases. Between year 2006 to 2010, the highest single period rate of return (r_i) is 1.6496 (164.96%) at 2008 of NABIL bank and the lowest single period rate of return (r_i) is faced by EBL at 2010 i.e. -0.3198. Likewise, second highest single period rate of return is 1.088 of SCBNL at 2008. Where as the third and fourth highest returns are 0.8678 and 0.6138 of SCBNL and EBL respectively at year 2007. In the year 2010, all the single period rate of returns of HBL, EBL and SCBNL are in negative except NABIL bank. From the above table, it is clear that the annual rate of return of CBs is not consistent.

As shown in table 4.1 above, the highest expected rate of return E(r_i) is 0.5686 (56.86%) of NABIL bank. The second highest expected rate of return is 0.4396 (43.96%) of SCBNL. The third and fourth highest expected rates of returns are 0.3296 and 0.2618 of EBL and HBL respectively.

As a whole, on the basis of expected rate of return NABIL bank is in best position with highest expected return.

4.1.1.2 Analysis of Individual risk of CBs

Table No. 4.2

Standard deviation σ_i , coefficient of variation CV, variance σ_i^2

Name of the Banks	S.D.	Var.	C.V.
NABIL	0.5402	0.2918	0.95
HBL	0.4442	0.1973	1.6967
EBL	0.3983	0.1586	1.2084
SCBNL	0.3541	0.1254	0.8055
Average	0.4342	0.1933	1.1652

Source: Appendix-III

Risk is underlying factor of the security and associated factor of return. The risk factors of commercial banks are hidden along with standard deviation, which is 0.3541 to 0.5402. The standard deviation of the NABIL, HBL, EBL and SCBNL are 54.02%, 44.42%, 39.83%, 39.83% and 35.41% respectively .These indicators and comparison shown us most risky assets are of Nabil bank Ltd. However, Standard chartered Bank Limited is least risk consisting Assets.

Risk and return are one of the major determinants of investment. Therefore, an investor does not invest on the ground of one of them. They compare risk and return taking the degree of return in term of risk, which we measure as Co-efficient of variance (CV). This helps to rank the investment alternatives. The alternative with lower CV is preferable for investment. The calculation shows C.V among the commercial banks. On which basis SCBNL is least C.V consisting assets so these securities are more preferable among the other studied in this research work i.e. 0.8055. Himalayan Bank Ltd. hold highest C.V among the studied joint Venture Bank that is (1.6967)

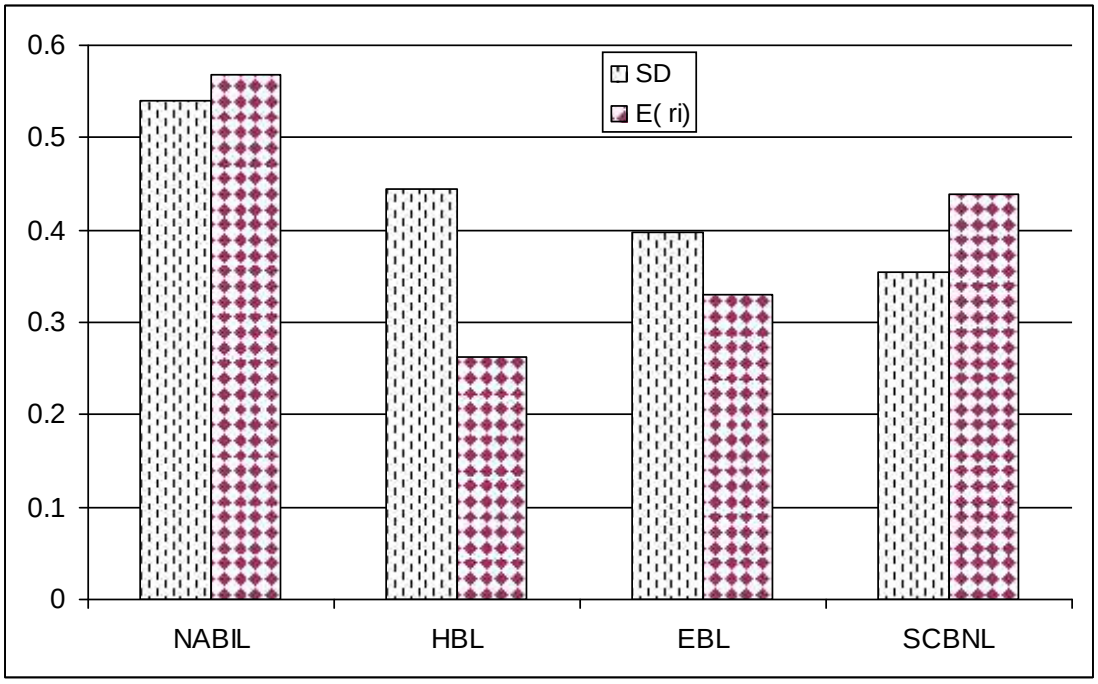
However, investors must give attention to the standard deviation of assets. Further knows that the expected return and standard deviation from any security is the object of choice for any investor. Ultimately, most investor is risk averter and they prefer highest return with low risk. Covariance is the tools that show how the return of

market and individual stock vary. Therefore, investor should concentrate about both risk and return but it is difficult to say that which security is best for investment point of view, for that purpose C.V. gives clear design about risk for any security per unit of return.

Expected rate of return $E(r_i)$ and standard deviation (σ_i) are also shown in the following figure.

Figure No. 4.1

Expected Rate of Return & SD of Securities



Source: Table no.4.1 & 4.2

4.1.2 Analysis of Market Risk and Return

There is only one stock market exist in Nepal namely Nepal Stock Exchange Limited (NEPSE). Overall market movement is represented by the market index i.e. NEPSE index. All the trading of stock is traded in Nepal Stock Exchange Limited. In this section, risk and return of each industry will compare with market risk and return. Market return and standard deviation are the mist important factors to analyze the risk and return of stock market. For the comparison of CBs return and risk with market return and risk, it is better to comparison based on NEPSE index of commercial banking sector.

Table No. 4.3

Market Risk and Return

Fiscal Year	NEPSE Index (m)	r_m
2005	222.04	-
2006	286.67	0.2911
2007	386.83	0.3494
2008	536.32	0.3864
2009	749.10	0.3967
2010	477.73	-0.3623

Source: Appendix- IV

Table No. 4.4

Expected market return E(r_m), standard deviation of market σ_m, variance of market σ_m^2 & coefficient of variation CV

Expected return of market E(r_m)	0.2123
Standard deviation of market σ_m	0.3238
variance of market σ_m^2	0.1048
coefficient of variation CV	1.525

Source; Appendix- IV

The above table shows that the expected return of market is 0.2123 (21.23%) which is very lower than CBs average expected return of 5 years i.e. 0.3999 (39.99%). Standard deviation of market σ_m is 0.3238 and average standard deviation of CBs is 0.4342 which is also higher than the market standard deviation. Likewise variance of market is 0.1048 whereas average variance of CBs is 0.1933, which is around two times higher than market variance. It means that market risk and return both are less than CBs average risk and return. CV of market is 1.525 where the average CV of CBs is 1.1652.

4.1.3 Analysis of Market Sensitivity

Market sensitivity of any stock is explained by its beta coefficient. Beta coefficient $ß_i$ measures of how much systematic risk a stock i has relative to an average risky asset

(market) when investors hold large portfolios. It measures the responsiveness of a security to movements in the market portfolio. For the purpose of market sensitivity analysis following variables has to be calculated.

a) covariance between market return and assets return
b) correlation between asset i and market
c) Beta coefficient

Table No. 4.5

Covariance, Correlation and Beta of each Bank with Market

Banks	$Cov(r_i\ r_m)$	$þ_{im}$	$ß_{im}$
NABIL	0.0381	0.2178	0.3634
HBL	-0.084	-0.584	-0.8012
EBL	0.1161	0.90	1.107
SCBNL	0.1621	1.4138	1.5461
Average	0.0581	0.4869	0.5538

Source; Appendix- V

In the above table, SCBNL has a highest covariance between asset and market i.e. 0.1621. Similarly, covariance between assets return and market return shows how return of asset i and market return moves together. The HBL has lowest and negative covariance with market i.e. -0.084. Covariance of EBL is 0.1161 and covariance of Nabil bank is 0.0381 which is lower covariance than average covariance i.e. 0.0581. Similarly covariance of EBL and SCBNL has higher covariance than average covariance.

Correlation between assets return and market return shows the relationship between two variables. Its value is limited between the ranges of +1 to -1. In the above table, correlation of EBL with market is 0.90 is nearly equal to +1 and this is the highest correlation coefficient with market among the other correlation coefficients. The lowest correlation is –0.584 of HBL. The highest correlation coefficient is 1.4138 of SCBNL which is greater than +1. The correlation coefficient of NABIL bank is 0.2178.

Market sensitivity of stock is explained by its beta coefficient. The above table shows the industry average beta coeff. Is greater than market index i.e. if the value of beta is greater than 1, the stock is known as high volatile than market or sensitivity of stock with market is higher. Stock with beta more than 1 is considered as aggressive where as if beta is less than 1 the stock is known as less volatile than market or defensive stock. In the above table, EBL and SCBNL have a beta coeff. 1.107 and 1.5461 resp. i.e. beta is greater than 1. Therefore they are offensive assets. Beta coeff. Of Nabil Bank is 0.3634 which is lower than market beta. It means that the stock of Nabil Bank is less volatile than the market i.e. stock seems to be defensive. HBL has beta of -0.8012, which is also indicated that it is a defensive asset & seems to less volatile than market.

4.1.4 Analysis of Diversifiable and Undiversifiable Risk

The total risk is measured by the standard deviation or variance of the rate of return. The total risk can be divided into diversifiable and undiversifiable risk and it is denoted by σ_i^2. Higher the standard deviation higher the total risks.

Total risk can be partition into systematic risk and unsystematic risk. The portion of total risk that can be diversified away is diversifiable risk. It is also called unsystematic or avoidable risk or non- market risk or company specific risk. It is caused by events particular to the firm. For example labor stricken, management errors, advertisement campaigns etc. The formula is given as:

Unsystematic risk = Total risk (σ_i^2) - systematic risk

The portion of total risk of an individual security caused by market factors that simultaneously affect the price of all securities which can't diversified away is called systematic risk, market risk or unavoidable risk or beta risk. It appears from factors, which systematically affect all firms such as war, inflation, recession, high interest rates, long-term change in consumption pattern in the economy etc. The formula is given as:

Systematic risk= $ß_{im}^2 \sigma_m^2$

The percentage of total risk i.e. systematic risk can be measured by coefficient of determination ($þ_{im}^2$). The formula is given as:

$$\textbf{Undiversifiable proportion} = \frac{SystematicRisk}{TotalRisk}$$

$$= \frac{i^2 \pm m^2}{\pm i^2}$$

Table No. 4.6

Total risk, Unsystematic Risk & Coefficient of Determination

Name of CBs	Total risk $\sigma_i 2$	Systematic risk	Unsystematic risk	Coefficient of determination
NABIL	0.2918	0.0138	0.278	0.0473
HBL	0.1973	0.0673	0.13	0.3411
EBL	0.1586	0.1284	0.030	0.8096
SCBNL	0.1254	0.2505	-0.1251	1.9976
Average	0.1933	0.115	0.0782	0.7989

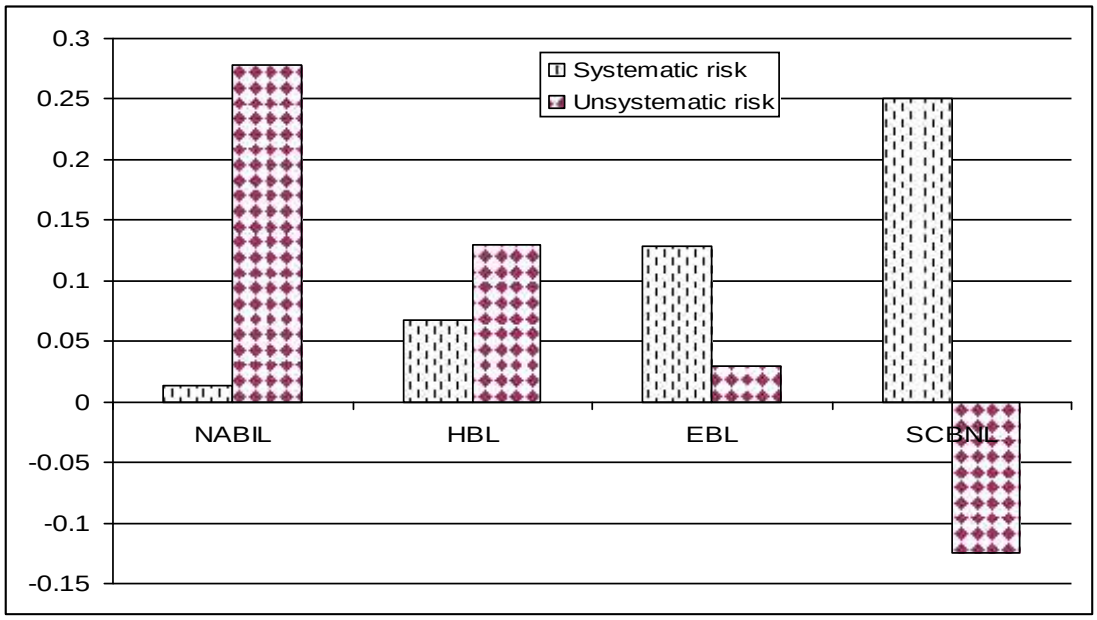
Source: Appendix III & V

In the above table, the highest total risk is 0.2918 of Nabil Bank. It is also a very higher than industry average total risk i.e. 0.1933. Total risk σ_i^2 of HBL is 0.1973 which is also higher than industry average total risk. Total risk of EBL is 0.1586 and the SCBNL has lowest degree of total risk i.e. 0.1254 among four CBs. It is also very lower than the average total risk. SCBNL has a higher level of systematic risk i.e. 0.2505 and Nabil has a lowest systematic risk i.e. 0.0138. Systematic risk of EBL is 0.1284, which is higher than the average systematic risk and HBL has 0.0673 systematic risk which is lower than average systematic risk. In case of unsystematic risk, Nabil Bank has highest level of unsystematic risk i.e. 0.278 and SCBNL has negative unsystematic risk i.e. -0.1251. HBL and EBL has unsystematic risk of 0.13 (which is higher than the average unsystematic risk) and 0.030 (which is lower than the average unsystematic risk) respectively.

Portion of systematic risk and unsystematic risk on total risk is clearly shown on the following chart.

Figure No. 4.2

Portion of Systematic Risk and Unsystematic Risk



Source: Table No. 4.6

4.1.5 Portfolio Analysis

The main objective of portfolio is reduction of unsystematic risk, from which the investor can get optimum return in certain degree of risk by constructing efficient portfolio. In making portfolio investment, the total available fund is divided into proper amount or proportion for different securities that means. The total weighted of a portfolio is equal to 100%. In this chapter, co-variance of the returns of the given two stocks and proportion of stock i.e. the optimal weight is calculated to minimize the risk and to find the risk and return of the portfolio assets.

4.1.5.1 Minimum Variance Portfolio

Minimum variance portfolio is a portfolio with lowest level of risk in efficient frontier, which is also called risk minimizing weight or optimal weight. In two stock portfolio the optimal weight to invest in stock is expected return of that portfolio and portfolio risk of that minimum variance portfolio are calculated in the following table.

Table No. 4.7

Optimal Weight for the Minimum Variance, Portfolio Expected Return and Portfolio Standard Deviation

Name of Portfolio		x_i	x_j	$E(r_p)$ %	σ_p %
Stock i	Stock j				
NABIL	SCBNL	1.30303	-0.3303	0.2519	0.4172
NABIL	HBL	0.6567	0.3433	0.3408	0.6974
NABIL	EBL	0.7057	0.2943	0.0337	0.5123
SCBNL	HBL	0.0001	0.9999	0.3373	0.4828
SCBNL	EBL	0.6119	0.3881	0.3128	0.3813
HBL	EBL	0.5354	0.4646	0.5711	0.6570

Source: Appendix VI

According to the analysis of minimum variance portfolio (shows in table no. 4.7 above), negative weight can be seen. Negative weight can be interpreted in two way, first interpretation is that the negative weight can be used to represent a short sale but provision of short sale is not applicable in Nepal and second interpretation is that a negative weight may indicate that the investor created a leveraged i.e. borrowed or margined, portfolio by selling a security that has the same risk and return statistics as the asset with the negative weight. In the above table, weights are calculated according to the formula of minimum variance portfolio. The highest portfolio return among 6 portfolios is 57.11% from the portfolio of HBL and EBL and high level of portfolio risk i.e. 65.70 and weight for HBL is 0.5354 and for EBL is 0.4646. Portfolio constructed by NABIL & EBL has a least portfolio return among 6 portfolios with 51.23% portfolio standard deviation. In this portfolio, weights are 0.7057 and 0.2943 of NABIL & EBL respectively. Likewise highest portfolio risk is 69.74 % from the portfolio of NABIL & HBL with 34.08% portfolio expected returns. Weight of this portfolio is 0.6567 is of Nabil bank and 0.3433 is of HBL.

4.1.5.2 Capital Assets Pricing Model (CAPM) or Security Market Line (SML) Analysis

Comparison of required rate of return and expected rate of return gives that result whether the common stock is under priced or over priced. Generally, for the price evaluation, the calculation required rate of return is necessary and it can be calculated by using the following formula.

K_i or $\sum(r_i) = r_f + [E(r_m) - r_f] \times ß_i$

In the above equation, the risk free rate of return (r_f) is needed to determine required rate of return. The discount rate of Treasury bill (T-bill) issued by Nepal Rastra Bank is taken as risk free rate (r_f) in Nepal. NRB issued two types of T-bill i.e. 91 days and 364 days but According to the suggestion of T-bill section of NRB, it is better to take 364 days weighted average discount rate as risk free rate. T-bill rate will be differs in various issues but in this study It is taken weighted average discount rate of 364 days T-bill of mid July 2010(fiscal year 2009/10). As provided by the T-bill section of NRB, the weighted average T-bill rate for fiscal year 2009/10 is 4.32%

Here,

$ki = 4.32\% + (21.23 - 4.32)\ ß_i$

$= 4.32 + 16.91\ ß_i$…….. (1)

Table No. 4.8

Expected Return, Beta and Required Rate of Return

Name of the Banks	$\bar{r}_i$	$ß_i$	ki	Evaluation
NABIL	56.86	0.3634	10.47	ki< $\bar{r}_i$ i.e. under priced
HBL	26.18	-0.8012	-9.23	NA
EBL	32.96	1.107	23.04	ki< $\bar{r}_i$ i.e. under priced
SCBNL	43.96	1.5461	30.46	ki< $\bar{r}_i$ i.e. under priced

Source: Appendix- VII

From the above table it is observed that the pricing of common stock of all the banks under study are found under priced. Thus, under pricing situation of common stock of the banks indicates that all the sample banks stock demands are very good investment opportunity. The investors can gain from buying the under priced stocks. It is recommended to purchase under priced stock but rational and efficient investment decision-maker need to analyze other dimensions as well to invest from the investment point of view.

4.1.6 Measurement of Portfolio Performance

Risk and return both have to consider when bearing in mind a portfolio performance. There are various methods applied to measure the portfolio performance. For the simplicity of the study, here the Sharpe Portfolio Performance is to be well thought-out.

The Sharpe portfolio performance measure is based on the capital market line (CML) and total risk, which makes it more suitable for evaluating portfolios rather than individual assets. Ranking of each portfolio using the Sharpe measure has been presented in Table no 4.9.

Table No. 4.9

Sharpe's Portfolio Performance Measurements (Sp)

Portfolio	Sharpe's Performance (S_P)	Rank
NABIL & SCBNL	0.5002	4
NABIL & HBL	0.4267	5
NABIL & EBL	-0.0185	6
SCBNL & HBL	0.6092	3
SCBNL & EBL	0.7071	2
HBL & EBL	0.8035	1

Source: Appendix-VIII

The Sharpe's portfolio performance measures for the market

$$Sm = \frac{\bar{r}_m - r_f}{\pm_m} = 0.5222$$

Where,

Risk free rate of return (r_f) = 4.32%

Expected Return of market ($\overline{r_m}$) = 21.23%

Standard deviation of market ($\pm_m$) =32.38%

In the above table, portfolio performance is evaluated by using Sharpe measure. Risk free rate is r_f is 4.32, which is taken from 364 day treasury bills rate in average. According to Sharpe measure, greater **S_P** means greater portfolio performance and portfolio constructed by HBL &EBL is the best performer among 6 portfolios, which **S_P** is 0.8035. Portfolio constructed by Nabil and EBL is the worst performance among 6 portfolios, which **S_P** is -0.0185. Portfolio of SCBNL & EBL get 2nd position in ranking, which **S_P** is 0.7071. Likewise portfolio of SCBNL and HBL get third position in ranking which **S_P** is 0.6093. **S_P** of NABIL & SCBNL is 0.5002, which lies in fourth position while portfolio of NABIL & HBL lies in 5th position, which **S_P** is 0.4267.

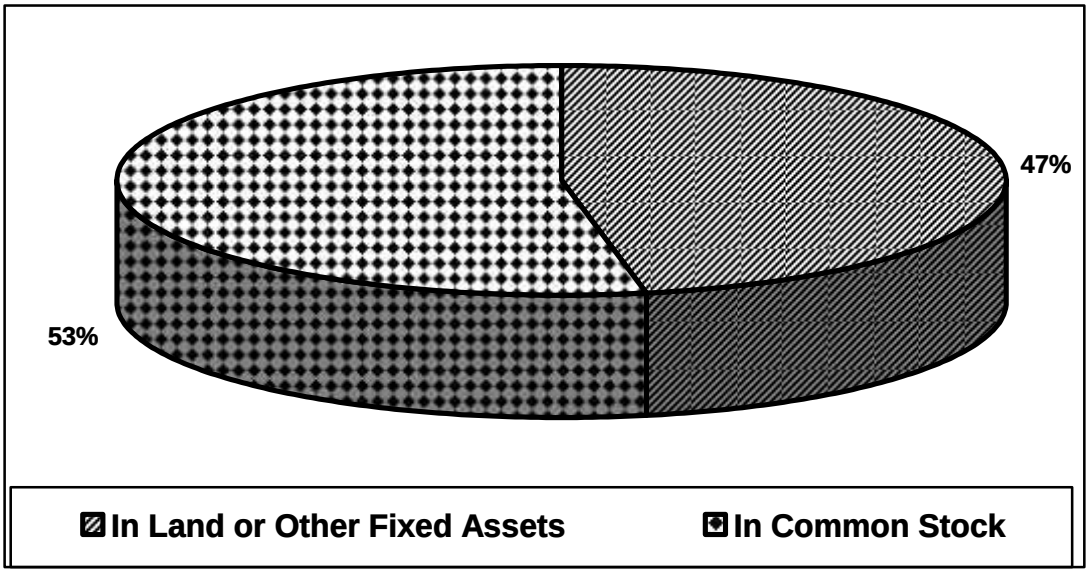
4.2 Presentation and Analysis of Primary Data

Collection of primary data through public opinion is very important in any type of research work. Research may not be complete if this section is ignored by researcher. Therefore, this section includes interpretation and analysis of primary data. Our objective is to know how many people are familiar with 'Portfolio Management' and 'how many are investing in joint venture commercial bank's share.

In this context 8 questionnaires were prepared and distributed to 100 people to get their opinions. The questionnaire consist queries basically with yes/no reply. The reply from 75 people out of 100 was collected. The summary of the result from those collected questionnaire is as follows:

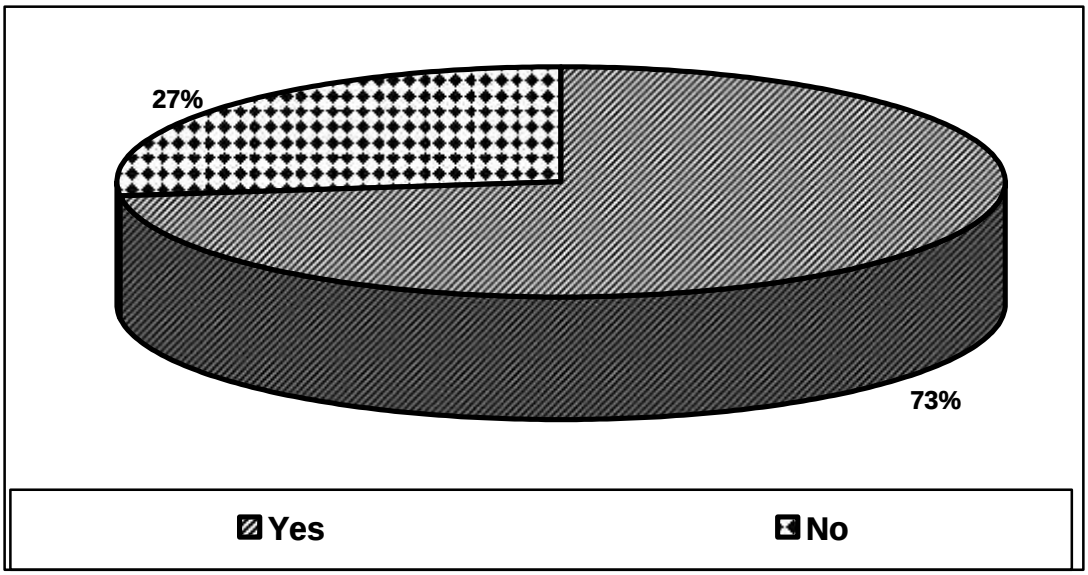
Primary Data Collection

Q. 1	Where do you normally invest your savings?	
In Land or other fixed assets	35	47%
In common Stock	40	53%



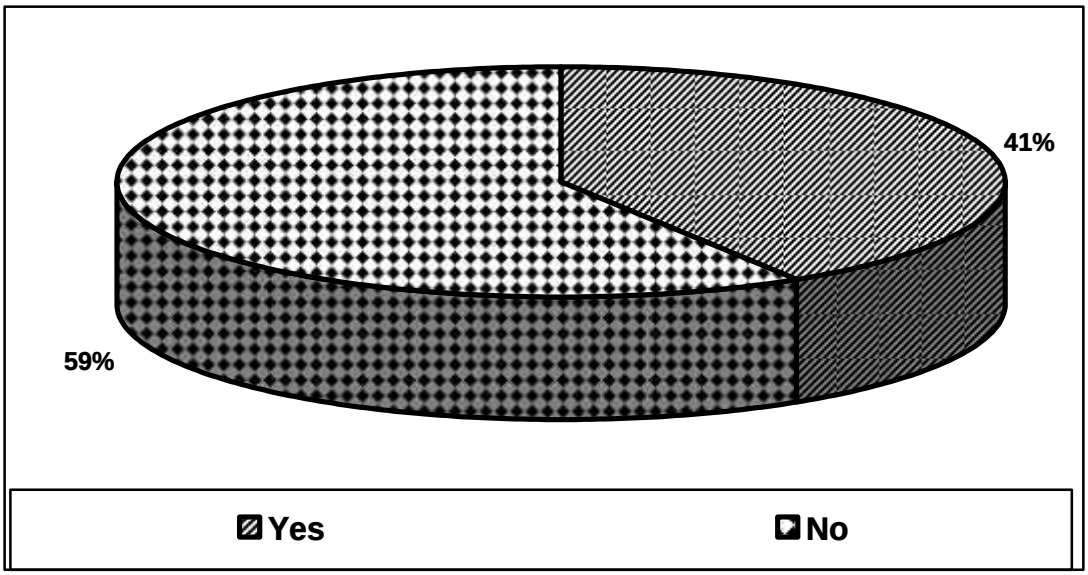
When we asked where they invest their savings in land/other fixed assets or in common stock. 40 people out of 75 were interested to invest in common stock. Remaining people were not inte

Q. 2	Do you want to put your savings in joint venture commercial Bank's share?	
Yes	55	73%
No	20	27%



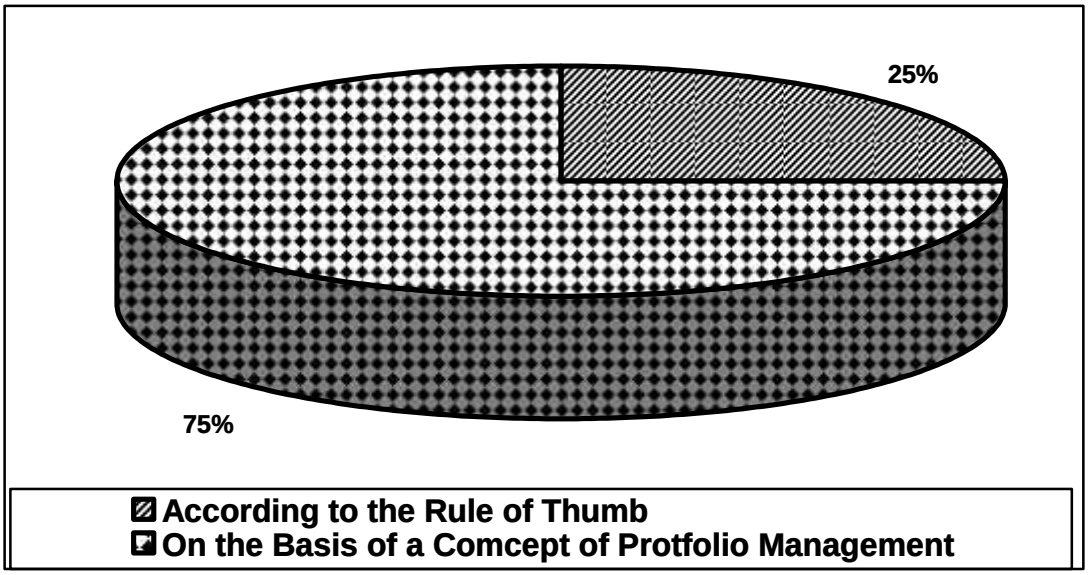
These days, there are many numbers of financial institutions and commercial banks are in Nepal. So people were seemed conscious in commercial bank's share. Therefore answer on investing their savings in joint venture commercial banks' share, 55 people gave the positive answer and other 20 people were negative.

Q. 3	Do you have any knowledge about Portfolio Management of common stock?	
Yes	31	41%
No	44	59%



The concept of portfolio management of common stock is far from their knowledge because only 31 people know and other 44 people were unknown.

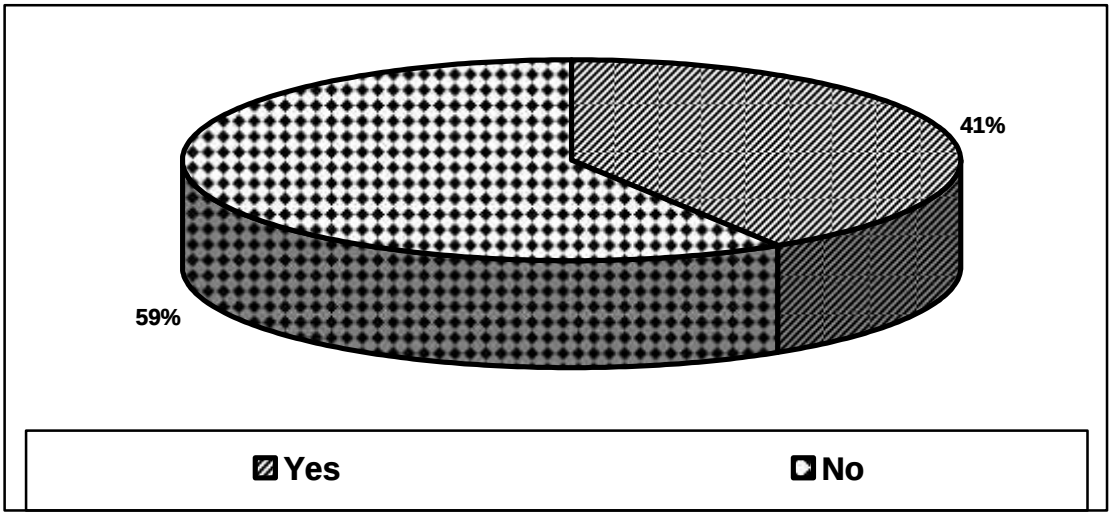
Q. 4	You buy common stocks according to the rule of thumb or give a look over a concept of portfolio management?	
According to the rule of thumb	19	25%
On the basis of a concept of portfolio management	56	75%



At the time of investment in common stock, the question is asked that whether they buy according to the rule of thumb or give a look over a concept of portfolio management. The survey shows that 19 people buy according to the rule of thumb

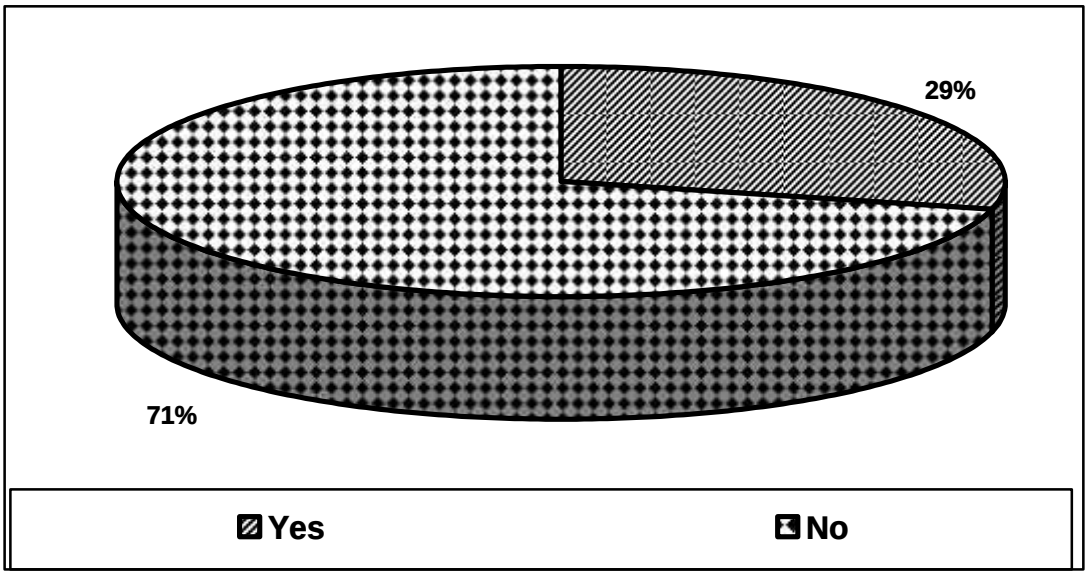
because they don't know the rule of portfolio management. But 56 people want to look over a concept of portfolio management.

Q. 5	Do you know about the objective of portfolio management?	
Yes	31	41%
No	44	59%



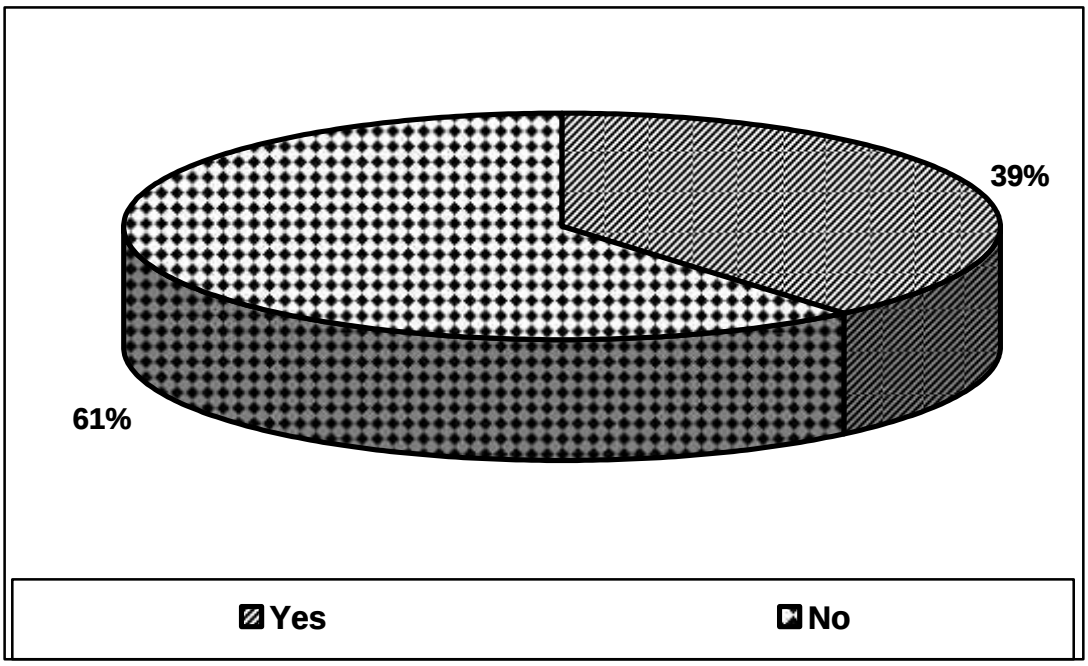
We asked the question about the knowledge of objective of portfolio management. 31 people said they know but other 44 people are totally unknown.

Q. 6	Do you know about the diversification techniques for reducing portfolio risk and maximizing portfolio return?	
Yes	22	29%
No	53	71%



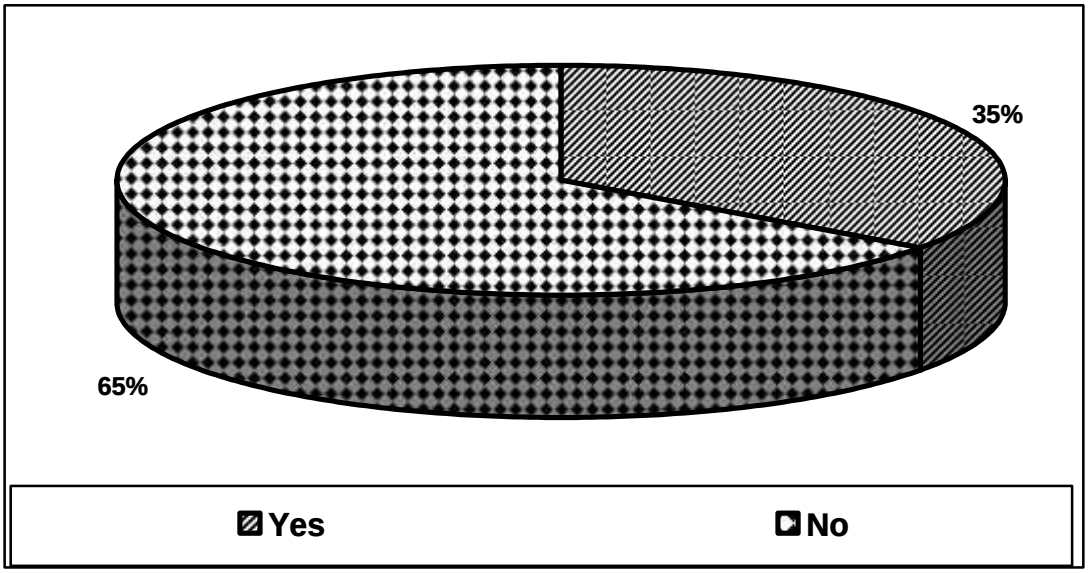
Portfolio management has its own diversification techniques for reducing portfolio risk and maximizing portfolio return. But only 22 people have an idea about the diversification techniques. And other 53 people have no idea.

Q. 7	Do you know about the selection techniques of portfolio securities?	
Yes	29	39%
No	46	61%



In order to create an optimum portfolio, selection of securities is much more important. So we asked that whether they know about the selection techniques of portfolio securities. 29 people gave the positive answer that they have some knowledge but 46 people said that they have no idea.

Q. 8	Do you ever revise your portfolio?	
Yes	26	35%
No	49	65%



Revision of portfolio management is important job. Scientific method of portfolio revision helps to maximize return and minimize risk but in many cases, it can be seen that revision of portfolio is made on the basis of experience rather than the scientific method. So responded were asked if they ever revise portfolio. Only 26 people said 'yes' but other 49 people said 'no'.

4.3 Major Findings of the Study

On the base on above analysis there are some findings in this study which are as follows.

- **Return and Risk Characteristic**

According to above calculation the expected return of NABIL is the highest among sample banks that is 56.86% and HBL has lowest one that is 26.18%.Moreover, SCBNL and EBL have 43.96% and 32.96% expected rate of return respectively. The different shares have different rate of returns with in the range of 032.96% to 56.86%. On the basis of average rate of return, the share of NABIL seems to be the best for investment.

Observing the standard deviation of returns of the companies, SCBNL has the lowest standard deviation i.e. 35.41% and NABIL bank has the highest S.D. i.e. 54.02%. HBL and EBL have standard deviation of 44.42% and 39.83% respectively.

Coefficient of variation can depict the exact position of risk per unit of return. Higher the CV higher the risk and lower the CV lower the risk. So, lower CV is preferable.

On the basis of CV, the common stocks of SCBNL seem attractive among all with CV of 0.8055 and HBL offers the highest risk per unit of return with CV of 1.6967. So investors retaining the stocks of HBL should assume more risk than any others.

- **Market Risk and Return**

Average rate of return of market is only 21.23% with the standard deviation of 32.38%. Coefficient of variation, which measures the risk per unit of return, is 1.525.

- **Market Sensitivity**

The stock of NABIL and HBL appeared to be defensive since there beta coefficients are less than 1 and are less volatile than the market as a whole. However the beta coefficient of EBL and SCBNL is 1.107 and 1.5461 respectively are aggressive stock which indicates that the stocks are riskier and more volatile than market. Among them stock of SCBNL is more risky as its beta coefficient is highest among all other stocks and the stocks NABIL of is least risky among all Ignoring the negative beta of HBL.

- **Systematic and Unsystematic Risk**

The stock of NABIL, HBL, EBL and SCBNL has the systematic risk of 1.38%, 6.73%, 12.84% and 25.05% respectively. Comparing each other, the stock of SCBNL has the highest systematic risk i.e. 25.05%, where as the stock of NABIL has the least systematic risk. The stocks of SCBNL appear most risky.

The unsystematic risk of stocks NABIL, HBL, EBL and SCBNL are 27.80%, 13%, 3% and -12.51% respectively. Among them, the stock of NABIL bank has the highest unsystematic risk and SCBNL has the least unsystematic risk. There is highest company specific risk of the stocks of NABIL i.e. 27.80%. Out of total risk of stocks unsystematic risks are can be diversified away.

- **Price Situation**

Comparing the required rate of return and the expected rate of return of the stocks of listed companies, the required rates of return for NABIL, HBL, EBL and SCBNL companies are less than expected / average rates of return, the stocks are under priced in the market and they are attractive to the investors. Hence investors are advice to purchase not to sell the common stocks of these companies.

- **Portfolio Analysis**

While creating the portfolio between the two assets of all the sample banks, the optimal portfolio of HBL and EBL gives the maximum expected return that is 57.11% whereas, the portfolio of NABIL & EBL gives the lowest expected return that is 3.37%.

Weights are calculated according to the formula of minimum variance portfolio. The highest portfolio risk is 69.74% from the portfolio of NABIL and HBL. The lowest portfolio risk is 38.13% from the portfolio of SCBNL and EBL.

Correlation between SCBNL & EBL is found 1.5329, which is highest between mentioned banks under the study and the correlation of NABIL & EBL is 0.2942 that is the lowest correlation. Whereas the banks SCBNL &HBL and HBL & EBL are negatively correlated i.e. -0.6587 & -5398.

- **Portfolio performance Evaluation**

Considering the Sharpe's performance measure, the portfolio of HBL & EBL has the best performance because of the highest risk premium return per unit of total risk is (0.8035) and the portfolio of NABIL&EBL is worst due to the lowest risk premium return per unit that is (-0.0125).

Major Finding from Primary data

- People invest their savings in land/other fixed assets or in common stock. Most of the people were interested to invest in common stock.
- These days, people were seemed conscious in commercial bank's share. Therefore answer on investing their savings in joint venture commercial banks' share, most of the people gave the positive answer and other people were negative.
- In case of concept of portfolio management of common stock only few people known about portfolio management.
- At the time of investment in common stock, the survey shows that few people buy according to the rule of thumb because they don't know the rule of portfolio management. But most of the people want to look over a concept of portfolio management.

- In case of knowledge of portfolio management, few people have knowledge of portfolio management.
- Portfolio management has its own diversification techniques for reducing portfolio risk and maximizing portfolio return. But few people have an idea about the diversification techniques.
- In order to create an optimum portfolio, few people gave the positive answer about selection of securities.
- It can be seen that revision of portfolio is made on the basis of experience rather than the scientific method. So, few people have knowledge about revise their portfolio.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Finance is mainly concern with the efficient flow of funds. In addition, investor tries best to provoke highest rate of return bearing lower level of risk. To trade of between risk and return, financial market plays vital role. Stock market one of the parts of capital markets has greatest attraction not only for the professional or institutional investors but also for the individual or private investors. Financial market classified as money market and capital market transit the fund from surplus unit to deficit unit. Although Nepalese financial market is not developed financial securities are high in demanded compared to its supply.

An investment is an assertion of money that expects to inflame additional money. Investment is a scientific method of using excess income bearing lower level of risk. It requires a present sacrifice for a future uncertain benefit. Saving and increment in the wealth position is the motivating factors of investments. Portfolio theory explores how risk averters construct portfolios in order to optimize expected returns for a specified level of risk. The theory quantifies the benefits of diversification. Each portfolio maximizes possible expected return for a given level of risk on the efficient frontier. Investors should not hold optimal portfolios on the efficient frontier and adjust their total market risk. Portfolio theory provides a broad context for understanding the interactions of systematic risk and reward.

Financial system is a set of institutional array through which surplus transferred to deficit units. Primary market denotes the market mechanism for the original sale of securities by an issuer to public. It is the only market in which the corporate or government issuer is directly involved in the transaction and receives direct benefits from the issue. Secondary market is simply a place where already outstanding securities are traded between investors. The markets create the price and allow for

liquidity. Investment rationalities are the pre considerations are to be taken in selection of investment alternatives. Investor does not invest in the entire investment alternative. Investment rationalities are investment objectives, investment horizon, and risk and return analysis, demand and supply in the market, taxes and investment strategies, bull and bear market and analysis.

The objective of portfolio management is to analyze different financial assets and delineate efficient portfolios and safety through precaution, risk minimization, generating income, marketability, liquidity etc. the objectives of this research are to understand portfolio investment, risk and return analysis and to find out optimal portfolio among the security traded in the NEPSE and to suggest remedies for existing problems. This research focuses on the effective use of liquidity in the best portfolio in NEPSE.

This study is to find out some certain clues about the theoretical aspects and their practical implication of portfolio theory developed with some limitations and assumption. Data of selected banks for last six years (2005/06 to 2009/10) were used for this research. This research is based on the secondary data.

Risk and return of sample banks are analyzed with the help of expected rate of return, standard deviation, variance and coefficient of variation. Market sensitivity was analyzed with the help of covariance with market, beta of the stock and correlation with market. Systematic risk and unsystematic risk were differentiated and pricing the stock at stock market is evaluated. Various portfolio set were developed having negative correlation to each other. Investment alternatives were selected among those all portfolio sets using Markowitz portfolio (two assets portfolio) selection model with the help of minimum variance portfolio selection method. Sharpe's optimum portfolio, Jensen's performance and Treynor's performance model was used to find out to optimum portfolio among the sample securities.

Thus, the focus of the study is portfolio management regarding how an individual investor can get the maximum return at certain level of given risk. How the optimum portfolio is constructed from the securities listed in NEPSE. Five listed commercial

banks are chosen as sample. The sampling is made based on personal judgments and data availability so the method used is purposive method of sampling.

The research is totally based on the historical data so it is a historical research. It covers the data from the fiscal year 2005/06 to 2009/10.

In order to achieve the objective of the study, the research has been designed based on secondary data collected from NEPSE, SEBON and concerned banks by using financial tools. Moreover, for clear understanding some graphs have been used and are interpreted in simple manner. It is empirical, descriptive and analytical study.

5.2 Conclusion

The conclusion of this research work may be important information for those who are directly or indirectly concerned with the common stock investment. From the analysis of various financial indicators and statistical tools of all the sample banks, the following conclusions are concluded through this research study.

NABIL has the highest expected rate of return i.e. 56.86 % and HBL has the lowest expected rate of return i.e. 26.18 % among studied. NABIL's stock is the most risky assets and SCBNL stock is the less risky assets. The lower CV is preferable for investment. Here on the basis of calculation of CV, SCBNL is least CV (i.e. 0.8055) consisting assets so these securities are more preferable among the other studied in this research work where Himalayan Bank Ltd. Hold highest CV i.e. 1.6967. Similarly, covariance between assets return and market return shows how return of asset i and market return moves together. The HBL has lowest and negative covariance with market i.e. -0.084. The highest covariance is 0.1621 of SCBNL. Beta is systematic risk and market beta is always 1. EBL and SCBNL have a beta coeff. 1.107 and 1.5461 resp. i.e. beta is greater than 1. Therefore they are offensive assets. Beta coefficient of Nabil Bank is 0.3634 which is lower than market beta. It means that the stock of Nabil Bank is less volatile than the market i.e. stock seems to be defensive. Considering the market risk and return, expected rate of return of overall market is 21.23% which is the lower than the expected return of all the sample banks. Therefore, these all banks stocks are under priced. The risk is also found in minimum portion i.e. 32.38%, which represent the lower sensitivity on investment in the market.

One of the main significant of beta is Capital Asset Pricing Model (CAPM), which describes the relationship between risk and equilibrium return. In this model, risk free rate plus a premium based on systematic risk of security is equilibrium rate of return of the stock. Comparing the expected rate of return and equilibrium rate of return there is found common stock of NABIL, SCBNL, HBL, EBL are under priced. So NABIL, SCBNL, HBL, EBL are having stock with a good investment opportunity because there is chance of increasing of stock value in near future. Thus, the investor can purchase the common stock of all those under priced banks. Using the Markowitz simple diversification, risk can be diversified on investing in two or more asset without losing considerable return. According to this research work, investing on NABIL & SCBNL, unsystematic risk could be reduced to 41.72%. Before diversification, risk of these particular banks was 54.02% and 35.41% respectively. Their expected return of portfolio is 25.19%. Similarly, after creating the portfolio between SCBNL & EBL, the risk can be minimized to 38.13% but before diversification, risk of these particular banks was 35.41% and 39.83% respectively. In this way, with doing the diversification, every bank could reduce their risk for the same or more return but after diversification risk can maximize also instead of minimization.

Similarly, considering the portfolio risk, the portfolio of NABIL and HBL has the highest risk i.e. 69.74% and the portfolio of NABIL and SCBNL has the lowest risk i.e. 41.72%.Correlation co-efficient between SCBNL & EBL is the highest one that is 1.5329 and correlation co-efficient between SCBNL & NABIL is 0.8286 which is about near of perfectly positively correlation (1). Portfolio performance evaluation measures the financial better position of created portfolio between mentioned sample banks by making comparison among them. Sharpe performance model is used to measure this performance, according to that model mentioned in research methodology. Various results are to be found which is presented in chapter 4 and showing in major findings parts. Considering the Sharpe's performance measure, the portfolio of HBL and EBL has the best performance because of the highest risk premium return per unit of total risk that is 0.8035. The portfolio of NABIL & EBL is worst due to the negative risk premium return.

5.3 Recommendations

Based on proceeding chapter of this study the following recommendations are made to related people as well as company: The finding of this study may provide significant information for those who are concerned directly or indirectly with the stock market activities. Thus, based on the analysis and findings of this study, the following recommendations are presented separately for investors and institution to overcome the weakness and inefficiency as well as to improve present stock performance.

⁾ Scientific decision making techniques

Nepalese investors are making their investment on the basis of rule of thumb and on the basis of past experience or fundamental analysis so they are recommended to make investment decision on the basis of scientific analysis or portfolio concept.

⁾ Flow of adequate information

Adequate information is necessary for right decision making so concerned individuals, institution should be well informed. NEPSE and SEBO can force to the companies for up to data information available to the general public and system of inconsistent information should be removed because it creates difficulties in investment analysis and decision making process.

⁾ Analyze risk and return before investing

Risk and return play vital role on common stock investment of banking sector. Therefore, it is suggested to analyze risk and return with sincerely before investing in this sector. According to the analysis of individual common stock of Joint Venture Bank, Investors should invest their money in common stock of SCBNL due to the lowest C.V. (i.e. 0.8055). It is also better to invest in common stock of NABIL bank due to lower CV i.e. 0.95, higher expected return (i.e. 56.86 %) and defensive type of stock.

- **Analysis of market sensitivity of common stock**

Analysis of the market sensitivity of common stock guides in investing on stock market. It is better to invest on such common stock, which has less beta i.e. defensive stock for that investor who does not eager to take high risk but higher return cannot obtain in such investment. Thus, investor should buy the under priced stocks when market is rising and sell the over-priced securities when market performance is falling. Similarly, the investors should hold that securities which are performing better than the market. This study recommends purchasing the common stock of all the banks because of the underpriced status.

- **Proper analysis of individual security, industry and overall market**

Investors must concern with the systematic risk that is measured by given stock's beta. The systematic risk is only the risk, which is priced at market. According to the study, the stock of SCBNL has the higher systematic risk i.e. 1.5461 and HBL has the lowest systematic risk i.e. -0.8012. Although, there is chance of more return than expected and there is a chance of heavy loss because stock market investment is risky job. Thus, investor must be well aware of this fact and must be able to visualize and analyze about the whole things. To beat the stock market, proper analysis of individual security, industry and overall market is always essential.

- **Diversification of funds for risk minimization**

Investors need to diversify their fund to reduce the risk. Proper construction of portfolio will reduce considerable potential loss, which can be defined in term of the risk but portfolio construction is dynamic and difficult job. Thus, investor should be selected the stocks that have higher return and negative correlation or near to zero correlation between different companies and sector. The portfolio revision is also necessary at certain interval time to get best return at lower risk. According to the study, the portfolio between EBL & SCBNL is recommended to construction due to lowest risk as well as higher return.

- **Modification of government rules and regulations**

Government should amend the rules and a regulation regarding to 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.

- **Reliability of financial information**

Before making an investment decision in stock, it is recommended to visit and discuss with investment companies, with individual export and researchers. Investor should make their investment decision because of reliable information or financial parameters of the related bank rather than imagination.

- **Flow of real financial statement**

The financial institutions and companies should provide the real financial statements. The data provided by NEPSE and the company itself are different in some cases. It creates confusion to potential investors about the actual financial condition of the company. They should publish their annual reports and information timely and accurately, which will help to the investors to take the investment decision on their common stock.

- **Regular research on portfolio management**

Portfolio management is a dynamic subject matter, which changes at a flash. It is ever challenging. There should be regular research in portfolio management. Corporate body and individual investor strongly recommended make regular research on portfolio managements.

- **Volatility of securities**

One of the major problems to manage the portfolio is volatility of different securities in Nepalese capital market and small investors are hesitated from investment due to the high fluctuation rate of CBS securities. So CBS should try to maintain stable rate of return.

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APPENDIX- I

QUESTIONNAIRE

Please tick (√) in the appropriate place.
Name:
Experience:
Institution:
Age:

1. Where do you normally invest your savings?
    a) In land or other fixed assets
    b) In common stock

2. Do you want to put your savings in joint venture commercial Bank's share?
    a) Yes
    b) No
3. Do you have any knowledge about 'Portfolio Management of common stock'?
    a) Yes
    b) No
4. You buy common stocks according to the rule of thumb or give a look over a concept of portfolio management?
    a) According to the rule of thumb
    b) On the basis of a concept of portfolio management
5. Do you know about the objective of portfolio management?
    a) Yes
    b) No
6. Do you know about the diversification techniques for reducing portfolio risk and maximizing portfolio return?
    a) Yes
    b) No
7. Do you know about the selection techniques of portfolio securities?
    a) Yes
    b) No

8. Do you ever revise your portfolio?
    a) Yes
    b) No

APPENDIX- II

Closing Price, cash dividend and stock dividend of common stock

	2005	2006	2007	2008	2009	2010
NABIL						
Closing price	1000	1505	2240	3875	4899	2384
Cash dividend	60	70	85	100	35	30
Stock dividend (%)	-	-	-	40	50	-
Total dividend	60	70	85	2060	1227	30
HBL						
Closing price	840	920	1100	1360	1760	816
Cash dividend	25	1.32	-	11.5	30	30
Stock dividend(%)	10	25	20	20	5	-
Total dividend	117	276.32	272	363.5	70.8	30
EBL						
Closing price	680	870	1379	1725	2455	1630
Cash dividend	-	20	20	-	25	40
Stock dividend (%)	20	-	-	20	-	-
Total dividend	175	20	25	491	25	40
SCBNL						
Closing price	1745	2345	3775	4750	6010	3279
Cash dividend	110	120	130	100	50	48
Stock dividend (%)	-	-	1	50	-	-
Total dividend	110	120	605	3105	50	48

Source; NEPSE; web:http://www.nepalstock.com, annual reports of CBs

APPENDIX- III

Calculation of variance of CBs

Name of the Banks	$[(r_i-\sum (\mathbf{ri})]^2$				
	2006	2007	2008	2009	2010
NABIL	0.00004	0.00056	1.16256	0.00015	0.00377
HBL	0.02637	0.05267	0.09303	0.00712	0.61012
EBL	0.04326	0.08077	0.07695	0.01175	0.42172
SCBNL	0.00073	0.18336	0.42042	0.02683	0.7850

APPENDIX- IV

Calculation of expected market return and market standard deviation

Fiscal Year	NEPSE Index	r_m	$r_m-\bar{r}_m$	$[r_m-\bar{r}_m]^2$
2004/05	222.04	-	-	-
2005/06	286.67	0.2911	0.0788	0.00621
2006/07	386.83	0.3494	0.1371	0.0188
2007/08	536.32	0.3864	0.1741	0.03031
2008/09	749.10	0.3967	0.1844	0.034
2009/10	477.73	-0.3623	-0.5746	0.33017
Total		1.0613		0.41949

APPENDIX- V

Calculation of covariance between CBs stock and market

Name of the Banks	$[(r_i-\bar{r}_{i)}(r_m-\bar{r}_{m)}]$				
	2006	2007	2008	2009	2010
NABIL	0.00050	-0.00325	0.18820	0.00227	-0.03528
HBL	0.01280	0.03146	0.05310	0.01556	-0.44882
EBL	-0.01639	0.03896	0.04830	0.01999	0.37345
SCBNL	0.00073	0.18336	0.42042	0.02683	0.7850

APPENDIX- VI

Calculation of Optimal Weight for Minimum Variance Portfolio

Name of Portfolio	Cov_{ij}	ρ_{ij}	x_i	x_j

Stock i	Stock j				
NABIL	SCBNL	0.1468	0.8286	1.30303	-0.3303
NABIL	HBL	0.1149	0.3909	0.6567	0.3433
NABIL	EBL	0.1910	0.2942	0.7057	0.2943
SCBNL	HBL	0.0858	-0.6587	0.0001	0.9999
SCBNL	EBL	0.1316	1.5329	0.6119	0.3881
HBL	EBL	0.1082	-0.5398	0.5354	0.4646

APPENDIX- VII

Calculation of Required Rate of Return k_i

Name of the Banks	ß$_i$	r_f%	$\overline{r_m}$ %	Required rate of return
NABIL	0.3634	4.32	21.23	10.47
HBL	-0.8012	4.32	21.23	-9.23 (NA)
EBL	1.107	4.32	21.23	23.04
SCBNL	1.5461	4.32	21.23	30.46

APPENDIX- VIII

Portfolio Performance Measure

Calculation of Sharpe's Portfolio Performance Measure

Portfolio	r_f	$\sum(r_p)$	σ_p	S_p
NABIL & SCBL	0.0432	0.2519	0.4172	0.5002
NABIL & HBL	0.0432	0.3408	0.6974	0.4267
NABIL & EBL	0.0432	0.0337	0.5123	-0.0185
SCBL & HBL	0.0432	0.3373	0.4828	0.6092
SCBL & EBL	0.0432	0.3128	0.3813	0.7071
HBL & EBL	0.0432	0.5711	0.6570	0.8035