CHAPTER - I
INTRODUCTION

1.1 Background of the Study

Nepal is landlocked and developing country. It is situated between two biggest countries India and China. Therefore, Nepal is known as buffer state. Economically, Nepal is dominated by Financial and investing activities of these countries. Due to geographical difficulties and lack of infrastructure development of financial sector, the growth of financial sector is very slow.

The World is converted into narrow boundary. The concept of borderless country took rapid motion in those days. Liberalization & Globalization is most common and essential part of investment and other activities. The open market concept creates several opportunity and threats. Rapid development in information technology sector is also milestone for increasing investment activities. Thus, competitive environment is formed in national market as well as international investor, which help to raise the life standard of people. The communist country like China has also opened their market and largest multinational companies invests their capital in various sectors. Therefore, today China becomes leading industrialist country in the World.

In Globalization and liberalization environment of World, Nepal adopt open market policy, which attracts several multinational companies to invest in different sector. Several State Owned Enterprises were established during those days under technical & financial Supervision of Japan, China, India & America. Several cottage industries & big industries were established and promoted during those days. After democracy with held in 2046, several financial companies were established and they are growths like mushroom. But lack of proper policy, Rules

& regulation and Supervision, Development of financial companies was very poor. The growths of financial companies' create several problems and unhealthy competition among the companies. The financial market is very small and underdeveloped. So investors have not enough knowledge about investment projects. They are imitating only the followers investing activities. They invest only on security at once.

Each and every managerial decision making is based on financial analysis and it covers acquisition, utilization, control and administration of fund. Finance has become an important branch of any economy of which share market is a leading sector. The financing activities help to raise the capital market which helps to expand the national economy.

Intermediaries companies are those who work like the bridge to finance company and customers. The commercial bank, stockbrokers are the example of intermediaries institution.

Secondary market is such market where already issued securities in primary market are re-transacted. In secondary market, there exist both organized and unorganized markets. Most transaction of security market is done in this market. The value of issued capital in securities is only known by stock broker and owner not issued company.

Apart from this market transaction, the transaction of securities is conducted through Over the Counter Market. The destination of transaction is not fixed and the transaction is made through telephone, Fax, Computer by stock Brokers. Therefore the market is often called Negotiated Market (Lohani, 1999:23-24).
"Investment, in its broadest sense means the sacrifice of current dollars for future dollars. Two different attributes are generally involved time and risk. The sacrifice

takes place in the present and is certain. The reward comes later, if at all, and the magnitude is generally uncertain" According to Sharpe, Alexander & Bailey

There are Forms of investment, one is financial investment is that investment in financial assets like common stocks, bond, preferred stock etc are called financial investments. Financial assets represent a financial claim. It is an assets that usually documented by some forms of legal representation. And another form of investment is Real investment is that, A real asset represents an actual tangible asset that may be seen, felt, held or collected e.g. real estate, gold etc. Investment in such tangible asset is called real investment.

Investment decision depends upon two factors, i.e. risk and return. Risk is the fluctuation of actual returns and expected returns the objective of portfolio analysis is to minimize risk at the gives rate of return. The minimization of risk is possible by investing in two or various securities. Investing in two or more securities is called portfolio. "A portfolio is collection of investment securities. Portfolio theory deals with the selection of optimal portfolio's that is, portfolios that provides the highest possible return or the lowest possible risk for any specified rate of return" (Western & Compel and 1992:302)

1.1.1 Securities Market
Capital plays a vital role in the economic development of the country. Nepal being one of the least developed countries in the world to make every possible endeavor to efficiently mobilize the available capital. The need of securities market development in Nepal has been an accepted reality; however, it had not been develop at desired rate. The growth of the economy very much depend on the strength and efficiency of its securities markets.

Security market is the place where securities are brought and sold through intermediary networks. It acts as the mechanism for bringing together buyers and

sellers of financial assets in order to facilitate trading. Security market helps in proper mobilization of found by facilitating the found transfer between those who have and those who uses hence contribute immensely in economic growth.

The history of securities market began with the flotation of shares to the general public by Biratnagar jute mills and Nepal Bank Limited in 1937. Introduction of the company Act in 1964, the first issue of Government Bond in 1964 and the establishment of Securities Exchange Center Limited in 1976 was other significant development resulting to capital markets.

Securities Exchange Center (SEC) was established with an objective of facilitating and promoting the growth of capital markets. The SEC was the only institution at that time managing and operating primary and secondary of long-term government and corporate securities.

A need to develop different institutional mechanism relating to securities market was strongly felt to avoid potential conflict of interest between the services provided. Therefore in1993, with a mandate to regulate and develop the securities market, securities board of Nepal (SEBO/N) was established.

The securities markets help to channel public savings to industries and business enterprises. Mobilization of such resources for investment is certainly a necessary condition for economy to tale off, but the quality of their allocation to various investment projects is as important as a factor for growth. Securities market help liquidation, which increases corporate sector productivity. Securities markets also accelerate growth indirectly by reducing risk, which encourage firm investment.

1.1.2 Meaning of Commercial Banks (CBs)

Commercial Bank is an institution, which accepts deposits, makes business loans and offers related services. It raises funds by collecting deposits from businesses and consumers via checkable deposits, savings deposits and time or term deposits. It makes loans to businesses and consumers. It also buys corporate bonds and government bonds. Its primary liabilities are deposits and primary assets are loans and bonds.

It also allow for a variety of deposit accounts such as checking, savings and time deposit. These institutions are run to make a profit and owned by a group of individuals or institutions. While the commercial banks offer services to individuals, they are primary concerned with receiving deposits and lending to businesses. CBs can be contrasted with investment banking firms, such as brokerage firms, which generally are involved in arranging for the sale of corporate or municipal securities.

According to Nepal Commercial Bank Act 2031 " A Commercial Bank refers to such type of bank other than specified bank related to Cooperative, agricultural, Industrial and other which deals in money exchange, accepting deposits and advancing loans etc" (Commercial Bank Act 2031).

CBs are those financial institutions that deal in accepting deposits of individual and institutions and giving loan against securities. They mobilize monetary resources from the savers to the users. They provide working capital needs of trade, industries and even to agricultural sectors. Moreover commercial banks also provide technical and administrative assistance to industries, trade and business enterprises. CBs pool together the saving or the community and arrange them for the productive use. A part from financing, they also render services like collection of bills and checks, safekeeping of the valuables, financial intermediaries etc. to their customers.

CBs are a cooperation, which accepts demand deposit subject to check and makes short-term loans to business enterprises, regardless of the scope of its other services.

CBs are the heart of the financial system. They make fund available through their lending and investing activities to borrower, individuals, business firms and services for producer to customers and financial activities of the government. Therefore, CBs are those financial institutions, which collects loan against proper securities for their productive purpose.

1.1.3 Development of CBs in Nepal

Banking in Nepal began with the establishment of Nepal Bank Limited in 1994 B.S. before this, Kaushi Toshakhana, set up during the reign of Prithivi Narayan Sha, and Tejarath Adda, set up during the reign of Ranoddip Shah, and used to carry on very limited banking-like activities. These were also moneylenders and merchants partially fulfilling the requirements of the general public. These institutions and people used to lend money to the public at a certain rate of interest. However, they did not collect deposits. Due to lack of deposits Large-scale lending was not possible at the time. Against such a backdrop, the need for banking was acutely felt. As a result banking commenced in Nepal with the establishment of Nepal bank limited Therefore, Nepal Bank limited can be appositely termed the progenitor of banking in Nepal.

Nepal Bank Limited is the first commercial bank in Nepal with 51% government equity and 40% owned by public. It was established under the special Banking act, 1993 having elementary functions of a commercial bank. Because of the non-existence of a central bank in the country, Nepal Bank limited had to act as its own central bank and keep enough resources in hand for meeting emergencies.

Later on, the first central bank was established in 2013 B.S. under Nepal Rastra Bank (NRB) Act, 2012 with an objective of supervising, protecting and directing the functions of commercial banking activities. After that, NRB concentrated its attention towards the development of banking system by formulating relevant policies and procedures. Prior to this, there was no such formal organization to control and regulate the monetary system in the country. It is an autonomous body and fully owned by the government of Nepal, which works for the development of banking system in the country.

As time elapsed, the services of Nepal bank Limited turned out to be inadequate as the banking requirements of the people kept on increasing. To fulfill the growing credit requirement of the country, the commercial bank "Rastriya Banijya Bank(RBB)" was established in 2023 B.S. under RBB act, 2021 with fully government equity that of authorized capital of Rs 10 million and paid up capital of Rs2.5 million.

Until 2040 B.S. there were only two commercial banks. The 2040 B.S. turned out to be crucial in the history of banking in Nepal. The government then introduced "Financial Sector Reforms" in 2037 B.S. which gave permission for the establishment of private and joint venture banks with up to a maximum of 50% equity participation. In the process, NABIL was established in 2041 B.S. when the sixth plan was running in the country.

The financial scenario has changed with the introduction of Joint venture Banks. The number of CBs has been increasing, science then, various financial institutions like Joint Venture Banks, Domestic Commercial banks, Development Banks, Financial Companies, Co-operatives and NGOs with limited banking transactions have come in to existence to cater the financial needs of the country thereby assisting financial development of the country.

After the liberalization of the financial sector, financial sector has made a hallmark progress both in terms of the number of financial institutions and beneficiaries of financial services. Till now, 24 commercial banks have started its operation in Nepal.

1.1.4 Functions of CBs

The principal and primary function of banks is to serve as intermediaries in the making of payments. In so doing they transform inactive money capital into active, that is, into capital yielding a profit; they collect all kinds of money revenues and earn profit by lending it on mainly in business organization, industrial and agricultural sectors and investing in government bonds. Therefore, the main function of commercial bank is to mobilize idle resources in productive areas by collecting it form scattered sources and generating profit.

There are many functions performed by CBs. The following are the main functions performed by the CBs.

1. Accepting Deposits

CBs accept deposits in three form namely, current, saving and fixed deposits.

Current Deposit

Current deposit is also known as demand deposit whereby the banker incurs the obligation of paying money on demand. The bank does not pay any interest on such deposit.

Saving Deposit

It is the deposit that is collected from general savers, small depositors and low-income depositors. The bank usually pays small interest to the depositors against their deposits.

Fixed Deposit

Fixed deposit is the one in which a customer is required to keep a fixed amount with bank for a specified period. It is deposited by those who do not need money for stipulated period. The bank pays higher rate of interest on such deposit.

2. Advancing Loans

Commercial banks mobilize funds by accepting all kinds of deposits and then providing money to those who are in need of it by granting overdrafts; discounting bills of exchange or promissory notes in the form of loans and advances. Direct loans and advances are given to all types of persons against the personal security of the borrowers or against the security of moveable and immoveable properties.

3. Agency Services

A commercial bank provides a range of agency services. It undertakes the payment of subscriptions, premiums, rents etc. It also collects checks, bills, promissory notes, dividends, interests etc. on behalf of its customers, other banks and financial institutions.

4. Credit Creation

It is one of the most important functions of the commercial bank. It accepts deposits and advances loans. When the bank advances loans, it opens an account to draw the money by cheque according to the borrower's need. By granting loan, the bank creates credit or deposit.

5. Other Functions

Besides, above-mentioned major functions, CBs also perform other functions as follows:

Asset in Foreign Trade

By discounting the bills of exchange CBs assists in foreign trade and helps exporters to receive money in the native currency.

Offers Security Brokerage Services

These days most of CBs have begun to marketing of security brokerage services offering customers the opportunity to buy the stocks, bonds and other securities without having to go to a security dealer of broker.

Financial Advising

Many banks offer a wide range of financial advisory services from helping in financial planning and consulting business managers.

1.1.5 Role of CBs

Commercial banks are fundamental to a developed economy, and are unintentional agents of monetary policy. CBs must be able to forecast the effects of government policy on overall economic activity, interest rates, and risk in order to manage their deposits' money.

With the introduction of "Financial Sector Reform" in the year 1980, Nepal allowed the entry of foreign banks as Joint Ventures with up to maximum 50% equity participation. A meaningful step towards financial liberalization was undertaken in the fiscal year 1987/88, with the objective of expanding the process of economic development under structural adjustment program and major reforms including liberalization of interest rate strengthening of banking operation of a shift from direct to indirect to indirect money control instruments.

The establishment of new commercial banks has brought an environment of healthy competition in front of the existing commercial banks. The increased competition forces the existing banks to improve their quality and extend their services by simplifying procedures and by training, motivating their own staff to respond to the new challenges, thus, these banks have contributed towards introducing new technology, new banking systems and efficient service delivery in

the country. These banks have been contributing in line with the trust of economic liberalization and financial sector reform, i.e. making the financial system more competitive, efficient and profitable.

The various roles of commercial banks being performed in Nepal can be classified as below: Healthy Competition, Foreign Investment, New Banking Technique, and Contribution to national economy etc.

1.1.6 Profile of Sample Bank

a. Nepal Arab Bank Limited (NABIL)

NABIL Bank Limited is the first commercial bank established in joint venture investment in Nepal. This bank was established in 2041 B.S. under the commercial Bank Act, 2021 Earlier it was called Nepal Arab Bank Ltd. Dubai Bank Limited was initial foreign Joint Venture Partner with 50% equity investment. The shares owned by Dubai Bank Limited were transferred to Emirates Bank international Limited, Dubai. Later on Emirates Bank international Limited sold its entire stock to National Bank Limited Bangladesh. Hence, 50% of equity shares of NABIL Bank Limited are held by National Bank Limited Bangladesh and out of another 50% shares; Financial institutions has taken 20% and remaining 30% were issued to General Public in Nepal. Authorized capital and paid up capital of NABIL Bank Limited are Rs.500 million and Rs 491.6544 million. The numbers of shareholders of this bank are 5076 with par value of Rs.100 each.

It has all around 410 staffs all over the country. Operations of the bank including day to day operations and risk management are managed by highly qualified and experienced management team. Operations of the bank including day to day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes

ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System, Banglore, India, Internet banking system and Tele banking system. The main slogan of the bank is "YOUR BANK AT YOUR SERVICE". The head office is located in Kamaladi; Kathmandu. NABIL Bank has encouraged foreign investment and joint venture operation with Nepalese investors or in certain circumstances as fully owned subsidiary NABIL Bank has worldwide correspondent network, which enables it to conduct International Trade Business with high level of accuracy and efficiency. NABIL was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, NABIL provides a full range of commercial banking services through its 19 points of representation across the kingdom and over 170 reputed correspondent banks across the globe.

Today NABIL bank is in a unique position in the banking industry in Nepal, as the nation's first joint-venture bank it has an unmatched 22 years of operational experience giving it unparalleled insight into the market, risks, opportunities and customer needs. In conjunction to this, the bank today surges ahead in meeting its mission to be the "Bank of 1st Choice" for all its stakeholders, customers, shareholders, regulators. There are 27 th Branches of NABIL (Until April 2008) another going to be operation very soon.

It is the only bank having its presence at Tribhuwan International Airport. The success of the NABIL Bank Ltd. is a milestone in the banking history of Nepal as it paved the way for the establishment of many commercial banks and financial institutions.

The entire NABIL team embraces a set of values that acronym is referred to as Customer oriented, Result oriented, Innovative, Synergistic and Professional (C.R.I.S.P) representing the fact that we consistently strive to be C.R.I.S.P. By

living these Values, individually as professional and collectively as a team, NABIL bank is committed to surge ahead to be the Bank of 1st Choice in Nepal.

b. Nepal investment bank Limited (NIBL)

NIBL was established at 21 January 1986 as a third Joint venture bank under the company act 2964. Initially the bank was managed by 'Banque Indosuez' Pairs in accordance with Joint venture and technical services. 50% of the shares of Nepal Indosuez Bank Limited held by Credit Agricole Indosuez were sold to the Nepalese promoters on April 25, 2002 as per the transaction record of NEPSE. After this divestment of share by Nepalese owners, the name of the company was changed to NIBL by its 15th annual general meeting held on May 31, 2002. Out of total equity shares of NIBL, 50% shares are held by a Group of companies, 15% by CBs, another 15% by financial institutions and remaining 20% by public. Authorized capital of NIBL is Rs1000 million and issued and paid up capital are Rs. 801.3526 and 801.3526 respectively.

NIBL is one of the leading banks of Nepal. It was established with the vision to be the most preferred provider of financial services in Nepal. It focuses on serving the customers and communities with a belief that success can only be achieved by living our core values and ethical principles. NIBL provides a complete range of commercial banking services with 18 points of representation in different parts of the country the head office of NIBL is Darbar Marg at Kathmandu of Nepal. It also has a widespread reach across the globe with the tie up with various corresponding banks. It has also fully equipped with modern technology which includes ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System Internet banking system and Tele banking system.

c. Standard Chartered Bank Limited (SCBL)

In the history of SCBL, it was formed since 1969 merger between the two overseas banks: the standard Bank of British South Africa and the Chartered Bank of India, Australia, and china. In the initial phases most of the profit made from Hong Kong, Korea and other parts of Asia in its market.

SCBL is a subsidiary of standard charted group. It is the largest international commercial bank of Nepal. It was the joint venture of Standard Chartered Group who has 75% ownership in the company with 25% shares owned by the Nepalese public and operated since 1987 with initial paid up capital 1000 million. Paid up capital and issued capital is 500 and 413.2548 million respectively.

SCBL is in a position to serve its customers through a large domestic network With 15 point of representation and 13 ATMs across the Kingdom and with around 350 local staff. It was firstly lunched and implemented "Anti money laundering policy" and applied the "Know Your Customer" procedure on all the customer accounts.

Standard Chartered Group employs were around 60,000 people in over 500 locations in more than over 100 nationalities in over 50 countries in the Asia Pacific Region, South Asia, the Middle East, Africa, the United Kingdom and the Americas.

SCBL offers a full range of banking products and services in Wholesale and Consumer banking, catering to a wide range of customers encompassing individuals, mid-market local corporate, multinationals, large public sector companies, government corporations, airlines, hotels as well as the do segment comprising of embassies, aid agencies, NGOs and INGOs. There are 10 branches

of SCBL with Head office and It has 13 ATMs located 9 in Kathmandu & Lalitpur, 3 in Pokhara and 1 in Dharan **.**

1.1.7 Risk Management

Risk in a financial analysis is the variability of return. The deviation between the expected and actual return brings variability in the returns and the variability is termed as risk. The higher the deviation between expected and actual return, the higher will be the risk. Risk in other words, is defined as uncertainty of returns and if there is certainty there is no risk at all. Risk and return in investment go together and without risk no more return can be expected. All investor (he/she) think about risk management before invest in any sector.

1.2 Focus of the Study

Diversifiable and Un-diversifiable risk of common stock is the major factors, which help in making decisions about investment on Securities of the any companies. So the study is based on the risk and return of common stock of investment. Special reference to commercial Banks, Which is listed in Nepal Stock Exchange (NEPSE). There is Twenty-three (23rd) CBs in Nepal until 2064 Aswan 31st but only 18st CBs are listed in NEPSE Until 2064 Ashad 31st In Nepal. Therefore, only three CBs are chosen. The Study is focused on the Diversifiable and Un-diversifiable Risk of common stock followed by three Chosen banks, which is representing all the Banks of Nepal.

1.3 Statement of the Problem

The activities of Commercial Bank are depended upon the rules and regulation of central bank i.e. Nepal Rastra Bank. The rules and regulations are changed of yearly which confused investors as well as commercial bank to make their investment strategy in changing environment. The continuous economic Ression from past Nine to Ten years and political instability seriously effect investment

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sector and question is arise among investors how can they get optimum return. Due to small stock market and in sufficient information regarding stock market, one should not get appropriate result from investment. Inconsistence and volatile nature of market is other problem which creates high risk to get little return. To minimize risk appropriate knowledge is required for investors but investors haven't had sufficient knowledge and awareness regarding investment. So this study mainly concerned with Diversifiable or unsystematic and un-diversifiable or systematic or market risk by Nepalese commercial bank. This study Seeks to find out to the following problem are driven out below:

➢ How much level of Diversifiable or unsystematic and un-diversifiable or systematic or market risk of Individual sample bank?
➢ What is the relationship between Diversifiable or unsystematic and un-diversifiable or systematic or market risk of individual sample bank?
➢ What types of effect are facing the commercial bank of Nepal by market risk?

1.4 Objectives of the Study

The main objective of the study is to identity the situation of the diversifiable and un-diversifiable risk of commercial bank of Nepal. The specific objectives of the study as follows:-

➢ To analyze the market risk of CBs of Nepal.
➢ To evaluate the Diversifiable risk of individual sample (NABIL, NIBL, SCBL) bank.
➢ To compare the Diversifiable or unsystematic and Un-diversifiable or systematic risk of selected of CBs.

1.5 Significance of the Study

The study is to point out the Potential diversifiable and un-diversifiable risk of commercial bank in Nepal. The study will be helpful for investors up coming followers as well as commercial bank. It also provides proper guidelines for making choice of common stock, bond and preferred stock etc. on the basis of risk and return. It is also important those people who is interested to know about risk and return. The study will be beneficial for the entire person who is interested to know about capital market in Nepal. It provides the consolidated basic data and information about the NEPSE and CBs under study.

The research work is the study of diversifiable and un-diversifiable risk analysis of CBs of Nepal. This study is significant in following ways:-

- The study is important to policy makers and academic professionals to formulate policies and plans on the basis of the performance of these banks.
- The study helps these banks to compare each other's performance and plans accordingly for future.
- The study is guide to Stakeholders (stockbrokers, to investors, customers (depositors, Loan takes as well as other types of clients), Competitors, personnel of the banks, dealers, market makers etc.) to take various decisions.
- This study is helps these banks to make sound programs and policies based on the recommendation suggested.

1.6 Limitations of the Study

This study has following limitations:-

- The study is mainly depending on secondary data.
- There are total 25th CBs in Nepalese Financial Market But only 18 [th] Banks are listed on NEPSE therefore, this study covers only three banks (NABIL, NIBL, SCBL,) which are listed in NEPSE.
- The study is made within limited timeframe (5th May 2008 to 5st June 2008).

- ➢ The study is cover the data of only six fiscal years from 2001/02 to 2006/07 and the conclusion drawn only to the above Period.
- ➢ This research used only the selective tools for analysis and interpretation of data.

1.7 Organization of the Study

The Whole study has been divided into five chapters as follows:

Chapter I: Introduction

Chapter II: Review of Literature

Chapter III: Research Methodology

Chapter IV: Presentation and Analysis of data

Chapter V: Summary of Findings, Conclusion and Recommendation

The rationale behind this kind of organization is to follow a simple research methodology approach. The contents of each chapter of this study are briefly mentioned below:

Chapter I: Introduction

The first chapter is introduction. This chapter deals with the introduction that includes background of the study , Meaning of the study, Focus of the study, Statement of problem, Objectives of the study, Significance of study, Limitation of the study and organization of the study.

Chapter II: Review of Literature

The Second chapter includes Theoretical Review, Review from Journals, Review from articles and Review from Thesis.

Chapter III: Research Methodology

This chapter explains the research methodology used in study, which includes research design, Population and sample, Source of data, data collection techniques, data analysis Statistical, Financial tools.

Chapter IV: Data Presentation and Analysis

This chapter is the major part of the whole study in which all collected relevant data are analyzed and interpretation by the help of different financial and statistical tools. In this chapter we explain the major finding of the study.

Chapter V: Summary, Conclusion and Recommendations

This chapter is suggestive to all concern in accordance of analysis and interpretation of data. It gives a summary of study, Recommendations are made for concerned authorities and institutions as well as conclusion of the study are also carried out.

CHAPTER - II
REVIEW OF LITERATURE

This chapter deals with the review of literature relating to "Portfolio analysis" in more detail and descriptive manner, which gives theoretical aspects of the study. For this study various books, Journals, articles and Past thesis were also reviewed. Every possible effort has been done to grasp knowledge and information that are available.

2.1 Conceptual Review

2.1.1 Investment

Sharpe (2003) defines investment as sacrifice of current dollar for future dollars. They have attributed the involvement of time and risk during investment. Sacrifice takes place in the present and is certain. The reward comes later, If at all, and the magnitude is generally uncertain, Shrestha et al (2002) write investment as utilization of savings for something that is expected to produce profits benefits, In the words of Cheney and Moses (1992) investment brings forth visions of profit, risk, speculation and wealth. They have briefly described the categories and types of investment alternatives objectives, the expected rate of return, the expected risk, taxes, the investment horizon and investment strategies are the factor to be considered in choosing investment's alternatives.

Sherpe et al (2003) makes the distinction between real investment and financial investment. "Real investments involve some kind of tangible asset, such as land, machinery, or factories. Financial investments involve contracts written on pieces of paper, such as common stocks and bonds".

Investment is a commitment of money and other resources that are expected to generate additional money or resource. Return is the primary motive of investment, but it always entails some degree of risk. Investment generally involves real investment or financial investment. Investment in tangible assets like buildings, automobiles, Machinery and factories is real investment and financial assets like common stocks, bonds and debentures in financial investment. Real assets are generally less liquid than financial assets.

Investment involves long term commitment and waiting for reward (Frank and Reilly, 1972) "An investment may be defined as the current commitment of funds for a period of time to derive a future flow of funds that will compensate the investing unit for the time funds are committed, for the expected rate of inflation and also for the uncertainty involved in the future flow of funds".

(Cheney and Mosses, 1992:6) "The word investment brings fourth vision of profit, risk, speculation and wealth" The above definition is broader, because, Cheney and Mosses have concluded all behaviors consisted of profit, risk, speculation and wealth as investment. According to this, certain profit id gained after some risk bearing with view to maximize wealth and managing speculation of wealth.

Therefore, these definitions quoted above, suggest that an investment regards with the allocation and mobilization of funds for certain coming time- intervals, so as to generate some extra benefit or extra attachment with mobilized funds.

2.1.2 Returns

A major purpose of investment is to get a return or income on the funds invested. On a bond an investor expects to receive interest and on a stock dividend may be anticipated. So return from investment has different meaning to different investors.

Some companies seek near term cash inflows and give less value to more distant returns. Other investors are concerned primary with growth. Still others measure return using financial ratios. They might seek to invest in a company that has a high return on investment.

Investor wants to maximize expected returns subject to their tolerance for risk. Returns are the motivating force and it is the key method available to investors in comparing alternative investments. Realized returns and expected returns are two terms which is often used in the language of investment. Realized return is after the fact return, return that was earned or it is history. Expected return is the return from an asset that investor will earn over some future period. It is a predicted return, which may or may not occur.

Return is reward for investment. Historical returns allow the investor to assess the future or unknown returns, which is also called expected return. Expected returns are the ex-ante returns and such predicted return may or may no occur. (Fisher and Jordan, 2000) have discussed about components of return. They have identified returns is the composition of periodic cash receipts and change in price of assets. Return can be positive or negative. (Cheney and Moses, 1992) explain return is terms of single period. They have defined it as holding period return and calculated by comparing the return to the amount initially invested. (Brealey and Myers, 2000) have written it as summation of the cash also a measurement or return for a single period. (Cheny and Mosses, 2000) Calculation of expected return from arithmetic and geometric mean approach. Geometric mean return is consistent with assumption of reinvesting income when it is received. Due to inherent bias in the arithmetic mean, the geometric mean will always be equal or less than arithmetic mean. The arithmetic mean and geometric mean will only be equal when the holding period returns are constant over the investment horizon. However, (Van Horne and Wachowicz, 2002) have also agreed and have further

defined it is a tool for the return of investment horizon of one year or less. They have suggested for longer periods, it is better to calculate rate of return as an investment yield. The yield calculation is present value based and this considers the time value of money. Further, return for the future can be determined from the probabilities of different phases of the economy, viz, prosperity, recession, depression and recovery. (Weston and Copeland, 1992) illustrated the use of probability from the normal distribution concepts. They have defined expected return as summation of the product of probabilities of different stages in an economy and rate of return.

Sapkota (1999) has calculated the expected return from the average of holding of period return on stocks of eight different banks for each year using data of B.S.2050/51 to B.S.2055/56. He has a identified the common stock of Nepal bank limited to be fetching the maximum of return, i.e.66.99%. He further writes Nepal's State bank of India (SBI) bank as the low yielding security. In addition his study has revealed that the expected return of banking industry is 60.83%. The portfolio across the industries constructed during the study has identified the combination of the securities of Nepal Grindlays Bank and Bishal Bazar Company the best portfolio with the return of 0.2666 (26.66%).He concluded his study by identifying any significant differences in the portfolio return of banking industry and overall market. (Shrestha, 2003) finds the return of the Nepal Bangladesh bank limited (NRB) to be the highest. But Nepal bank limited is out of the purview of this research. (Manandhar, 2003) finds out the Bank of Kathmandu limited (BOK) the high yielding security.

2.1.3 Risk

Risk and uncertainty are real in life. Everyone encounters uncertainty in everyday life. Uncertainty about the weather or about the performance of one's investment or about one's health exists when a decision maker knows all the possible

outcomes of a certain act but for one reason or another cannot assign probabilities to the various outcomes.

Risk, on the other hand exists when the decision maker knows not only the various outcomes but also the probability associated with each one. Risk and uncertainty are an integral part of an investment decision. Risk can be defined as a situation where the possible consequence of the decision that is to be taken is known. 'Uncertainty' is generally defined to apply to situations where the probabilities cannot be estimated. However risk and uncertainty are used interchangeably.

2.1.3.1 Source of Investment Risk (Thapa, Kiran et al 2006:119)

Every investment has uncertainties. Uncertainties make future investment returns risky. The sources of uncertainty that contribute to investment risk are as follows:

2.1.3.1.1 Interest Rate Risk

It is the potential variability of return caused by changes in the market interest rates. If market interest rates rise, then, investments values and market prices will fall and vice versa.

The variability of return that results is interest rate risk. This interest rate risk affects the prices of bonds, stocks etc.

2.1.3.1.2 Purchasing Power Risk

It is the variability of return an investor suffers because of inflation (or a rise in general prices over time) seems to be the normal way of life in most countries today. However, when inflation takes place, financial assets (such as cash, stocks, and bonds) may lose their ability to command the same amount of real goods and services they did in the past. To put another way, the real rate of return on financial assets may not adequately compensate the holder of financial assets for inflation.

2.1.3.1.3 Bull-Bear Market Risk

It is arises from the variability in market returns resulting from alternating bull and bear market forces. When a security index rises fairly consistently from a low point, called a trough, for a period of time, this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next trough is called a bear market.

2.1.3.1.4 Default Risk

It is the portion of an investment's total risk that results from changes in the financial integrity of the investment.

2.1.3.1.5 Liquidity Risk

It is the portion of an asset's total variability of return that results from price discounts given or sales commission paid in order to sell the asset without delay. Perfectly liquid assets are highly marketable and suffer no liquidation costs. Illiquid assets are not readily marketable either price discounts must be incurred by the seller.

2.1.3.1.6 Convertibility Risk

Convertibility Risk is that portion of the total variability of return from a convertible bond or a convertible preferred stock.

2.1.3.1.7 Call-ability Risk

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

2.1.3.1.8 Political Risk

The portion of an asset's total variability of return caused by changes in the political environment for example, a new tax law that affect the asset's market value.

2.1.3.1.9 Industrial Risk

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

In finance risk has a very special meaning. It refers to the uncertainty associated with the returns on a particular investment. A risky investment is thus one whose returns are volatile.

Risk is the feeling of the negative returns. In the wards of Cheney and Moses (1992) is uncertainty of weather the money investors lend will be returned. They have regarded such risk as bankruptcy risk. According to them, stockholder of the firm should not only consider bankruptcy risk but also the risk that the firm will yield a rate of return below some targeted rate. They have given range, variance, standard deviation, Coefficient of variance (CV) and Beta as a parameter for the measurement of risk. However, the variance may have been suggested as a measure of economic risk by Fisher (1906).

Cheney and Moses further describe beta as a parameter for the measurement of the systematic risk. Systematic risk has been defined as un-diversifiable risk, which is beyond the control of the organization.   Apart from this, they describe unsystematic risk as a diversifiable risk, which can be reduced through the portfolio effect. Further, beta values for assets generally range between +0.50and

2.0 Fisher and Jordan (2000), however, write nearly all betas are positive and most beta lie between +0.4 and 1.9 Weston and Copland (1992) write if the return on the individual investment fluctuates by exactly the same degree as the returns on the returns on the returns of the market as a whole, the beta for the security is one. Cheney and Moses further describe that standard deviation contains two parts Diversifiable and Non diversifiable risk. Systematic risk can be diversified away by combining the assets with a portfolio of other assets. Further, they have explained that systematic risk is the ratio between covariance (j, m) and standard deviation of the market. Unsystematic risk has been defined as product of standard deviation of assets and the $(1- P_{jm})$. but Weston and Copeland (1992) has defined that systematic risk is the product of standard deviation is the product of b and var (RM,t) and unsystematic risk Var. Fisher and Jordan (2000) define systematic risk as portion of total variability in return caused economic, political and social changes.

Investment is greater than for the market portfolio, then the beta of the individual investment is greater than one, and its risk adjusted factor is greater than the risk adjusted factor for the market as a whole, The beta for individual security reflects industry characteristics and management policies that determine how returns fluctuate in relation to variations in overall market returns. If the general economic environment is stable, if industry characteristics remain unchanged and management policies have continuity, the measure of beta will be relatively stable when calculated for different time periods. However, if these conditions of stability do not exit, the value of beta will vary.

Weston and Copeland (1992) describe about the three possible attitudes towards risk, a desire for risk, an aversion to risk and indifference to risk. They further described the utility theory where he has made explanations to the diminishing marginal utility for wealth. According to him, someone with a diminishing

marginal utility fir wealth will get more pain from a dollar lost than pleasure from a dollar gained. Most investor (as opposed to people who habitually gamble) appears to have diminishing marginal utility for wealth and this directly affects their attitude towards risk. He has written about the indifference curve describing that each points of the indifference curve shows the combination of mean and standard deviation of returns which give a risk investor the same total utility.

Sharpe (2003) Define risk as the divergence of an actual return from an expected return and identified standard deviation as a measurement of such divergence. Clark's (n.d.) explains standard deviation and variance are equally acceptable and conceptually equivalent qualitative measures of asset's total risk.

Systematic risk is the variability of a security's return with that of the overall stock market. It is also called unavoidable risk. It is measured by beta. The beta of a stock is the slope of the characteristic line between returns for the stock and those for the market beta depicts the sensitivity if the security's excess returns to that of the market portfolio.

Unsystematic risk is the amount of a stock's variance unexplained by overall market movements. It can be diversified away. It derives from the variability of the stock's excess return not associated with movements in the excess return of the market as a whole. Events such as labour strikes management errors, inventions, advertising campaigns, shifts in consumer taste and lawsuits cause unsystematic variability in the value of a market asset. Since, unsystematic changes affect one firm, or at most a few firms, they must be forecast separately for each firm and for each individual incident. Unsystematic security price movements are statistically independent from each other and so they may be averaged to zero when different assets are combined to from a diversified portfolio.

Sapkota (2000) measured systematic risk for beta. He concluded SBI stocks, NRB stocks and Everest Bank Limited (EBL) stocks with negative beta. He has identified the portfolio beta to be 0.5573, calculated from product of individual beta and weights of the market capitalization. This portfolio beta has been used for the hypothesis test regarding the significance difference between the portfolio beta and market beta, which has revealed average beta of the banking portfolio, is equal to 1 at 5%, 2% and 1% level of significance. On the contrary, at 10% level of significance the case is opposite. Pradhan (2002) has analyzed the stocks of six finance companies, six insurance companies including Soltee Hotel and Necon Air in terms of the risk measured through standard deviation, CV and beta. His study has revealed the least CV of Kathmandu finance company and has identified this stock has least volatile. Manandhar (2003) has used the standard deviation, coefficient of Variance and the beta tools for the measurement of the risk associated in the stocks of five different stocks of commercial banks. She has identified the BOK stocks as the most risky stocks with its standard deviation and CV or returns 1.3949 and 1.2380 respectively. Further her research has shown that the BOK possesses the highest value of beta as 2.3020. Shrestha (2003) carried out risk return analysis of the eight commercial banks where he has computed highest standard deviation for the stocks of BOK and least standard deviation of Himalayan bank limited (HBL). A part from this, his study has identified the negative beta for the stocks of SBI.

2.1.4 Investment Portfolio

Investment portfolio of commercial banks is the holding of securities and investment in financial assets i.e. bond, stock, loan and preference shares etc. therefore, commercial banks must invest its deposits and other funds to profitable, secured, stable and marketable sectors. Investment policy helps the bank in efficient investment operation ensuring maximum return with minimum risk. Thus, investment is the most important function of commercial bank. It is the

long-term commitment of bank in the uncertain and risky environment. Therefore, to maximize the profit bank should invest in that type of securities, which are commercial, durable, market stable, transferable and high market price.

"Portfolio is a collection of different types of securities in different sectors". (Western & Brigham: 1982: 245) Portfolio management is related to the efficient portfolio investment in financial assets. Portfolio Analysis considers the determination of future risk and return in holding various blends of individual securities.

According to western & Copeland:1992 "Portfolio theory deals with the selection of optimal 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 or return". It has been developed for the financial assets, including equity shares, preference shares and debentures of companies. Thus making investment from the selected optimal portfolio i.e. the portfolio that provides the highest rate of return with least possible amount of risk is the real investment portfolio.

Portfolio investment refers to an investment that combines several assets. The modern portfolio theory explains the relationship between assets risk and return. The theory is founded on the mechanics of measuring the effect of an asset on risk and return of portfolio. Portfolio investment assumes that the mean and variance of returns are the only two factors that the investor cares. Based on this assumption, we can say that rational investor always prefers the highest possible mean return for a given level of risk or the lowest possible level of risk for a given amount of return. Portfolio, technically known as efficient portfolios, is a superior portfolio. The efficient portfolios is a functions of not only risk and return of individual asset included, but also the effect of relationship among the asset on the sum total of portfolio risk and return. The portfolio return is straight weighted

average of the individual assets. However, the portfolio risk is not the weighted average of the variances of return of individual assets. The portfolio risk is affected by the variance of return as well as the covariance between the return of individual assets included in the portfolio and their respective weights (Pradhan, 1992: 295).

Simply, to minimize risk a bank must diversify its investment in different sectors. If bank invest its fund in different securities, it will be able to reduce risk and maximize the return.

2.1.5 Introduction to Portfolio Analysis

According to Weston and Brigham "A portfolio simply represents the practice among the investment of having their funds in more than one asset. The combination of investment asset is called a portfolio". If investor holds a well–diversified portfolio, then his concern should be the expected return and risk of portfolio rather than individual assets or securities. The portfolio theory provides a normative approach to the investor's decision to investment in assets or securities. "Most financial assets are not held in isolation, rather they are held as parts of portfolios. 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" (Weston & Brigham, 1992:366).

Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities.

Portfolio risk analysis is the process of measuring and assessing our portfolio's exposure to market risk. Financial portfolio offers us three views on risk, allowing

us to compare our portfolio to the market portfolio in terms of Risk- Adjusted return, Value – at – Risk, and Market Risk Exposure.

The portfolio of assets usually offers advantage of reducing risk through diversification. A stock or securities held, as part of a portfolio is less risky than the same stock held in isolation. Thus, portfolio analysis helps to develop a portfolio that has the maximum return at whatever level of risk the investor considers appropriate.

2.1.6 Diversification of Risk

Diversification of portfolio helps to minimize risk. If investors invest their fund in more securities, they can reduce risk and maximize the return. However, even with large number of stocks, investors cannot avoid altogether risk, since virtually all securities are affected by the common macro economic factors.

"Diversification is the one important means that control portfolio risk. Investments are made in a wide variety of assets so that exposure to the risk of any particular security is limited. By placing one's eggs in many baskets, overall portfolio risk actually may be less than the risk of any component security considered in isolation" (Bodie & Marcus, 162).

Elton & Gruber (2001) described the effect of diversification. They write portfolio with 1 to infinity of assets will have decreasing pattern of the expected portfolio variance. They have supported this interpretation through an artificial example and concluded as more and more securities are added, the average variance on portfolio decline until it approaches the average covariance to country. The average covariance relative to the variance vanes from country to country, Thus in Switzerland and Italy securities have relatively high covariance indicating that stocks tend to move together, On the other hand, the security market in Belgium

and in the Netherlands tends to have stocks with relatively low covariance. For these latter security markets, much more of the risk of holding individual securities can be diversified away. Diversification is especially useful in reducing the risk on the portfolio in these markets.

Some different diversification techniques for reducing portfolio's risk are as follows:-

2.1.6.1 Simple Diversification

Simple diversification is the random selection of securities that are to be added to a portfolio. Simple diversification reduces a portfolio's total diversifiable risk to zero and only un-diversifiable risk remains.

Clarkes, defines simple diversification as "not putting all eggs in on basket" or "spreading the risks". (Evans and Archer91968) made sixty different portfolio of each size from randomly selected New Work Stock Exchange (NYSE) stocks and proved the decrease in the un-diversifiable risk with increase in the number of securities in the portfolio. They made the portfolio from the randomly selected securities and allocated equal weights. "Spreading the portfolio's assets randomly over two or three times as many stocks cannot be expected risk any further".

2.1.6.2 Diversification Across Industries

Another diversification can be experienced from the combination of the stocks from different industries. The basic principle of diversifying assets across the industries is the losses incurred in one stock can be compensated through the gain realized from the profitable stocks. Fisher and Lorie (1970) have made an empirical research on random and across industry diversification of portfolio containing 8, 16, 32, and 128 NYSE listed common stocks where they have concluded that diversifying across industries is not better than simple

diversification and increasing the number of different assets held in the portfolio above eight does not significantly reduce the portfolio's risk.

2.1.6.3 Superfluous Diversification

Under simple diversification, maximum risk reduction is attained through inclusion of 10 to 15 assets in the portfolio. If we add, further more assets in the portfolio, such diversification is called superfluous diversification and should be avoided. The investor finds it impossible to manage the assets in his portfolio because the management of a large number of assets requires knowledge of the liquidity of each investment return, tax liability and thus becomes impossible without specialized knowledge. Superfluous diversification will usually result in the following portfolio management problems:

  ➢ Impossibility of good portfolio management
  ➢ Purchase of lackluster performers
  ➢ High search costs
  ➢ High transaction costs.

Although more money is spent to manage a superfluous diversified portfolio there will most likely to be no current improvement in the portfolio's performance. Thus, superfluous diversification may lower the net return to the portfolio's owners after the portfolio's management expenses are deducted.

2.1.6.4 Simple Diversification Across Quality Rating Categories

Diversification of portfolio is also possible across the quality rating assets or securities. Different rating agencies rate different companies and their assets based on possibility of default risk. In this technique, assets are selected randomly from the homogeneous quality rating. The standard deviation of portfolios of different homogeneous quality rating attained different level of risk. The highest quality

portfolio randomly diversified stocks was able to achieve lower levels of risk than the simply diversified portfolios of lower quality stocks. This result reflects the fact that default risk is part of total risk. The highest-quality portfolios contain assets with less default risk. Thus, portfolio managers can reduce portfolio risk to levels lower than those attainable with simple diversification by not diversifying across lower-quality assets.

2.1.6.5 Markowitz Diversification

"Markowitz diversification may be defined as combining assets that are less than perfectly positively correlated in order to reducing portfolio risk with out sacrificing portfolio return" (Weston & Brigham, 1987:194). It is more analytical than simple diversification and considers assets correlation or covariance in portfolio formation. It shows that lower the correlation between assets, the more that the diversification will be to reduce the portfolio risk.

2.1.7 Mean Variance Indifference Curves

Difference curves represent the investor's risk preferences. Through indifferent curves, it is possible for an investor to determine the various combinations of expected returns and risks that provide a constant utility. Joshi (2002) writes that the curves can be drawn on a tow dimensional figure, where the horizontal axis indicates risk as measured by standard deviation (denoted by $_p$) and the vertical axis indicates reward as measured by expected return (denoted by r_P). The sets of mean variance indifference curves are literally a theory of choice. The only assumptions necessary to draw the indifference curves for risk-averse investors are people prefer more wealth to less and they have diminishing marginal utility of wealth. These assumptions, if valid, imply that all decision makers are risk averse and will require higher return to accept greater risk.

Indifference curves cannot intersect." A risk adverse investor will find any portfolio that is lying on an indifference curve that is "father north-west" to be more desirable (that is, to provide greater utility) than any portfolio lying on an indifference curve that is "not as far northwest". Last, he further describes that an investor has an infinite has an infinite number of indifference curves".

Sharpe, Treynor, Mossin and linter originally developed security market line or the capital assets pricing model (CAML) equation. SML shows the picture of market equilibrium. weston and Copeland (1992) explain SML provides a unique relationship between un-diversifiable risk(measured by beta) and expected return. Capital assets pricing model is an equilibrium theory of how to price and measure risk. Logic of the security market line is that the required return on any investment is the risk-free return plus a risk-adjusted factor. They have given the model for the risk adjustment factor as the product of risk premium required for the market return and the riskiness of the individual investment.

Brigham and weston (n.d.) have defined that if the rate of change in the risk free rate and market rate of return is the same, then the slope of the SML remains the constant, and however, the slope of the security market line. Rather they cause parallel shifts in the SML.

It assumes equilibrium where required rate of return is equal to the expected rate of return. Further the model defines disequilibrium condition appears when:
Expected rate of return > required rate of return= Underpriced
Expected rate of return < Required rate of return = Overpriced

2.1.8 Efficient Frontier
Collections of possible portfolios are the attainable sets. Cheny and Moses (1992) defines at any given level of risk or return, however there is no one portfolio that

provides the highest (lowest) level of expected return or risk. This set of portfolio that dominates all other portfolio in the attainable set is referred to as the efficient frontier. They further add once the investor has determined the expected returns and standard deviations for each of the assets and correlation coefficients between the assets, then the portfolios on the efficient frontier can be identified. Estimation of the efficient frontier requires quadratic programming that will simultaneously estimate the portfolio risk at each level of expected return.

Osen (1983) writes when only common stocks are considered as components of portfolio on the efficient frontier, a sample size of several hundred randomly selected securities will provide an estimate of the efficient frontier not significantly different from the frontier obtained by using the entire universe of common stocks.

Elton and Gruber (2001), in this context, write for the convex figure of efficient frontier infinite number of possibilities must be considered.

2.2 Review from International Articles and Journals
International Portfolio Investment Flows by Michael J. Brennan and H. Henry Cao

This article develops a model of international equity portfolio investment flows based on differences in informational endowments between foreign and domestic investors. It is shown that when domestic investors possess a cumulative information advantage over foreign investors about their domestic market, investors tend to purchase foreign assets in periods when the return on foreign assets is high and to sell when the return is low. Following are the conclusion from the articles:

- The article has developed a model of international equity portfolio flows that relies on informational differences between foreign and domestic investors.

- The model predicts that if foreign and domestic investors are differentially informed then portfolio flows between two countries will be a linear function of the contemporaneous returns on all national market indices and if domestic investors have a cumulative information advantage over foreign investors about domestic securities, the co-efficient of the host market return will be positive.

- Portfolio flows are associated with returns on national market indices as the systematic information hypothesis implies.

- The examination of U.S. portfolio investment in emerging markets shows the strong evidence that U.S. purchase are positively associated with local market returns in many countries.

- This model is able to explain only a small proportion of the variance of international equity portfolio flows.

Edward J. Kane and Stephen A. Buser (1979) in their study entitled "*Portfolio Diversification at Commercial Bank*" deal how a firm performs a useful function by holding a portfolio of efficiently priced securities.

According to them, it is rational for a firm to engage in prior round of asset diversification on behalf of its shareholder's even when all assets are priced efficiently and available for direct purchase by shareholders. As a way of testing their perspective empirically, they estimated regression model designed to explain the number of distinct of U.S. treasury and federal agency debt held in a time series of cross sections of large U.S. commercial Banks. They interpret the systematic pattern of diversification observed for large U.S. Commercial Banks as evidence that bank stockholders for a relatively uniform diversification clientele.

For firm, Managerial benefits form diversification takes reductions in the cost equity funds offered by its specific clientele of stockholders. To maximize the value of the firm, these benefits must be weighted against the explicit managerial cost of diversification.

Buser drowns following concluding remarks (Kane & Buser, 1979:19):
- Even wealthy investors should be sensitive to administrative costs associated with selection, evaluation, managing and continually keeping track of a large number of securities.
- Either homemade of firm produced diversification, reduces the variance of shareholder's portfolio return. IF homemade diversification bears in coordinately high levels of information risk, some benefits of form produced diversification might not be reproducible by individual investor acting on their own.
- Investor with even modest resources, the stock of financial institutions should be relatively less attractive than the stock of that avoid extensive diversification costs by engaging in specialized activities.

Paul D. Berger and Zvi Bodie (1979) has presented and proved three proportions regarding "Portfolio selection in a winner-take-all environment". The three propositions discussed by them are as follows (Berger & Bodie: 1979:233):

Proposition I: - Any investor seeking to maximize the expected utility of his wealth will select a portfolio, which maximizes the expected utility of his wealth. He will select a portfolio, which maximizes the probability of his winning the contest i.e. of yielding the highest return. This shows regardless of the investor's attribute toward risk.

Proportion II: - If no short or buying on margin is allowed, then the probability of a portfolio of two or more securities beating every single security in the portfolio is Zero.

Proportion III: - If there are more than two securities to choose, one cannot select the optimal security. Therefore, comparison will be the best among the respective series of pair.

According to them, the single most important behavioral implication of the propositions above is, that an individual engaged in a winner-take-all investment contests would tend not to diversify his portfolio, even if he is risk adverse. It is a conjecture that is very highly positively correlated so as approximates a single stock as closely as possible.

The journal of *finance published bimonthly* by American Finance Association for many decide is taken out into account. In its recent volume of august 1999, an article "*local Return Factors and Turnover in Emerging stock market*" by K. Greet Rouwenhorst has been received here. There is growing empirical that multiple factors are cross sectional correlated with average return in the United States. Measured over long time, small stock earns higher average return than large stock (bank 1981). It showed that value of stock with high book-to-market earning to price (E/P), on cash flow to price(C/P) out performed growth stock with low B/M,E/P or C/P. more over stock, with high return over the past 3 month to one year continue to out performed stocks with work poor prior performance. The evidence that beta is also compensated for in average return is weaker.

The interpretation of the evidence is strongly debated. Some believe that premiums are compensation pervasive risk factors. Other attributes them to form characteristics of insufficiency in the way market incorporated information into

prices. Yet other averages that survivorship or data snooping may bias the premiums. The paper examines the source of return variation in emerging stock markets. From the perspective of collecting independents samples, emerging market countries are particularly interesting because of their relative isolations from the capital market of other countries. Compared to developed markets as historically been low (Harvey, 1995) and until recently many emerging countries restricted investment by foreign investors. Interestingly, Bekaert and Harvey (1995) find that despite the recent trend toward abolition of these restriction and substantial inflows of foreign capital. Some emerging equity markets have actually become more segmented from world capital markets. A large portion of the equity capital of emerging economics is held by local investors who are likely to evaluate their portfolios in the light of local economic and market condition.

On the above background Rouwenhorst attempts to answer two sets of questions. The first set of three questions concerns the existence of expected return premiums.

➢ Do the factors that explain expected return difference in developed equity market also describe the cross section of expected return of emerging firm?

➢ Are the return factors in emerging markets primarily local or having global components as well?

➢ How does the emerging market evidence contribute to the international evidence from developed markets that similar return factors are present markets around the world?

➢ The second sets of question of the paper include

➢ Is there a cross sectional relationship between liquidity and average returns in emerging markets?

➢ Are the return factors in emerging markets cross sectional correlated with liquidity?

About the data Rouwenhorst stated that as of April, 1997 the emerging market. Database (EMDB) of the IFC contains data more in the sample. Eleven countries are excluded because of insufficient return histories, which leave 1705 firms in 20 countries that the IFC tracks for at least seven years.

For some month closing process and dividends is available dating black to 1975. Staring at various points during 1980s the IFC expand its reporting to include monthly time series for price-bond ratios, price-earning ratios, market capitalization trading volume and the number of days per month that a stock is traded total returns as calculated as the sum of the divided returns and price appreciation, using prices scaled by a capital adjustment factor which the IFC computes to correct for the price effects associated with stock split stock dividend and right uses. Many emerging markets have firms with multiple classes of shares carrying different ownership restriction. Forms with multiple shares classes are treated as single value weighted portfolio of the outstanding equity securities.

The first conclusion is that the return factors in emerging markets are qualitatively similar to those in developed market small stock outperform growth stocks and emerging markets stock exhibit momentum. There is no evidence that the local markets betas are associated with the average returns. The low correlation between the country return factors suggests that the premiums have a strong local character. Furthermore global exposures cannot explain the average factor returns of emerging markets. There is little evidence that the correlation between the local portfolios have increased which suggests that the factor responsible for the increase of emerging market country correlation and separate from those that drive the difference between expected returns within these markets. A Bayesian analysis of premiums in developed and emerging markets show that unless one has strong prior beliefs to the country the empirical evidence favor the hypothesis that size momentum and value strategies are compensated for in expected returns and share

turnover and examines the turnover characteristics of the local returns factor portfolios. There is no evidence of a ration between expected returns and turnover in emerging markets however beta size momentum and value is positively in emerging markets. This suggests that the return premiums do not simply reflect a compensation for liquidity. This study by Rowe horst does not consider the analyzed the returns factors in worldwide stock markets. However, it concentrates in the various emerging stock markets. Hence the article contributes in the articles contributes in the area of risk and return analysis in common stock investment.

2.3 Review of Nepalese Articles & Journals

Chandra Thapa (2003) in his articles entitled "Managing banking Risks" presented different types of risks generally faced by commercial banks and accomplished the subsequent issues. Banking and financial services are among the fastest growing industries in the developed world and are also emerging as corner stones for other developing and underdeveloped nations as well.

According to Thapa, the primary function of a bank is to trade risk. Risk cannot be avoided by the bank but can only be managed. There exist different types of risks. Among them interest rate risk is one of the most common risk the banks face owing to the volatility of the interest rate in the market.

Another risk banks face commonly is the trading risk or market risk; Banks has to productively manage their excess liquidity by investing in various securities, in foreign currencies and in other assets for instance swaps option etc.

Credit risk is one of the most significant risks, which the banks face particularly in underdeveloped country like Nepal because our financial system is mostly depended on banks. Hence, it is crucial that the bankers should manage such risks prudently since it not only hampers the particular banks in concern but also badly

affects the growth prospects of the entire economy. Credit risks are of two types: diversifiable risk and un-diversifiable risk.

Off balance risk owing to the creation of contingent liabilities, should be managed by a prudent analysis of the bank officials materializing such contingent contacts. Similarly, technological changes are frequently faced by banks. Therefore, for the smooth operation banks should adopt technological up-gradation from time to time.

Maintaining proper liquidity is the most difficult problem as the demand of cash is uncertain. To avoid such risk, the central bank has initiated the regulation, whereby the banks need to maintain reserve in their vault and a certain specified percentage of the total deposit with central bank.

He concludes with that risk management of the banks is not only crucial for optimum trade off between risk and profitability but is also one of the deciding factors for the overall business investment leading to growth of the economy. Managing such risks not only needs sheer professionalism at the organizational level but an appropriate environment also needs to be developed. Some of the major environmental problems of Nepalese banking sector is undue government intervention(in state-owned banks), relatively weak regulatory frame, although significant improvement has been made in the last five year but still not competitive enough when we consider the international standard, meager corporate governance and the biggest of all is lack of professionalism (especially commitment). The only solution to mitigate the banking risk is to develop the badly needed commitment, eradication of corrupt environment, especially in disbursement of lending, and to formulate prudent and conductive regulatory framework.

Yogendra Timilshina (2002) has published an article on "managing investment Portfolio". He is however, confronted with the problems of managing investment portfolio particularly in times of economic slowdown like ours. A rational investor would like to diversify his investment in different classes of assets to minimize risks and earn a reasonable rate of return.

CBs have continuously been reducing interest rates on deposits. Many depositors are exposed to the increasing risk of non-refund of their deposits because of the mismanagement in some of the banks and financial institutions and accumulation of huge non-performing assets with them.

Few depositors of cooperative societies lost their deposits because some these cooperatives were closed down because of their inability to refund public deposits. An investor in days of crisis has to make an effort to minimize the risk and at least earn a reasonable rate of return on his aggregate investment.

An investment in equity share can earn dividend income as well as capital gain in the form of bonus share and right share until an investor holds it and capital profit when he sells it in the stock market. As returns from equity investments have fluctuated within a very wide range, investors feel it much difficult to balance risk and reward in their equity portfolio. In fact, investors in equity shares should invest for a reasonable long period in order to manage the risk.

Making investment in fixed deposits with commercial banks is a normal practice among the common people. Normally fixed deposits with banks are considered risk-less, but they also are not hundred percent free of risk. You should select a bank to put your deposit therein, which has sound financial health and high credibility in banking business. In times of crisis if you select a sick bank to

deposit, your money there is high probability that your money could not be returned back.

An investor may have option of making investment in Government bonds or debentures. In history, we have examples that a government can nationalize the private property of its citizens, cancel out old currency notes, and can convert the new investment into some conditional instrument. However, in democracy there is no probability that the government would default to repay money back. This is comparatively risk free investment, but yields low return.

An investor has to evaluate the risk and return of each of the investment alternatives and select an alternative, which has lower degree of risk and offer at least reasonable rate of return. One can draw a safe side conclusion to invest all the money he has only in government securities, but this is not a rational decision. An investor who does not try to maximize return by minimizing the possible risk is not a rational investor. On the other hand, one can place over-confidence on equity investment and assume high risk by investing the whole money in equity shares. Stock market these days in much dwindling and notoriously unpredictable; therefore, this too is not a wise decision. Therefore, a portfolio, which consists of only one class of financial assets, is not a good portfolio.

Shiba Raj Shrestha (1998) has given a short glimpse on the "Portfolio Management in Commercial bank, Theory and Practice". He emphasized on importance of portfolio management for both individual as well as institutional investors. According to him, investors would like to select a best mix of investment assets subject to following aspects:-
  ➢ Higher return which is comparable with alternative opportunities available according to the risk class of investor.

- ➢ Good liquidity with adequate safety of investment, Certain capital gains, Maximum tax concession, Flexible investment, Economic, efficient and effective investment mix.

According to Shrestha, the above considerations are very useful for an effective investment decision. Similarly, for successful investments, he has concluded some strategies as follows:

- ➢ Do not hold single security. Do not rely on single investment alternative i.e. try to have a portfolio of different securities.
- ➢ Have a diversified investment i.e. make investment in different sectors.
- ➢ Always select such a portfolio of securities, which ensures maximum return with minimum risk with assed objective of wealth maximization.

Similarly, the approaches to be adopted for designing a good portfolio and its management, pointed by Shrestha are:

- ➢ Find the investible assets having scope for better returns depending upon individual characteristics like age, health, need, and disposition Liquidity etc.
- ➢ Analyze the attitude of investment towards risk.
- ➢ Develop alternative investment strategies foe selecting a better portfolio, which will ensure a trade off between risk and return to attach the primary objectives of wealth maximization at lower risk.
- ➢ Identify the securities for investment and risk from the investment.

He has mentioned short transitory view on portfolio management in Nepalese Commercial banks. He pointed that the portfolio management activities of Nepalese Commercial banks at present are in growing stage. However, on the other hand most of the banks are not doing such activities so far because of following reasons:

- ➢ Unawareness of the clients about the service available

- ➢ Hesitation of taking risk by the clients to use such facility
- ➢ Lack of proper techniques to run such activity in the best and successful manner
- ➢ Less developed capital market and availability of few financial instruments in the financial market.

Because of above mentioned problems the commercial Banks have very limited opportunity for exercising the portfolio management. Even considering the attraction of deposits joint venture banks are facing problems since most investors have not developed full confidence of putting money in fixed time deposit certificate of various maturing and sizes.

He has drawn following conclusion for smooth running and operation of banks and financial institutions:

- ➢ The survival of the banks depends upon its own financial health and various activities.
- ➢ In order to develop and expand the portfolio management activities successfully the investment management methodology of a portfolio manager should reflect high standards and give their clients the benefits of global strengths and product philosophy.
- ➢ With the discipline and systematic approval to the selection of appropriate countries, financial assets and the management of various risks, the portfolio manager could enhance the opportunity for each investor (client) to earn superior returns over times.
- ➢ The Nepalese Banks having greater network and access to national and international capital markets have to go for portfolio management activities for the increment of their fee based income as well as to enrich the client base and to contribute in national economy.

Shanker Bahadur Pradhan (1996) has presented a short glimpse on investment in different sectors and its problems and prospects through his article "Deposit Mobilization: Its problem and Prospects".

He quoted that deposit is the life-blood of any financial institution, be it commercial bank, finance company, co-operative or non-government organization. He further adds in consideration of most of banks and finance company, the latest figure does produce a strong feeling that a serious review joint venture banks, other organizations rely heavily on the business deposit and credit disbursement. Pradhan has pointed out some problems for the prosperity of deposit mobilization in Nepalese context, they are:-

➢ Most of the Nepalese people do not save in institutional manner due to the lack of good knowledge. However, they are very much used of saving; be it in the form of cash of ornaments. Their reluctance to deal with institutional system is governed by the lower level of understanding about financial organization process, withdrawal system and availability of deposit facilities and so on.

➢ Unavailability of the institutional servicer in rural areas.

➢ Due to lesser office hours of banking system people prefer holding the cash in the personal possession.

➢ No more mobilization and improvement of the employment of deposits and the loan sectors.

Pradhan has also recommended for the prosperity of deposit mobilization, which are as follows:

➢ By providing sufficient institutional services in the rural areas

➢ By adding service hours system to bank

➢ NRB could also organize program to develop skilled manpower.

➢ By spreading co-operatives to the rural areas to develop mini branch services.

Sunita Shrestha (1995) in her study "Portfolio Behaviour of Commercial banks in Nepal" has made remarkable efforts to examine various portfolio behavior of commercial bank in Nepal such as investment portfolio, liability portfolio, assets portfolio etc. according to her, investment of commercial banks when analyzed individually, were observed that Nepalese domestic banks invest in government securities, national saving bond, debentures and company's shares. Based on this study she found that the supply of bank credit was expected to depend on total deposit, lending rate, bank rate, lagged variables and dummy variables. Similarly, demand of bank credit was assumed to be affected by national income, lending rate, Treasury bill rate and other variables. The resources of commercial banks were expected to be relating with variables like total deposit, cash reserve requirement, bank rate and lending rate. Following are conclusions based on her finding:

➢ The relationship of banks portfolio variable as found to be best explained by log-linear equations.

➢ Demand of deposit for commercial banks in Nepal is positively affected by the GDP from non-agriculture and the deposit rate and lending rate of interest.

➢ The investment of commercial banks on Government securities has been observed to be affected by total deposit: cash reserve requirements, Treasury bill rates and lending rates.

➢ The investment of commercial banks in shares and securities are normal and not fund to have strategic decisions towards investment in shares and securities.

➢ The loan loss ration has been found to increase with low recovery of loan.

2.4 Reviews from Thesis

Several thesis works have been conducted by various students regarding the various aspects of commercial banks such as financial performance, leading policy, interest rate structure, resources mobilization, Capital structure etc.

However some relevant thesis works have been reviewed here, they are presented below.

Bhandary Deepak Raj (1998) on thesis entitled, "A study on impact of interest rate structure on investment portfolio of CBs of Nepal". The main objected of his study is to see the impact of interest rate on investment portfolio of CBs by analyzing their deposit, loan and advances, interest spread investment and bills purchased and discounted. He has concluded that the Deposit rates and lending rates of the CBs have been changing time to time. It is found that deposit rate and lending rates increased slightly immediately after liberalization of interest rate on August 31, 1998, after that rates started to decline. CBs investment in government securities dramatically increased which is due to lack of proper CBs invest a small part of their resources in non fund based areas such as purchase and discounts of bills. His recommendation was to attract more deposits CBs offer more incentive and government and NRB should not force the CBs to invest more in government and other low yield securities.

The main study objective of this study is "To analyze the risk and return of the common stock of commercial banks" Sapkota Jeet Bahadur (2000) found that banking industry is the biggest one in terms of market capitalization and turnover. Expected return on common stock of Nepal Ltd is found minimum. In this regard, common stock of SBI Bank Ltd is less risky. In the context of industries expected return of finance and insurance industry is found biggest. Expected return of the banking industry is 60.83% Mr. Sapkota also finds that the portfolio standard

deviation is less than each individual stock's standard deviation. Hence the portfolio approach of investment is better way to win stock market.

Prem Bahadur Shahi (1999) has conducted the research on the topic "Investment Policy of Commercial Banks in Nepal" in the year 1999. The main objective of the study was to compare the investment pattern of Joint Venture Banks. He has mainly compared the investment process of Nepal Bank Limited, a semi-government bank with more than 221 branches all over the country and other Joint Venture banks concentrated in urban areas.

He found that Nepal Bank Limited is affected by many Government interferences but Joint Venture Banks are operating efficiently with good investment policy. The growth rates of Joint Venture Bank are relatively more than that of Nepal Bank Limited but the profitability position of both are some.

He concluded that Commercial Banks must mobilize the funds in those sectors yielding optimal returns like purchases of shares, debentures of various institutions. The Joint Venture Banks have to venture in new sectors of investment with low level of risks. For the recovery of loans, the loan Recovery Act should be efficiently implemented as soon as possible. Therefore, his study is basically focused on the investment policy of the commercial banks of Nepal and not concerned about any factors like risk, return etc.

Pandey (Sijapati) Pramina (2000) has conducted a research entitled "Risk and Return Analysis of Common Stock Investment" which is some how related with this study. The main objective of her study is to analyze the risk, return and other relevant variables that help in making decisions about stock and investment in Insurance Companies. The other objectives of her study are to understand and identify the problems faced by individual investor and insurance companies; to

calculate risk and return of common stocks and their companies and other relevant variables that should be considered while deciding investment in stocks.

Her analysis based on Market Capitalization, found that size of Nepal Insurance Company (NIC) is the biggest one. Expected return on the common stock of National Life and General Insurance Company Limited (NLIG) is maximum i.e 65.39%. Expected return on common stock of Himalayan General Insurance Company Limited (HGI) is lowest with negative value. In overall industrial sector, expected return of Finance and Insurance sector is highest. Overall market expected return is over 50%. NLGI's expected return is highest which ultimate the standard deviation (risk) to be the highest and Everest Insurance Company's risk and return is the lowest one. The stock of NLGI is highly sensitive with market due to its greater degree of beta coefficient. In addition, stock of United Insurance Company (UIC) moves opposite with market because of its negative beta coefficient. She also found no significance difference between the portfolio return of insurance Companies stock and overall market portfolio.

She concluded that poor education and lack of adequate source of information are the major constraints for the development of stock market in Nepal. When risk and return of different industries are compared, the Finance companies and Insurance Companies are the best because they have highest expected return with higher degree of risk. However, most of trading industries have minimum return and maximum level of risk. Market sensitivity is measured by beta coefficient, which cannot be reduced by diversification. Due to the lack of specific knowledge of stock market general public invest their funds in different securities on the basis of expectation and assumption rather than analysis. The proper selection of portfolio approach is better way to get success in stock market.

Basnet, Jagdish (2000) in his Master Degree thesis entitled "Portfolio Management of Joint Venture Banks in Nepal" has made an effort to identify the situation of portfolio management of Joint Venture Banks in Nepal. The specific objectives of his research are: to analyze the risk and return ration of Commercial banks; to evaluate the financial performance of Joint Venture Banks; to survey the existing situation of portfolio management and finally to provide the suggestive package based on the analysis of the data.

His analysis shows that the mean investment to total deposits ratio of Nepal Bangladesh Bank Limited is Lowest i.e.12.87% where as Everest Bank Limited has highest i.e.(29.36%)among four Joint Venture Banks. The mean liquidity fund balance to total deposits ratio shows standard chartered Bank Nepal Limited has good liquidity position among selected banks. The major finding of his study shows that the ratios of Everest Bank Limited are more consistent among four Joint Venture Banks. However, Everest Bank Limited is investing very high amount of fund on government securities. It also has the highest risky asset in comparison to the four banks.

He concluded that while allocating funds of Joint Venture Banks into different components of banking assets having different degree of risk and varied rate of return should be verified in such a way that would maximize return and minimize risk. So portfolio condition of Joint Venture Banks should carefully be examined from time as far as possible. From his study, he found that those banks got better result that managed the portfolio properly.

Poudel Keshor (2000) conducted a research on the topic "Liquidity and Investment Position of Joint Venture Commercial Banks in Nepal". The basic objective of his study was to evaluate liquidity and investment position of Joint Venture Banks with special reference to Everest Bank Limited (EBL) and NABIL

Bank Limited. The secondary objectives of his study were to assess the factors affecting customers' withdrawal and to examine invest-liquidity policy of both banks.

He found that liquidity position of EBL is comparatively better than that of NABIL. Nevertheless, EBL has not been successful for mobilization of funds on investment in comparison with NABIL. Growth rate of investment of EBL has been recorded significantly higher than NABIL's however, significant difference in mobilization has not been found. Likewise, growth rate Liquid funds of EBL are significantly high while it is negative in case of NABLI. It means NABIL has given priority to profitability than liquidity. It has utilized funds to investment instead of holding liquid assets. Cash flow from operating activities of NABIL is sound as its profitability is higher than EBL's. He further found that the banks do not have constant and consistent liquidity and investment policy. There is no standard and uniform rate or ratio for maintaining liquid assets by the commercial banks. A commercial bank at its own judgment may decide to maintain an appropriate level of liquid assets.

Shrestha, Prakash (2003) conducted a research entitled "Portfolio Analysis on investment of Nepalese Commercial banks" by using 8 years data from FY 1994/95 to 2001/02. The main objective of his study was to analyze, examine and interpret portfolio technique followed by commercial banks on their investment in various sectors. The other specific objectives are: to evaluate comparative financial performance of selected commercial Banks in terms of investment strategies; to analyze the way commercial banks manage their risk and return on investment in different sectors.

He found that almost commercial banks wanted to invest in short-term basis in which return is not fixed. They hesitate to invest in long-term government

securities that provide regular constant return. The total investment to total deposit ratio of selected commercial banks shown that standard chartered bank Nepal limited (SCBNL) is the most successful in utilizing its resources on investment than other commercial Banks. Similarly, on the basis of return on total assets, SCBNL utilized its overall resources efficiently than other banks. To some extent, all commercial Banks seem to be interested in using their deposits in purchasing government securities, even there is less return. The risk and return on share and debentures are higher than other assets. The Annual rate of return on shares and debentures of CBs show wide fluctuations ranging from -23.78% to 104.50%. These fluctuations in returns are caused mainly by the volatility of capital yield.

He concluded based on the analysis and the findings of his study that commercial banks are not seemed to be capable of investing their funds in more profitable sectors. Most of the commercial banks are interested to invest their fund in more liquid and less risky sectors. Commercial banks are fund unable to apply scientific approach for investment diversification and portfolio management.

Bhatta, Dipesh (2003) has conducted a research work on the topic, "portfolio Management of Listed Finance Companies in Nepal". The main objective the study was to identify the present situation of portfolio management of finance companies in Nepal with the help of risk, return and other relevant variables. The other specific objectives of his study are to compare the risk and return of common stocks and their portfolio: to study the volatility of different stocks of finance companies and to recommend few key practical implications based on the analysis of the data.

Using capital Market Line, he found united Finance and Capital Market Limited (UFCML) has the highest expected portfolio return (11.27%) and risk (32.97%) but People Finance Limited (PFL) has the lowest expected portfolio return

(5.43%) and risk (6.20%). Similarly, National Finance Company Limited (NFCL) has the great performance but Peoples Finance Limited Has lower performance. NFCL stock is highly correlated (0.971) with market than that of other finance companies. In most of cases coefficient of determinants of all these finance companies have greater than 0.50 (50%) means portion of systematic risk is higher than the unsystematic portion. It is also found that generally the portfolio management of listed finance companies in Nepal is not systematic organized. In the context of portfolio risk and return of finance companies, investors have to bear higher portfolio risk to increase little bit of portfolio return.

He concluded that the volatility of different securities in Nepalese capital market was the major problem to manage the portfolio. Since Nepalese stock market is in developing stage, the fundamental analysis is more effective for the selection of portfolio then the technical analysis.. He further added, 'To achieve better result, passive strategy is more suitable than the active strategy in Nepalese stock Market". Due to the lack of specific knowledge of portfolio selection, majority of corporate investors' selection conventional stock bond mix.

Sharma, Durgamani (2004) conducted a study on "Portfolio Management of listed commercial banks and insurance companies in Nepal" in the years 2004 is also related with the study. The main objective of his study was to analyze the risk and return of the common stock of commercial banks and Insurance companies. He has also analyzed the diversifiable and undiversifiable risk of common stock as well as portfolio return and risk.

Based on risk and return, he found that the shares of all the commercial banks are attractive for investment compared to Insurance Companies. The conflicting political and economic scenario has the adverse impact on economic activities of the companies. Therefore, Insurance Companies are unable to effectively mange

its portfolio. The researcher realized that the risk per unit of return of market is very high. So the overall market return can be regarded as attractive with respect to its risk. He also concluded that the unsystematic risk of all the companies was high in comparison to total risk.

Poudel, Parsuram Prasad (2005), in his research entitled "A Comparative study on Investment Behavior Adopted by NABIL bank Limited and Himalayan Bank Limited(HBL)" has a main objective to comparatively analyze, examine, interpret and evaluate the total investment behavior of NABIL and HBL Bank. The study is mainly concentrated on whether both banks have been successfully operating their collected funds as investment in various sectors, various alternatives or not. The specific objectives of his study are to comparatively present the investment behavior of sample banks; to examine and interpret Strength, weaknesses, opportunity and Threats (SWOT) of both banks and to suggest for best performance in future based on finding.

He found that investment on share and debenture by both banks are lower in comparison with other alternatives. Similarly, both of the banks concentrated to invest on loan and advances and purchase of bills. Comparatively, the investment policy of NABIL seems to be aggressive than that of Himalayan Bank. Both of the banks have kept unnecessary cash and bank balance in comparison with total investment, which they can invest in other productive alternatives. Based on current ratio analysis, HBL is in safe side. Because, NABIL has kept more liquidity. Comparatively, NABIL needs to increase deposit. Average total deposit position of NABIL is lower than Himalayan Bank Limited.

He concluded that investment aspects of both banks are satisfactory. As the established banks in Nepal, both should increase their investment in shares and debentures to motivate other firms too. Although there was more investment made

by HBL there is no growth in net profit. Because of effective management of investment made by NABIL bank, its investment seems to be highly yielding as compared to HBL.

Shrestha, Natasha (2005) in her research entitled "Portfolio Analysis on Common Stock of Commercial Banks (CBs) in Nepal" is related to this study. The main objective of the study was to find out the level of portfolio risk and return on investment of common stock of CBs. The other objectives were to find out the trend of NEPSE index, to analyze the risk and return of common stock of reviewed banks and to find out the best portfolio from NEPSE. The study was focused on portfolio analysis of four CBs.

She found that the expected return of HBL stock is highest i.e. 53.68% and NABIL is Lowest i.e. 32.72% among the banks. The risks of NBBL is highest i.e. 93% and SCBNL has a lowest risk i.e. 55.42%. The correlation of stock, return and market shows that all of the banks stocks are highly positive correlated with the market. The correlation values of common stock of all bank with the market is nearly equal to +1. The stock price of all four listed Commercial Banks was higher than NEPSE average price of stock. Similarly, the stock prices of four CBs were in fluctuating trend than NEPSE index.

She concluded that investment on common stock is a risky job. It does not guarantee both and principal. So, investor should be acquainted with associated risk and workout their attitude towards the risk ness of various investment strategies.

2.5 Research Gap

Very few research works has been conducted in this topic. No specific research has yet been able to go in-depth of the topic and successfully accomplished the specific objectives of the research work. All of the previous research on portfolio management has been based on only showing the risk and return analysis of the stocks of CBs. Previous research studies focused mainly on common stock investment of CBS but none of the researchers has concentrated on this topic depthly. In this research only concerned on diversifiable and un-diversifiable risk of CBs (NABIL, NIB and SCBNL) for fiscal years 2001/02 to 2006/07. All previous researchers have identified the risk but they have not focused on this topic.

CHAPTER - III
RESEARCH METHODOLOGY

A research is systematic and in-depth study or search of any particular topic by formulating hypothesis, collecting information, analyzing and interpreting them through the valid results. It is also called a creative investigation to search new insight to the phenomena.

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with logic behind them.

Research methodology is the way in which the data are collected for the research project. It refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. It describes the methods and process applied in the entries subject of the study. It is the way to systematically solve the research problem (Kothari, 1990:39).

This chapter has been divided in to five sections. First section presents the research design of the study while the second section deals with the nature of population and samples. Third section consists of the nature and sources of data and four sections explain data collection and processing techniques. The final section deals with data analysis tools.

3.1 Research Design

Research Design is a plan, structure and strategy of investigations conceived so as to obtain answers to research questions and to control variances (Wolf, 1975:510). It is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Considering the objectives of the study, the analysis is based on certain research design. In order to achieve objectives, descriptive and analytical research design has been adopted. Descriptive research design describes the general pattern of the investors, business environment, problem of portfolio management etc. The analytical research design makes analysis of the information and data. Most of the data and information of the study were concerned with past phenomenon. So it can be regarded as historical research.

It covers the data from the fiscal year 2001/02 to 2006/07. It deals with the study of portfolio analysis of commercial banks in Nepal. As the title of the study suggests it is more analytical and empirical and less descriptive.

3.2 Sources of Data

This study is mainly based on secondary data. The various required data for the study are collected from concerned banks, Nepal Rastra Bank, NEPSE, SEBO/N and different libraries. Similarly, the required micro-level data received from annual reports of selected banks and websites of banks as well as NEPSE. In addition to above, supplementary data and information was collected from different library such as library of Shanker Dev Campus, Nepal Commerce Campus, T.U. Central Library, Library of NRB, NEPSE, SEBO/N etc. Likewise, various data and information were collected from the periodical economic journals and from other published and unpublished reports. Similarly, information enquires and dialogue with authorities of related institutions is also other sources of data.

The major sources of data and information are as follows:

- Economic survey, Ministry of Finance
- Quarterly Economic Bulletin, NRB
- Macro Economic Indicators of Nepal, NRB
- Annual reports SEBO/N
- Journal of Finance
- Journal of Business
- Website if NEPSE
- Website if different Commercial Banks

3.3 Population and Sample

The population of the study is all the commercial banks listed in NEPSE. Until now total numbers of commercial banks listed in NEPSE are 18. Hence, these 18 commercial banks are the population of the study. For this study, only three commercial banks are taken as sample. The samples are selected by lottery method. The selected sample banks for the analysis are as follows: NBIL NIBL and SCBNL.

3.4 Data Collection Procedure

Most of the data used in the research are secondary data. Annual reports of commercial banks, annual reports of NEPSE, trading report of NEPSE and Periodicals of NRB are used as secondary data.

3.5 Data Analysis Tools

In order to ascertain investment analysis of any firm, various analytical tools can be used. According to the nature of statement of data, suitable to appropriate tools make the analysis more effective and significant for achieving objective. Financial and statistical tools used in this study.

3.5.1 Analysis Tools

In order to analyze various data, different analysis tools have been used they are as follows:-

3.5.1.1 Market Price of Stock (MPS)

There are mainly three types of MPS available in NEPSE annual report. They are high MPS, low MPS and closing MPS. Closing Price is not an average prices of high and low MPS but rather it is calculated by considering the whole years MPS for the closing MPS trading report is followed.

3.5.1.2 Market Returns

Market return is independent variable of characteristic line. In the context of Nepalese Financial market, average return or market return can be found by using NEPSE index. Market return can be calculated as follows;

$$R_{mt} = \frac{NEPSE_{t\text{-}1} - NEPSE_t}{EEPSE_t} \times 100$$

Where,

R_{mt} = market return

$NEPSE_t$ = NEPSE index at the beginning of period t

$NEPSE_{t+1}$ = NEPSE index at the Ending of period t

3.5.1.3 Return on Common Stock Investment(R)

The return on shares and Debentures considers dividend yield and capital gain yield i.e. change in market price. The dividend yield is only a partial indication of the return; hence, the return on Shares and debenture significantly depends on the

change in its Share price (Pandy, 1997:332). The formula for calculating the return on shares and Debentures is as follow:

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

Where,

R = Actual realized return on common stock at time t.

D_t = Cash dividend received at time t.

P_t = Price of a stock at time t.

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

3.5.1.4 Dividend (D)

Dividend can be given in the form of cash or shares. If the company declare dividend in cash then there is no difficulty in calculation. But if the company declares stock dividend or bonus share then shareholders get shares as dividend instead of cash. So there is a little difficult to calculate the exact amount in cash. In case of stock dividend the formal for total dividend amount is considered as follows:

Total Dividend Amount = Cash Dividend + Stock Dividend% $\times$ next years MPS

3.5.1.5 Portfolio Expected Return E (R_p)

The expected of the portfolio is the weighted average of the expected returns of the individual assets in the portfolio. The weighted are proportion of the investor wealth in each asset, and of the sum of the weights must be equal to one.

Portfolio return (R_p) = $W_A R_A + W_B R_B$ +…………………………..+ $W_N R_N$

Where,

R_P = Portfolio return

W_A = Weight of investment invested in stock A

W_B = Weight of investment invested in stock B

R_A = Expected return for stock A

R_B = Expected return for stock B

3.5.1.6 Portfolio Risk

The calculation of a portfolio risk is not as straightforward as the calculation of portfolio expected return. In order to calculate the risk of a portfolio, consideration must be given not only to the risk of the individual assets in the portfolio and their relative weights but also to the extent to which assets' return move together. We measure the risk of an individual asset by the variances of returns or its square root, the standard deviation. The degree, to which the assets' return moves together, is measured by the covariance or correlation coefficient. By combining the measures of individual assets risk (Variance or standard), the risk of portfolio can be estimated. The portfolio risk is measured by either variance or the standard deviation of returns. "The portfolio risk is affected by the variance of returns as well as the covariance between the return of individual assets included in the portfolio and respective weights." The variance of returns from portfolio made up an asset is defined by following equation:

$$\sigma_p^2 = \sqrt{W_A^2\sigma_A^2 + W_B^2\sigma_B^2 + 2\,W_A W_B\,COV\,(r_A r_B)}$$

$$\sigma_p = W_A^2\sigma_A^2 + W_B^2\sigma_B^2 + 2\,W_A W_B\,COV\,(r_A r_B)$$

Where,

σ_p^2 = Variance of portfolio rate of return

$\sigma_{p=}$ Portfolio rate of return

σ_A = Standard deviation of stock A

σ_B = Standard deviation of stock B

W_A = Weight of stock A

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W_B= Weight of stock B

COV ($r_A r_B$) = Covariance of returns between asset A and B

The covariance is related to correlation as shown in equation:-

COV ($r_A r_B$)= $P_{AB} \; \sigma_A \; \sigma_B$

3.5.1.7 Minimum Risk Portfolio

It is the portfolio with the lowest level risk in the efficient frontier. It is also called risk minimizing weight or optimal weight. In two –stock portfolio, the optimal weight to invest in stock A and B

$$W_A = \frac{\sigma_B{}^2 - P_{AB} \times \sigma_A \times \sigma_B{}^2}{\sigma_A{}^2 + \sigma_B{}^2 - 2\,P_{AB} \times \sigma_A \times \sigma_B}$$

W_B= 1- W_A

Where,

W_A = Optimal weight to invest in stock A

W_B = Optimal weight to invest in stock B

3.5.1.8 Portfolio Beta ($_P$)

Portfolio beta is the weighted average beta of total securities included in the portfolio. The portfolio beta is calculated by using the following formula.

Portfolio beta ($_P$) = $W_j B_j$

Where,

W_j = Portfolio of portfolio

B_j= Beta coefficient of assets j

3.5.1.9 Capital Assets Pricing Model (CAPM)

The relationship between an asset's return and it systematic risk can be expressed by the CAPM, which is also called the securities market line (SML). Comparison of required rate of return and expected rate or return gives the result whether the stock is overpriced or underpriced. For the analysis risk free return is needed i.e. RF here for the study the return of the Treasury bill issued by NRB is taken as risk free return, the equation for the CAPM is

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

Where,

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

R_m = Rate of return of market

R_f = Risk Free rate of return

β_j = Beta of stock j

3.5.1.10 Expected Return on Common Stock ($\overline{R}$)

Expected Return is simply arithmetic Mean of the past years return. This is an average return on common stock.

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

Where,

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

N = Number of years that the return is taken.

3.5.1.11 Standard Deviation ( )

It is a statistical concept and is widely used to measure risk from holding a single asset. The Standard deviation is derived so that a high standard deviation represents a large dispersion of return and is a high risk a low deviation is a small dispersion and represents a low risk. It provides more information about the risk of the assets. Its

advantage is that the uncertainties of returns can be summarized into a single easily calculated number. The major disadvantage is that the standard deviation considers possible returns above the expected value to be as risky as returns below the expected value.

Standard Deviation is a statistical measure and is widely used to measure risk from holding a single asset. The standard deviation represents a large dispersion of return and is a high risk and vice versa.

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

Where,

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

3.5.1.12 Variance

It is the square of standard deviation. It is denoted by sigma square

$$(\sigma^2) = \frac{\sum (R_m - \bar{R}_m)^2}{n-1}$$

Where,

σ^2 = Variance

R_m = Return of market

$\bar{R}_m$ = Expected rate of return of Market

n = Number of Observation

3.5.1.13 Coefficient of Variance (CV)

If risk is measured by the standard deviation, then risk per unit of expected return can be measured by the coefficient of variance (CV). The larger the CV the larger the relative risk of the investment.

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

The coefficient of Variance is more useful when we consider investments, while have different expected rates of return and different levels of risk (Weston and Brigham 1993).

$$CV = \frac{\sigma_i}{R_i}$$

Where,

σ_i = Standard Deviation of stock i^{th}

R_i = Expected rate of return of stock i^{th}

3.5.1.14 Total Risk

Total risk or total variability of returns of an asset or portfolio is measured by variance and standard deviation. This total risk can be divided into two parts; Diversifiable risk and Un-diversifiable risk. Hence,

Total risk = Diversifiable risk + Un-diversifiable risk

3.5.1.14.1 Diversifiable Risk

Diversifiable risk is also known as unsystematic risk. This type of risk is unique to an organization and can be largely eliminated by holding a diversified portfolio of investment. Diversifiable risk creates through the events like, labour, strikes, management errors, inventions, advertising campaigns, availability of raw

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materials etc. Un-systematic risk is unique to each firm an efficiently diversified portfolio of securities can successfully eliminate most of the unsystematic risk inherent in individual securities.

3.5.1.14.2 Un-diversifiable Risk

Un-diversifiable risk is also known as the systematic risk. This risk is that portion of total variability in return caused by market factors (also called market risk) that simultaneously affect the prices of all securities. Un-diversifiable risk crates due to the changes in the macro economic factors like, interest rate, inflation, investors, expectations, gross domestic product (GDP) etc. Moreover, it is the causes of external environment (political, economic, sociological and technological) of the firm.

Un-diversifiable risk is that part of total risk that can not be eliminated by allocating capital to a diversified portfolio of investments. A statistical measure of un-diversifiable risk index is beta coefficient.

$$\text{Beta Coefficient } (b_i) = \frac{Cov(r_i, r_m)}{\sigma^2_m}$$

$$\text{Beta Coefficient } (b_i) = \frac{Cov(r_i, r_m)}{\sigma^2_m}$$

$$= \frac{p_{im} \times \sigma_i \times \sigma_m}{\sigma^2_m}$$

Where,

b_i = beta coefficient of ith asset

σ^2_m = variance of market return

$Cov(r_i, r_m)$ = covariance between the returns of security i and market.

p_{im} = Correlation between the return of security i and market

Beta of market return equals to 1 and beta coefficient as an index of systematic risk is used to rank the assets. If beta is larger than 1, then the asset is more volatile than market and is called aggressive beta. If the beta is less than 1, the asset is called defensive beta and its price fluctuation is less volatile than market.

$$\text{Market beta } (b_m) = \frac{\text{Cov } (r_m, r_m)}{\sigma^2_m}$$

$$= \frac{P_{mm} \times \sigma_m \times \sigma_m}{\sigma^2_m}$$

$$= \frac{1 \times \sigma_m \times \sigma_m}{\sigma_m \times \sigma_m}$$

Where,

Cov $_{mm}$= Covariance between the market

3.5.1.14.3 Partitioning Total Risk

Partitioning risk is the division of total risk (variance) into systematic and unsystematic components.

Total risk = systematic risk + Unsystematic risk

$\text{Var}(r_i) = b^2_i \text{ var}(r_m) + \text{var}(e)$

Alternatively,

$\sigma^2_i = b^2_i \sigma^2_m + \text{var}(e)$

Where,

var(e)= Variance of standard error.

Then, Total risk of ith assets $= \sigma^2_i$

Systematic risk $= b^2_i \sigma^2_m$

Unsystematic risk= var (e) or

Unsystematic risk = Total risk – Systematic risk

Proportion of systematic risk or

Percentage of systematic $\quad = \quad \dfrac{\text{Systematic risk}}{\text{Total risk}} \times 100$

$$= \dfrac{b^2_i \sigma^2}{\sigma^2_i} \times 100$$

Proportion or percentage of systematic risk is also measured by coefficient of determination. Coefficient of determination is the square of the correlation coefficient.

3.5.1.15 Relationship between Systematic Risk and Coefficient of Determination

Coefficient of determination and proportion of systematic risk are the same. Coefficient of determination is the proportion of systematic risk in total risk. Higher the systematic risk higher will be the coefficient of determination and vice versa. The following equations justify that's the coefficient of determination and proportions of systematic risk are the same.

Coefficient of Determination (P^2_{im}) = $\dfrac{\text{Systematic Risk}}{\text{Total Risk}}$

$$= \dfrac{b^2_i \sigma^2_m}{\sigma^2_i} \quad = p^2_{im}$$

Where,

Proportion of systematic risk = p^2_{im}

Proportion of unsystematic risk = 1- p^2_{im}

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

4.1 Interpretation of Data

This chapter includes analysis of collected data and their presentation. Detail data of market price of stock, earning per share, Dividend of each bank and relevant data of NEPSE index is presented and their interpretation and analysis done with reference to preceding chapters, effort is made to analyze the recent Nepalese Stock Market Movement and Performance of Listed CBs. To make the analysis and interpretation more easily different tables and diagrams are drawn.

4.1.1 Analysis of Individual CBs

Among Twenty Five CBs in Nepal but only eighteen are listed in NEPSE and from those eighteen CBs only three are included in this research namely SCBNL, NABIL and NIBL Data collection in being done of six fiscal years (FY) from 2001/02 to 2006/07. First of all we are showing the market portfolio of Nepal Stock exchange.

4.1.1.1 Analysis of Market Risk and Return

According to Securities trading report Published by NEPSE on 2008, the yearly closing price of stock and yearly market index are given in the following table.
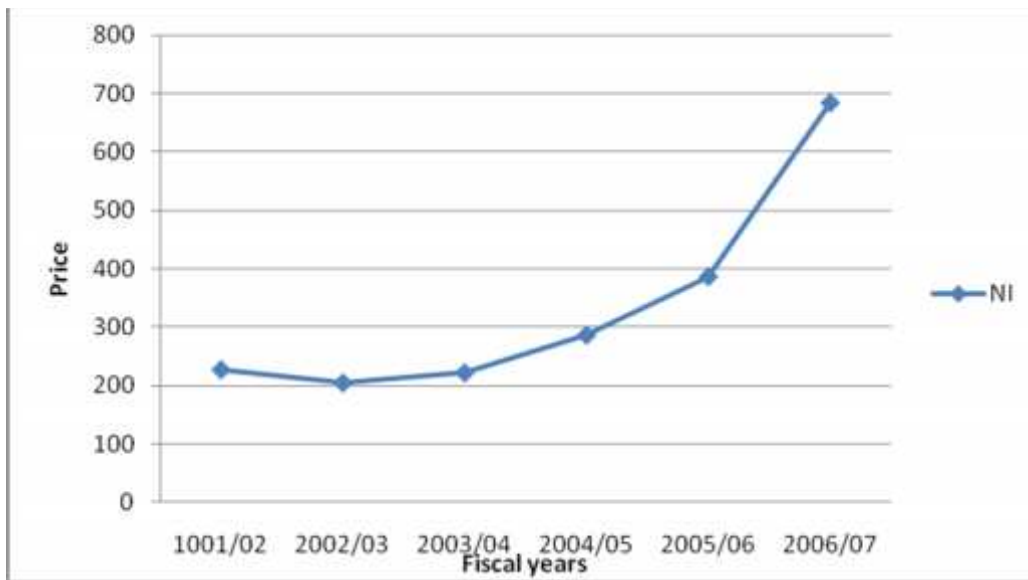
Table 4.1

Movement of NEPSE Index

Fiscal Years	NEPSE Index
2001/02	227.54
2002/03	204.86
2003/04	222.04
2004/05	286.67
2005/06	386.83
2006/07	683.95

Source: SEBON

From the above table shows that, FY 2001/02 to 2003/04 NEPSE is decreasing but FY 2004/05 to 2006/07 it is increasing very hihgly it shows the market index i.e. market condition is good situation

It can show the NEPSE index is as Figure.

Figure 4.1

Movement of NEPSE index (NI)

In the above figure the rate of return of market in during the research period is increasing trend. in the FY 2006/07 is highest then other FY. it shows the good market situation.

Table 4.2

Closing Price of Equity FY 2001/02 to 2006/07 of NABIL, NIBL and SCBNL

Fiscal years	NABIL	NIBL	SCBNL
2001/02	700	760	1550
2002/03	735	795	1640
2003/04	1000	940	1745
2004/05	1505	800	2345
2005/06	2240	1260	3775

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| 2006/07 | 5050 | 1729 | 5900 |

Data Source:-SEBON

Above table 4.2 shows that NABIL, NIBL and SCBNL has the highest closing price Rs.5050, Rs.1729 and Rs5900 in FY 2006/07 and lower of Rs 735, Rs.760 and Rs 1550 in FY 2001/02 it shows increasing trend of closing price but overall market index is decrease in FY 2001/02 to 2002/03 after that it has also increased. It can be show in below figure.

Figure 4.2

Closing price Movement of NABIL, NIBL and SCBNL
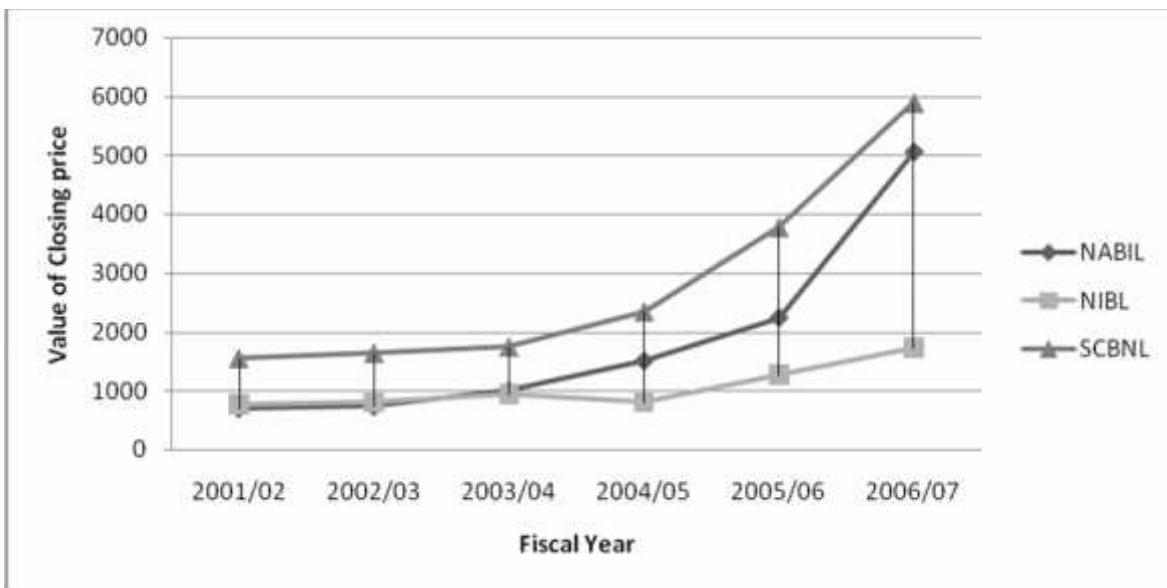
From the above figure SCBNL has all FY closing price of stock is higher then NABIL and NIBL, therefore all banks are called reputed bank for investing purpose But SCBNL, NABIL has increasing trend but NIBL has fluctuated in FY 2001/02 to 2003/04 and SCBNL has higher then other fiscal years of Rs5900 in FY 2006/07.

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NEPSE is the only stock market in Nepal and overall market index is represented by NEPSE. Following is the calculation of market return, Standard deviation and coefficient of Variance of NEPSE from 2001/02 to 2006/07

Table 4.3

Presentation and Calculation of Realized Market Return (R_m), Expected Return ($\overline{R}_m$), Standard Deviation (σ_m), variance (σ^2_m) and Coefficient of Variance ($C.V_m$) of Market

FY	NI	$(R_m) = \dfrac{NEPSE_{t-1} - NEPSE_1}{NEPSE_1}$	$(R_m - \overline{R}_m)$	$(\overline{R_m - R_m})^2$
2001/02	227.54	-	-	-
2002/03	204.86	-0.0997	-0.3318	0.1101
2003/04	222.04	0.0839	-0.1482	0.0220
2004/05	286.67	0.2911	0.0590	0.0035
2005/06	386.83	0.3494	0.1173	0.0138
2006/07	683.95	0.7681	0.5360	0.2873
Total		1.3928		0.4367
Expected return $(\overline{R}_m)$				0.2321
Standard Deviation of Market (σ_m)				0.2955
Variance of market (σ^2_m)				0.0873
Coefficient of Variance of market ($C.V_m$)				1.2732
Market portfolio risk(β_m)				1

Source: - SEBON, Appendix 1

From the above data, the past six years shows that the Market Return of NEPSE is not uniform. But most of the years have positive realized return. It also shows as in figure.

Figure 4.3

Market Rate of Return
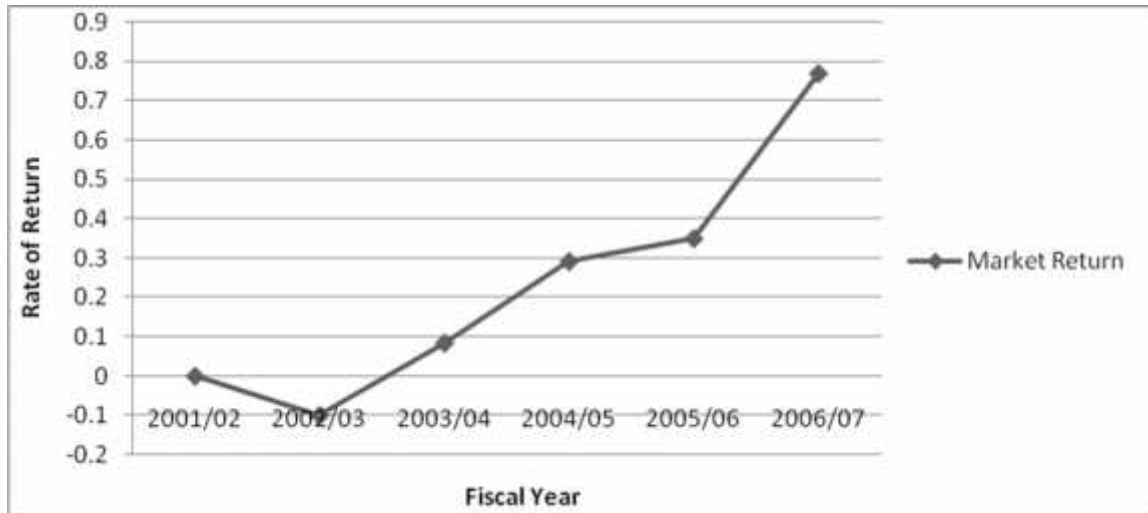
We can see above figure the market rate of return is very increasing from Fiscal years 2001/02 to 2006/07. It comes to know that the market conditions will not seriously affect the return in the FY 2002/03 has negative market rate of return. It is due to so many cause most of important cause is to be Political situation of nation. In this period NEPSE index is lower. It indicates the market condition is very serious. After 2003/04 the market index is positive trend it shows the good condition of market index, but in the FY 2006/07 the Market return is highest value due to very increase in NEPSE index. This indicates that the year of 2006/07 is good market situation.

The Expected Return of market portfolio is 0.2321. Which is not better but it is good situation. The value of Standard deviation of market portfolio (σ_m) is 0.2955, variance (σ^2_m) is 0.0873 and coefficient of Variance (CV_m) is 1.2731.

4.1.1.2 Analysis of NABIL Bank Ltd.

NABIL Bank Ltd. has Authorized Capital Rs 500000000,issuied capital & paid up CapitalRs 491654400 respectively and its number shareholders is 5076.

Table 4.4

MPS, DPS and EPS of NABIL Bank

FY	MPS		Closing price	Dividend		T.Dividend	EPS
	High	Low		Cash (Rs)	Stock		
2001/02	1500	465	700	-	40%	$0 + 735 \times 40\% = 294$	55.25
2002/03	875	700	735	30	-	$30 + 0\% \, 1000 = 30$	84.66
2003/04	1005	705	1000	50	-	$50 + 0\% \, 1505 = 50$	92.61
2004/05	1515	1000	1505	65	-	$65 + 0\% \, 2240 = 65$	105.49
2005/06	2300	1500	2240	70	-	$70 + 0\% \, 5050 = 70$	129.21
2006/07	5050	3775	5050	85	-	$85 + 0\% \, 3961^* = 85$	137.08

Source: NEPSE, Annual report of NABIL and Appendix 2

Total Dividend = Cash Dividend + % of Stock dividend of next years closing price

Closing Price Rs.3961[*] Oct.to Nov. 2008 (Source Business Age. Vol.5 no 2).

From the above table we can show the market price of stock is incresing from Fy 2001/02 to 2006/07. In the Fiscal Years 2001/02 Total dividend is high becouse at that time stock dividend provide 40% after that dividend and earning per share are also increasing level it shows that the market condition of NABIL bank is good. we can see the Movement of Market price, total dividend and Earning per share in below figure 4.4

Figure 4.4

Market Price Movement, EPS and Total Dividend of NABIL
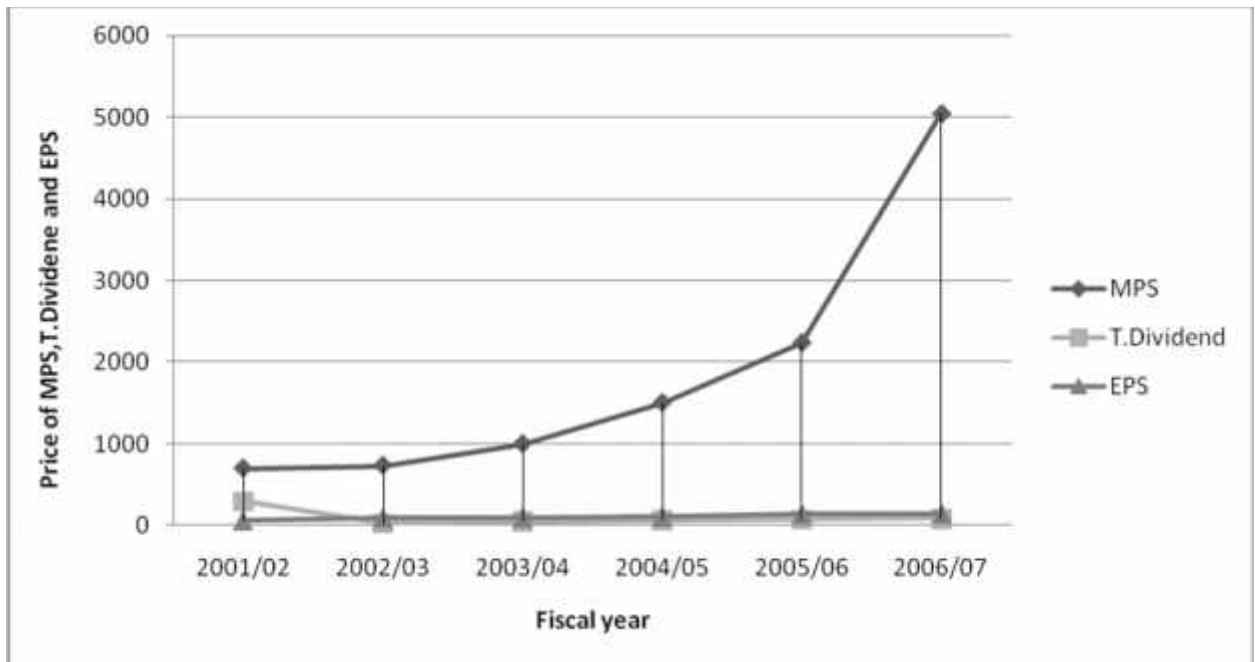
From the above figure we can see that The market price and EPS is increasing of NABIL bank and It provide highly dividend in fiscal years 2001/02 then other FYand EPS and MPS are also increasing trend.

Table 4.5

Table 4.5

Calculation of Realize rate of return(R_{NA}), Expected rate of return ($\bar{R}_{NA}$),

Standard deviation(σ_{NA}), Coefficient of Variance(CV_{NA}), Variance(σ^2_{NA}),

Undiversifiable risk or systematic risk or Beta risk(β_{NB}), Coerrelation

between market and Nabil bank return(ρ_{NB}) and diversifiable or

unsystematic risk of NABIL Bank

FY	MPS	T. Div.	$R_{NA} = \frac{(P_t - P_{t-1}) + D}{P_{t-1}}$	$(R_{NA} - \bar{R}_{NA})$	$(R_{NA} - \bar{R}_{NA})^2$	$(R_m - \bar{R}_m)$	$(R_{NA} - \bar{R}_{NA})(R_m - \bar{R}_m)$
2001/02	700	294	-	-	-	-	-
2002/03	735	30	0.0929	-0.3936	0.1549	-0.3318	0.1306
2003/04	1000	50	0.4286	-0.0579	0.0034	-0.1482	0.0086
2004/05	1505	65	0.5700	0.0835	0.0070	0.0590	0.0049
2005/06	2240	70	0.5349	0.0484	0.0023	0.1173	0.0057
2006/07	5050	85	1.2924	0.8059	0.6495	0.5360	0.4320
Total			2.9188		0.8171		0.5818

|	
Expected Return Of NABIL ($\bar{R}_{NA}$)	0.4865
Standard Deviation of NABIL(σ_{NA})	0.4043
Coefficient of Variance of NABIL (CV_{NA})	0.8310
Variance of NABIL(σ^2_{NA})	0.1635
Covariance of NABIL & Market return. COV.($r_{NA}.r_m$)	0.1164
Beta coefficient of NABIL(β_{NA})	1.3333
Total risk of NABIL(σ^2_{NA})	0.1635
Systematic or Un-diversifiable risk of NABIL ($\sigma^2_{NA} \times \sigma^2_m$)	0.1552
Percentage of systematic risk	95%
Unsystematic or Diversifiable risk of NABIL.var (e)	0.0083
Percentage of unsystematic risk	5%
Correlation between NABIL & Market return($\rho_{NA,m}$)	0.9741
Coefficient of Determination NABIL & Market return ($\rho^2_{NA,m}$)	0.95

Source: Annual report of NABIL, SEBON and Appendix 2

The coefficient of Determination measure the syatematic risk of total risk which created from market movement or macroeconomic factors. The above calculated

coefficient of determination 95% represents a portion of systematic risk out of the total risk and the remaining 5 % is the portion unique or unsystematic or unsystematic or non- market related risk or diversifiable risk of NABIL bank. There is a linear relationship between the systematic risk and coefficient of Determination. As systematic risk increase the coefficient of determination also increase and vice versa.

In the above calculation Beta coefficient of NABL is 1.3333 It is greater than market beta (i.e. 1) therefore,NABIL bank is aggrassive nature. it is a higher risk taker bank. Figure 4.5 shows the Realize rate of return of NABIL bank.

Figure 4.5

Rate of Return of NABIL
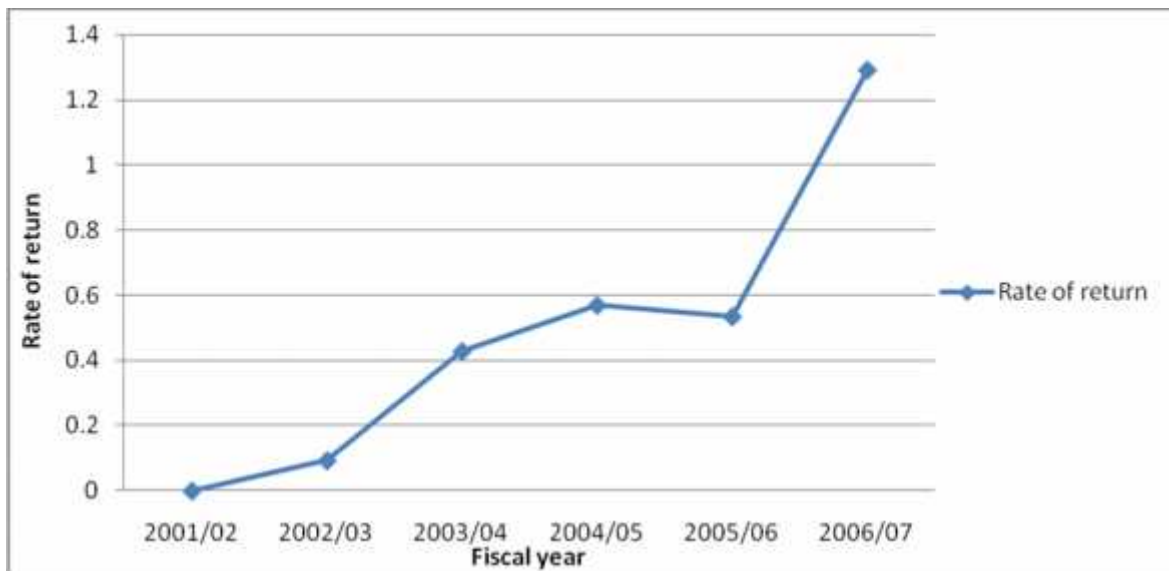
Rate of return of NABIL bank is increasing trends from FY 2001/02 to 2006/07 but FY 2006/07 is highly increased it is due to stock dividend.

4.1.1.3 Analysis of NIBL Bank Ltd.

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NIBL has Authorized Capital Rs 1000 million, issuied capital & paid up Capital Rs 801.3526 million respectively.

Table 4.6

MPS, DPS and EPS of NIBL

FY	MPS		Closing price	Dividend		Total Dividend	EPS
	High	Low		Cash	Stock		
2001/02	1150	575	760	-	-	-	33.59
2002/03	890	635	795	-	30%	$0 + 940 \times 30\% = 282$	39.56
2003/04	942	745	940	20	-	$20 + 0\% \, 800 = 20$	51.70
2004/05	1430	760	800	15%	-	$15 + 0\% \, 1260 = 15$	39.5
2005/06	1265	762	1260	12.58	-	$12.58 + 0\% \, 1729 = 12.58$	59.35
2006/07	1729	1395	1729	20	35.46%	$20 + 35.46\% \, 2220 = 807.212$	62.57

Source: NEPSE, Annual report of NIBL and Appendix 3

Total Dividend = Cash Dividend + % of Stock dividend

Closing Price Rs.2220 Oct.to Nov. 2008 (Source Business Age. Vol.5 no 2).

From the above table no 4.6 market price of stock and EPS is slowely increasing in FY 2001/02 to 2003/04 then it decreased in FY 2004/05 than it is increasing very highly from FY 2005/06 to 2006/07. Total dividend is highly distribute in FY 2006/07 then it is decrease 2003/04 to 2005/06 after that it also increasing. Below figure 4.6 shows the movement of MPS, EPS and Total dividend.

Figure 4.6

Movement of MPS,T.Dividend and EPS of NIBL
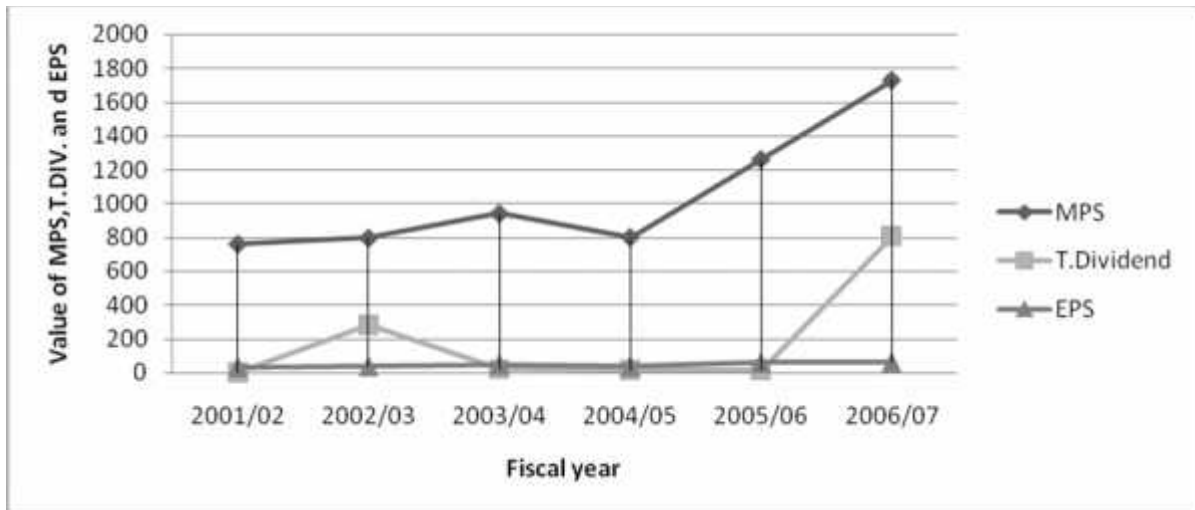
In the above figure we can see that the closing price is increasing highly then total dividend and EPS ,EPS is fluctuation level but the dividend is highly distributes in fiscal years 2006/07.

Table 4.7

Calculation of Realize rate of return(R_{NI}), Expected rate of return ($\bar{R}_{NI}$),

Standard deviation(σ_{NI}), Coefficient of Variance(CV_{NI}), Variance(σ^2_{NI}),

Undiversifiable risk or systematic risk or Beta risk(β_{NI}), Coerrelation between

market and NIBL bank return(ρ_{NI}) and diversifiable or

unsystematic risk of NIBL

FY	MPS	T. Div.	R_{NI}	$(R_{NI} - \bar{R}_{NI})$	$(R_{NI} - \bar{R}_{NI})^2$	$(R_m - \bar{R}_m)$	$(R_{NI} - \bar{R}_{NI})(R_m - \bar{R}_m)$
2001/02	760	-	-	-	-	-	-
2002/03	795	282	0.4171	0.0679	0.0046	-0.3318	-0.0225
2003/04	940	20	0.2075	-0.1417	0.0201	-0.1482	0.0210
2004/05	800	15	-0.1330	-0.4822	0.2325	0.0590	-0.0284
2005/06	1260	12.58	0.5907	0.2415	0.0583	0.1173	0.0283
2006/07	1729	807.212	1.0129	0.6637	0.4405	0.5360	0.3557
Total			2.0952		0.756		0.3541
Expected Return Of NIBL ($\bar{R}_{NI}$)							0.3492
							0.3888

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Standard Deviation of NIBL(σ_{NI})	1.1134
Coefficient of Variance (CV_{NI})	0.1512
Variance of NIBL(σ^2_{NI})	0.0708
Covariance of NIBL & Market return. COV.($r_{NI}.r_m$)	0.8110
Beta coefficient of NIBL(β_{NI})	0.1512
Total risk of NIBL(σ^2_{NI})	0.0574
Systematic or Un-diversifiable risk of NIBL($\beta^2_{NI}\times\sigma^2_m$)	37.96%
Percentage of Systematic risk	0.0938
Unsystematic or Diversifiable risk of NIBL.var(e)	62.04%
Percentage of Unsystematic risk	0.6161
Correlation between NIBL& Market return($\rho_{NI,m}$)	0.3796
Coefficient of Determination NIBL & Market return ($\rho^2_{NI,m}$)	

Source: Appendix 3,Annual report of NIBL

The coefficient of Determination measure the syatematic risk of total risk which created from market movement or macroeconomic factors. The above calculated coefficient of determination 37.96% represents a portion of systematic risk out of the total risk and the remaining 62.04%% is the portion unique or unsystematic or unsystematic or non- market related risk or diversifiable risk of NABIL bank.There is a linear relationship between the systematic risk and coefficient of Determination. As systematic risk increase the coefficient of determination also increase and vice versa.

In the above calculation Beta coefficient of NIBL is 0.8110 It is lower than market beta (i.e. 1) therefore, NIBL is definsive nature. it is a lower risk taker bank. Figure 4.7 Shows the realize rate of retun of NIBL.

Figure 4.7

Realize Rate of Return of NIBL

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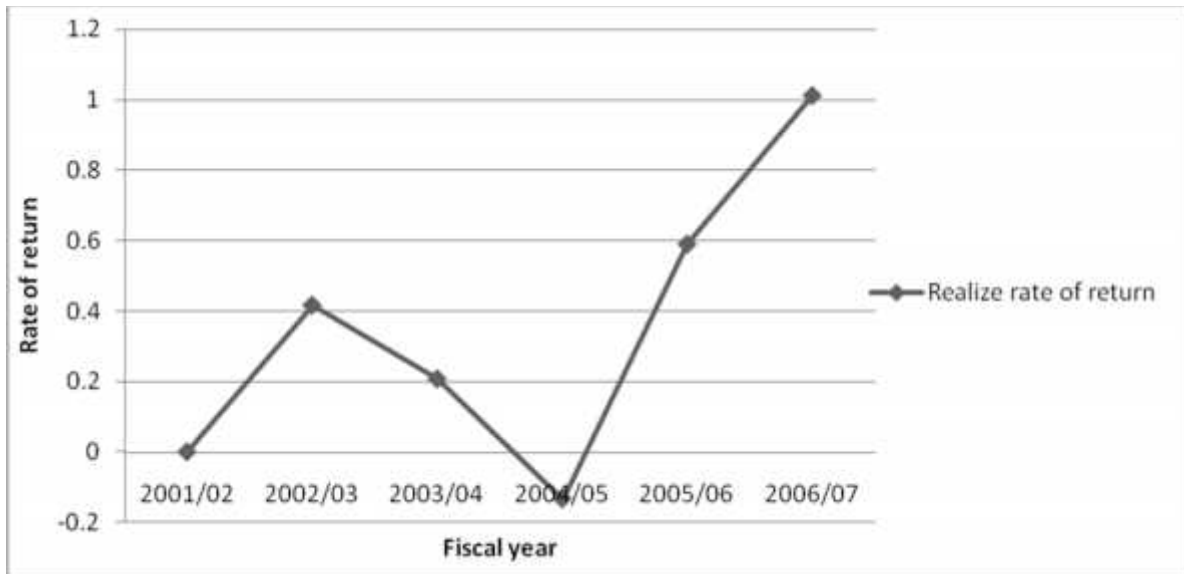
Realize rate of return of NIBL is increased FY 2001/02 to 2002/03 then decreased from 2002/03 to 2004/05 after that it is increased.

4.1.1.4 Analysis of SCBNL

SCBNL has Authorized Capital Rs 1000 million, issuied capitalRs.413.2548 million & paid up Capital Rs500 million.

Table 4.8

MPS, DPS and EPS of SCBNL

| FY	MPS		Closing	Dividend		Total Dividend	EPS
	High	Low	price	Cash	Stock		
2001/02	2100	1000	1550	100	-	100+0%1640 = 100	141.13
2002/03	1760	1380	1640	100	-	100 + 0% 1745= 100	149.30
2003/04	1800	1520	1745	110	10%	110+10%2345 = 344.5	143.55
2004/05	2350	1553	2345	110	-	110+0% 3775= 110	143.14
2005/06	3775	2200	3775	120	-	120+0%5900= 120	175.84
2006/07	5900	4800	5900	130	10%	130+10%7655* = 895.5	167.37

Source: NEPSE, Annual report of SCBNL and Appendix 4

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Total Dividend = Cash Dividend + % of Stock dividend

Closing Price Rs.7655* Oct.to Nov. 2008 (Source Business Age. Vol.5 no 2).

From the above table no.4.8 we can show the market price of stock is incresing from Fy 2001/02 to 2006/07 but from FY 2005/06 to 1006/07 has highly increasing. earning per share are fluctuation but dividend in FY 2003/04and 20006/07 has highly distributed then other FY. it shows that the market condition of SCBNL bank is better then other banks. we can see the Movement of Market price, total dividend and Earning per share in below figure 4.8.

Figure 4.8

Movement of MPS, T. Dividend and EPS of SCBNL
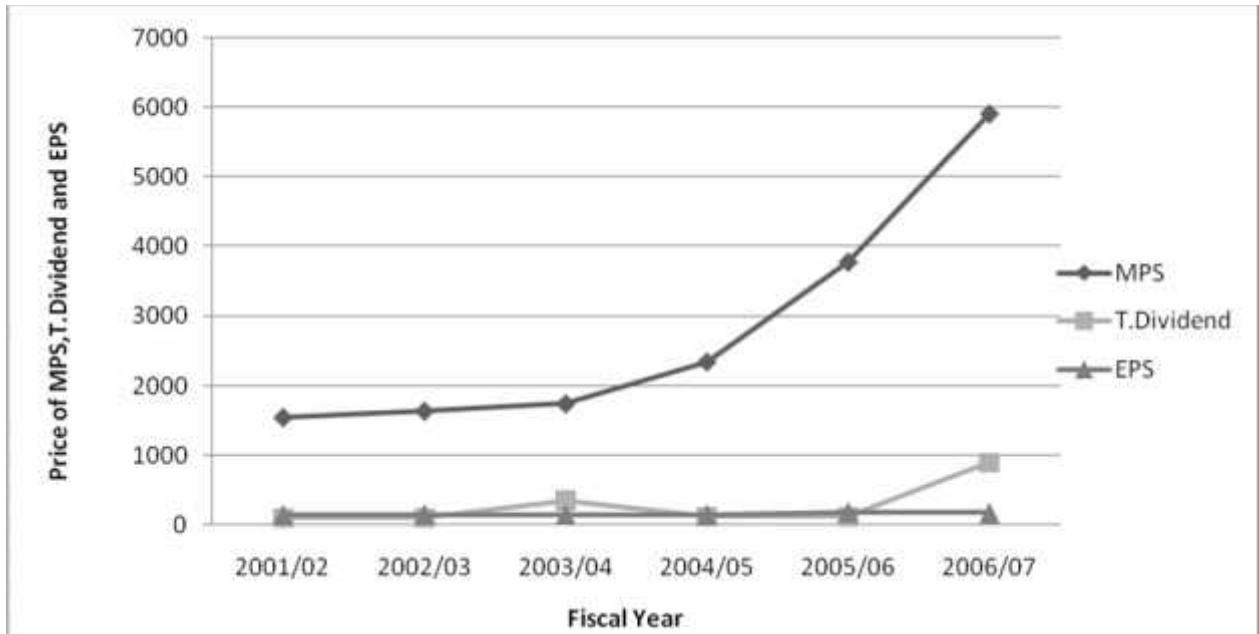
In the Above figure 4.8 we can see that the total dividend is highly distributes to shareholders from fiscal years 2002/03 to 2006/07 MPS and EPS is also increasing level so the market condition of SCBNL is good.

Table 4.9

Calculation of Realize rate of return(R_{SC}), Expected rate of return ($\overline{R}_{SC}$),

Standard deviation(σ_{SC}), Coefficient of Variance(CV_{SC}), Variance(σ^2_{SC}),

Undiversifiable risk or systematic risk or Beta risk(β_{SC}), Coerrelation

between market and SCBNL return(ρ_{SC}) and diversifiable or

unsystematic risk of SCBNL

FY	MPS	T. Div.	R_{SC}	$(R_{SC} - \overline{R}_{SC})$	$(R_{SC} - \overline{R}_{SC})^2$	$(R_m - \overline{R}_m)$	$(R_{SC}-\overline{R}_{SC})$ $(R_m-\overline{R}_m)$
2001/02	1550	100	-	-	-	-	-
2002/03	1640	100	0.1226	-0.2549	0.0650	-0.3318	0.0846
2003/04	1745	344.5	0.2741	-0.1034	0.0107	-0.1482	0.0153
2004/05	2345	110	0.4069	0.0294	0.0009	0.0590	0.0017
2005/06	3775	120	0.6610	0.2835	0.0804	0.1173	0.0333
2006/07	5900	895.5	0.8001	0.4226	0.1786	0.5360	0.2265
Total			2.2647		0.3356		0.3614

|	
Expected Return Of SCBNL ($\overline{R}_{SC}$)	0.3775
Standard Deviation of SCBNL (σ_{SC})	0.2591
Coefficient of Variance(CV_{SC})	0.6864
Variance of SCBNL (σ^2_{SC})	0.0671
Covariance of SCBNL & Market return. COV.($r_{SC}.r_m$)	0.0723
Beta coefficient of SCBNL (β_{SC})	0.8282
Total risk of SCBNL(σ^2_{SC})	0.0671
Systematic or Un-diversifiable risk of SCBNL	0.0599
Percentage of systematic risk	89%
Unsystematic or Diversifiable risk of SCBNL.var(e)	0.0072
Percentage of Un-systematic or diversifiable risk	11%
Correlation between SCBNL & Market return($\rho_{SC, m}$)	0.9439
Coefficient of Determination SCBNL & Market return ($\rho^2_{SC. m}$)	0.89

Source: Appendix4, SEBON, and Annual report of SCBNL

The coefficient of Determination measure the syatematic risk of total risk which created from market movement or macroeconomic factors. The above calculated

coefficient of determination 89% represents a portion of systematic risk out of the total risk and the remaining 11% is the portion unique or unsystematic or non-market related risk or diversifiable risk of SCBNL.There is a linear relationship between the systematic risk and coefficient of Determination. As systematic risk increase the coefficient of determination also increase and vice versa.

In the above calculation Beta coefficient of SCBNL is 0.8282. It is lower than market beta (i.e. 1) therefore, SCBNL is also definsive nature. it is a lower risk taker than other bank. Figure no 4.9 shows the realize rate of return of SCBNL.

Figure 4.9

Realize Rate of Return of SCBNL
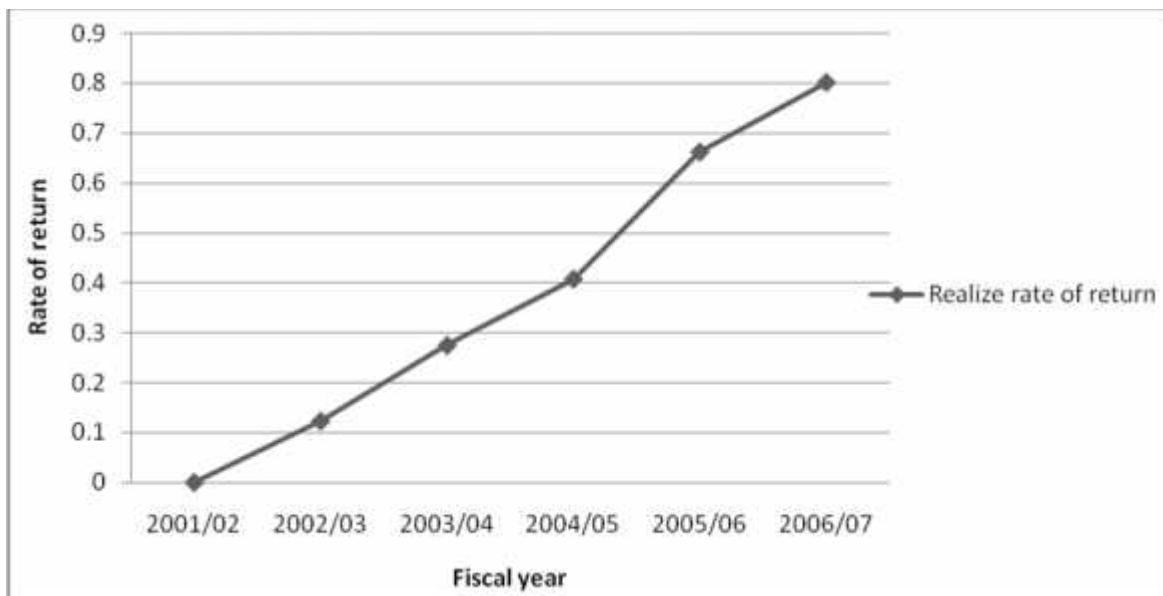
Realize rate of return of SCBNL is increasing trends from FY 2001/02 to 2006/07 it is not fluectuation.

4.1.1.5 Portfolio Analysis

A portfolio is the combination of different assets. The portfolio would be able to reduce unsystematic or diversifiable risk. It is the random selection of securities that are to be aded to the portfolio. It reduces a pportfolio's total diversifiable risk to zero. Previous analysis is risk and return based on the investment is single security. The ecpected return in the portfolio is simply the weighted average of the expected return of the securities comparising that portfolio and the weights are equal to the proportion of total fund invested in each security. The sum of weight must be 100%. T'herefore we need to extend our analysis of risk and return to the portfolio context. Here we are going to analyze th portfolio. The analysis is based on the two assets portfolio and the tools for analysis are described already in the chapter research methodology.

4.1.1.5.1 Portfolio Analysis of Stocks between NABIL and NIBL

The portfolio of the common stock of NABIL (let's suppose stock NA) and common stock of NIBL(let's suppose stock NI) are analyzed. Covariance,Correlation,Proportion of the stocks, expected rate of return and Standard deviation , Beta are calculated for analysis of the stocks.

Table 4.10

Calculation Covariance, Correlation, Proportion of the stocks, expected rate of return and Standard Deviation, Beta of the Portfolio

FY	$(R_{NA} - \bar{R}_{NA})$	$(R_{NI} - \bar{R}_{NI})$	$(R_{NA} - \bar{R}_{NA})(R_{NI} - \bar{R}_{NI})$
2001/02	-	-	-
2002/03	-0.3936	0.0679	-0.0267
2003/04	-0.0579	-0.1417	0.0082
2004/05	0.0835	-0.4822	-0.0403
2005/06	0.0484	0.2415	0.0117
2006/07	0.8059	0.6637	0.5349
Total			0.4878
Portfolio Weight	Stock NA= 0.4485		Stock NI = 0.5515
Covariance			0.0976

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Correlation	0.6209
Expected return	0.4108
Standard Deviation	0.3566
Beta	1.0453

Source: Table 4.5 , 4.7 and Appendix 6

The correlation between the return of the securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1, then the portfolio can not reduce the any level of risk. And if the correlation is perfectly negative or -1, then the porper combination of the two securities can reduce unsystematic risk by creating risk free portfolio. It means negative correlation is beneficial, here, the correlation between two stocks is 0.6209, which is positive correlated. So, portfolio construction between these two stocks is not beneficial.

Since, W_{NA} = 0.4485 and W_{NI} = 0.5515 this results indicate if the investor wanted to minimize risk then he/she would have to invest 44.85% in NA stock i.e. NABIL and 55.15 % in NI stock i.e. NIBL.

4.1.1.5.2 Portfolio Analysis of Stocks between SCBNL and NIBL

The portfolio of the common stock of SCBNL (let's suppose stock SC) and common stock of NIBL (let's suppose stock NI) are analyzed. Covariance,Correlation,Proportion of the stocks, expected rate of return and Standard deviation , Beta are calculated for analysis of the stocks.

Table 4.11

Calculation Covariance,Correlation,Proportion of the stocks, expected rate of return and Standard deviation , Beta of the portfolio of Stock SC and NI

FY	$(R_{SC} - \overline{R}_{SC})$	$(R_{NI} - \overline{R}_{NI})$	$(R_{SC}\text{-}\overline{R}_{SC})\,(R_{NI}\text{-}\overline{R}_{NI})$
2001/02	-	-	-
2002/03	-0.2549	0.0679	- 0.0173
2003/04	-0.1034	-0.1417	0.0147
2004/05	0.0294	-0.4822	- 0.0142
2005/06	0.2835	0.2415	0.0685
2006/07	0.4226	0.6637	0.2805
Total			0.3322
Porpotion of Stock	Wsc = 0.9918		W_{NI}= 0.0082
Covariance			0.0664
Correlation			0.6592
Expected return			0.3773
Standard Deviation			0.2579
Beta			0.8281

Source: Table 4.7, 4.9 and Appendix 7

The correlation between the return of the securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1, then the portfolio can not reduce the any level of risk. And if the correlation is perfectly negative or -1, then the porper combination of the two securities can reduce unsystematic riskeven up to zero. It means positive correlation between securities isnot beneficial and vice-versa, here, the correlation between two stocks i.e. SCBNL and NIBL is 0.6592, which is perfectly positive correlated. That's why the construction of portfolio between these two stocks are not good for the investor.

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Since, $W_{SC} = 0.9918$ and $W_{NI} = 0.0082$, this results indicate if the investor wanted to minimize risk then, he/she would have to invest 99.18% in SC stock i.e. SCBNL and 0.82% in NI stock i.e. NIBL common stock.

4.1.1.5.3 Portfolio Analysis of Stocks between NABILand SCBNL

The portfolio of the common stock of SCBNL (let's suppose stock SC) and common stock of NIBL (let's suppose stock NI) are analyzed. Covariance,Correlation,Proportion of the stocks, expected rate of return and Standard deviation , Beta are calculated for analysis of the stocks.

Table 4.12

Calculation Covariance,Correlation,Proportion of the Stocks, Expected Rate of Return and Standard Deviation , Beta of the portfolio of Stock NA and SC

FY	$(R_{NA} - \bar{R}_{NA})$	$(R_{SC} - \bar{R}_{SC})$	$(R_{NA}-\bar{R}_{NA})(R_{SC}-\bar{R}_{SC})$
2001/02	-	-	-
2002/03	-0.3936	-0.2549	0.1003
2003/04	-0.0579	-0.1034	0.0060
2004/05	0.0835	0.0294	0.0025
2005/06	0.0484	0.2835	0.0137
2006/07	0.8059	0.4226	0.3406
Total			0.4631
Portfolio Weight of Stock NA and SC	$W_{NA}= -0.5617$	$W_{SC} = 1.5617$	
Covariance			0.0926
Correlation			0.8840
Expected return			0.3163
Standard Deviation			0.1990
Beta			0.5445

Source: Table 4.5, 4.9 and Appendix 8

The correlation between the return of the securities plays a significant role in the risk reduction by portfolio construction. If the correlation is perfectly positive or 1, then the portfolio can not reduce the any level of risk. And if the correlation is perfectly negative or -1, then the porper combination of the two securities can

reduce unsystematic risk even upto zero. It means positive correlation betweensecurities is not beneficial and vice-versa, here, the correlation between NABIL and SCBNL stocks is 0.8840, which is higher perfectly positively correlated. That's why the construction of portfolio between these stocks are not good for the investor.

Since,W_{NA} = - 0.5617 and W_{SC} = 1.5617, this results indicate if the investor wanted to minimize risk then, he/she would have to invest – 56.17% in NA stock i.e. NABIL and 156.17 % in SC stock i.e SCBNL common stock.

4.1.1.5.4 Comparison Between Each Portfolio

Table 4.13

Portfolio Risk, Return, and Portfolio Coefficient of Variance

Portfolio	Weights on Banks	Portfolio Return	Portfolio Risk	Portfolio Correlation	Coefficient of Variance	Remarks
Portfolio A	NABIL & NIBL 0.4485 & 0.5515	0.4108	0.3566	0.6209	0.8681	Not Feasible
Portfolio B	NIBL & SCBNL 0.0082 &0.9918	0.3773	0.2579	0.6592	0.6835	Not Feasiable
Portfolio C	NABIL & SCBNL -0.5617 & 1.5617	0.3163	0.1990	0.8840	0.6291	Not Feasible

Source: Appendix 6,7 and 8

In above table prensated Portfolio Return, Risk correlation and coefficient of veriance. All banks are Positive correlated between each other. But the correlation is less than Perfectly Positive (+1). Therefore, the reduction in risk is Possible. In this study, Portfolio 'C' has the lowest Risk therefore, It has lower return. Ignoring this portfolio remaining portfolio 'B' has also lower risk. Portfolio 'A' has highert risk and return than portfolio B and C. The risk per units of Portfolio 'C' has

lower than other two banks. Investor always want to lower the risk higher the return.

4.1.1.6 Efficient Frontier

Efficient Set is the collection form or set of portfolio. Efficient set theoram explains how investor will choose their portfolios from the set of efficient portfolio. This (I) Maximum expected return for varying level of risk.(II) Minimum risk for varying level of expected returns. While plotting the coordinates of portfolio on the base of portfolio risk and portfolio return. They will form one kind of set known as efficient set. An infinite number of portfolios formed from a ste of N securities. The investors can buy and more securities in order to create a portfolio. An investor can distribute his/her investing money in different securities. Theefficient set is also known as efficient frontier. The risk and return of all individual assets plotted in risk return space. The represented by the dots, which represents set of all investment opportunities available in the world.

We are planning to invest any level (1 million,10 million or 20 million etc) of fund in three securities i.e. NB,NI and SC are available. We have the expected return for nB security is 9 percent and standard deviation is 4 percent For NI security the expected return is 10 percent and standard deviation is 5 percent and Expecte dreturn is 12 percent and standard deviation is 6 percent for security SC.Correlation between the two security or assets is $_{NB,NI} = 0.50,$ $_{NI,SC} = 0.60$ and $_{NB,SC} = 0.40$ respectively. If invest their fund in different proportion or weights of each securities.

Table 4.14
Weights or Proportation of each Securities

NB	NI	SC
1.00	0	0
0.70	0.20	0.10

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0.50	0.30	0.20
0.30	0.40	0.30
0.30	0.50	0.40
0.10	0.50	0.50
0	0	1.00

Consider, above proportion or weights of fund, Calculation portfolio return for various combination.

Table 4.15

Portfolio Expected Return

W_{NA}	W_{NI}	W_{SC}	$E(R_{NA})$	$E(R_{NI})$	$E(R_{SC})$	$E(R_P) = W_{NA}.E(R_{NB}) + W_{NI}.E(R_{NI}) + W_{SC}.E(R_{SC})$
1.00	0	0	9%	10%	12%	$= 1 \times 9\% + 0 \times 10\% + 0 \times 12\% = 9\%$
0.70	0.20	0.10	9%	10%	12%	$= 0.70 \times 9\% + 0.20 \times 10\% + 0.10 \times 12\% = 9.5\%$
0.50	0.30	0.20	9%	10%	12%	$= 0.50 \times 9\% + 0.30 \times 10\% + 0.20 \times 12\% = 9.9\%$
0.30	0.40	0.30	9%	10%	12%	$= 0.30 \times 9\% + 0.40 \times 10\% + 0.30 \times 12\% = 10.3\%$
0.30	0.50	0.40	9%	10%	12%	$= 0.30 \times 9\% + 0.50 \times 10\% + 0.40 \times 12\% = 10.7\%$
0	0.50	0.50	9%	10%	12%	$= 0 \times 9\% + 0.50 \times 10\% + 0.50 \times 11\% = 11\%$
0	0	1.00	9%	10%	12%	$= 0 \times 9\% + 0 \times 10\% + 1.00 \times 12\% = 12\%$

Calculation, Portfolio standard deviation for various combination.

Table 4.16

Portfolio Standard Deviation

W_{NA}	W_{NI}	W_{SC}	NA	NI	SC	$\sigma_p = \sqrt{\begin{aligned} & W_{NA}^2 \times \sigma_{NA}^2 + W_{NI}^2 \times \sigma_{NI}^2 + W_{SC}^2 + \sigma_{SC}^2 + \\ & 2 \times \rho_{NA.NI} \times W_{NA} \times W_{NI} + \\ & 2 \times \rho_{NASC} \times W_{NA} \times W_{SC} + \\ & 2 \times \rho_{NI.SC} \times W_{NI} \times W_{SC} \end{aligned}}$

1.00	0	0	4%	5%	6%	4%
0.70	0.20	0.10	4%	5%	6%	3.75%
0.50	0.30	0.20	4%	5%	6%	3.84%
0.30	0.40	0.30	4%	5%	6%	4.14%
0.30	0.50	0.40	4%	5%	6%	4.58%
0	0.50	0.50	4%	5%	6%	4.92%
0	0	1.00	4%	5%	6%	6%

Tabulation of risk and return for the portfolio.

Table 4.17

Risk and Return of Portfolio

Portfolio return $E(R_P)$	Portfolio risk (σ_p)
9%	4%
9.5%	3.75%
9.9%	3.84%
10.3%	4.14%
10.7%	4.58%
11%	4.92%
12%	6%

We can plote in the graph of the Minimum risk or variance portfolio opportunity set from the above portfolio return and standard deviation i.e. calcualtion.

Figure 4.10

Efficient Set, Portfolio Opportunity Set and Optimum Variance Portfolio

BC=Efficient Set

ABC= Portfolio Opportunity Set

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8                                    B= Optimum Variance Portfolio

6                          A

4

2

0    2      4        6        8       12              p
```
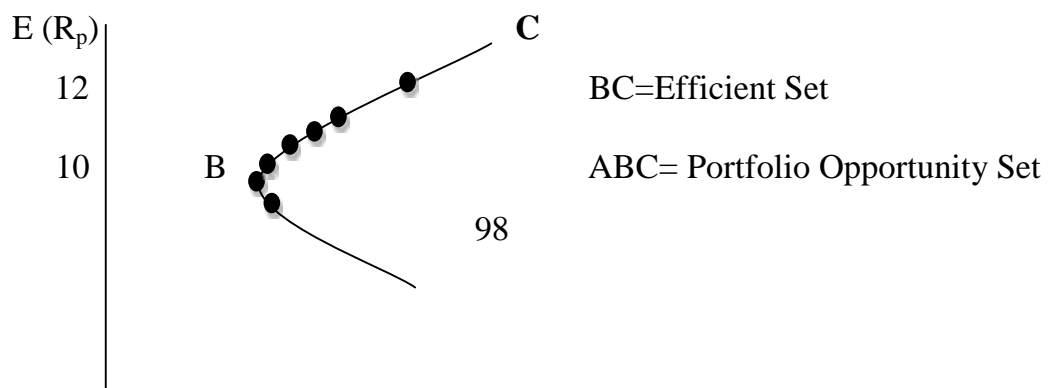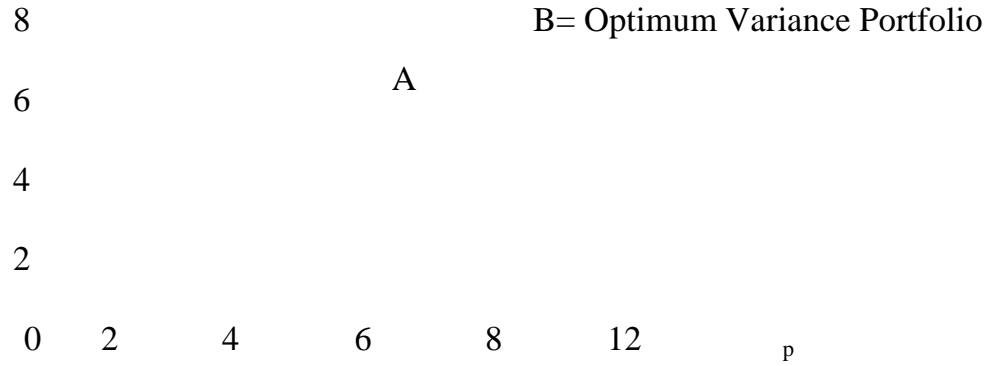
4.1.1.7 Inter Banks Comparison

In this part, analysis individual banks is combined together and analysis the whole banks. Comparitive analysis of return and risk is performed here.

4.1.1.7.1 Expected Rate of Return & Required Rate of Return

In the following table 4.18 shows the Expected rate of return and Required rate of return of each bank.

Table 4.18

Expected rate of return and Required rate of return of each Bank

Bank	R_f	E (r)	RRR	Evaluation	Remarks
NABIL	0.0479	0.4865	0.2935	Underpriced	Expected rate of return > Required rate of return.
NIBL	0.0479	0.3492	0.1973	Underpriced	Expected rate of return > Required rate of return.
SCBNL	0.0479	0.3775	0.2005	Underpriced	Expected rate of return > Required rate of return.

Source :- Appendix 5

Expected rate of return is NABIL=0.4865, NIBL= 0.3492, SCBNL=0.3775 is greater than Required rate of return NABIL= 0.2935, NIBL= 0.1973, SCBNL= 0.2005.

Above table all sample banks has Expected rate of return is greater than Required rate of return so there is Underpriced of stock at that time, investor can not short sell their stock they just buy and hold strategy. they have not make more profit. If stock Required rate of return is greater than expected rate of return there is overpriced of stock at that time investor can sell there stock they get more and more profit from the stock.

Required rate of return depends on beta cofficient of assets or stock so higher the beta higher will be the return.

In the following table Expected return, Standard deviation and Coefficient of Variance, of each bank from 2001/02 to 2006/07 is summarized.

Table 4.19

Presentation of Expected Return, Standard Deviation,Variance and

Coefficient of Variance of each Bank

Banks	Expected Return($\overline{R}$)	Standard Deviation( )	Variance (^{2})	Coefficient of Variance(CV)	Remarks
NABIL	0.4865	0.4043	0.1635	0.8310	Higher Return & High risk
NIBL	0.3492	0.3888	0.1512	1.1134	Moderate Return & Moderate risk
SCBNL	0.3775	0.2591	0.0671	0.6864	Moderate return & Lower risk

*Sources:-From calculation of above table .4.5, 4.7 & 4.9*

In the above table 4.19 , the NABIL & SCBNL have higher expected return, so that the investors expect to get highest return from those banks and NIBL has lower expected return then those NABIL and SCBNL but it is moderate expected return. NABIL have highest return so they have highest risk then comparison to

SCBNL and NIBL,Risk of NIBL has higer than SCBNL. From the analysis it is easy to interpate that more the return more will be the risk.

Coefficient of Variance shows per unit risk bearing to have expected return. In terms of coefficient of variance lower, it is be better. So from the point of view of coefficient of variance the SCBNL is better it have lower per unit variance comparison to other banks. There fore, in above figure total risk of SCBNL has lower than other bank.

For detail information the comparison can be also shown will the help of below Figure. Expected return Standard Deviation, variance and coefficient of Variance of each bank.

Figure 4.11

Expected Rate of Return, Standard Deviation, Variance and Coefficient of Variance of each Bank
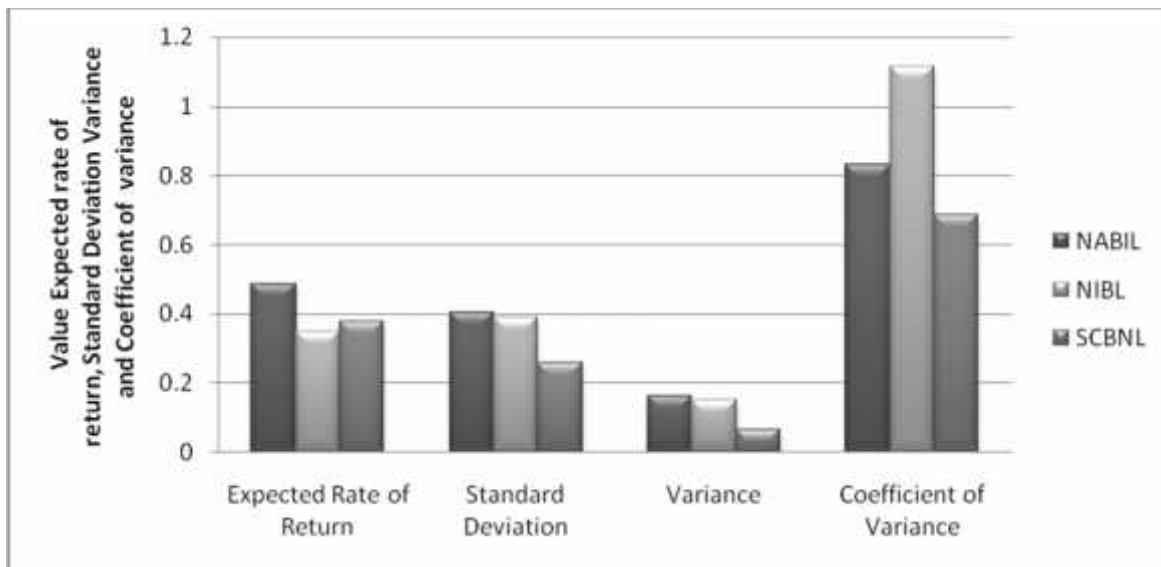
In the above figure, higher the return higher the risk it is Proved. we can see easily known about the NABIL has higher the return higher the risk NIBL has Moderate return & Moderate risk and SCBNL has Moderate return and Lower risk.

Coefficient of Variance of SCBNL has lower so there is lower per unit risk and the NIBL has the very high Coefficient of Variance so there is high per units risk.

4.1.1.7.2 Comparison Of Inter Bank Beta Coefficient

In this research beta coefficient is taken as the measurement. Beta is an undiversifiable or systematic risk which can not be eliminated through diversification. Higher the beta Coefficient higher will be the market Sensitivity and higher will be the reaction to the market movement. The following table shows the beta coefficient of each bank.

Table 4.20

Beta Coefficient

Banks	Beta( )	Remarks
NABIL	1.3333	(> 1) i.e Higher market Sensitivity
NIBL	0.8110	(< 1) i.e. Lower market Sensitivity
SCBNL	0.8282	(< 1) i.e. Lower market Sensitivity

Sources:-From calculation of above table 4.5, 4.7 & 4.9

In above table 4.21 we can show that the beta coefficient or undiversifibale or systematic risk of NABIL is most higher than SCBNL and NIBL so it has most Undiversifiable risk. higher the risk, return will be also higher or vise versa. Beta coefficient or undiversifiable or systematic risk show the below Figure.

Figure 4.12

Beta Coefficient of each Bank
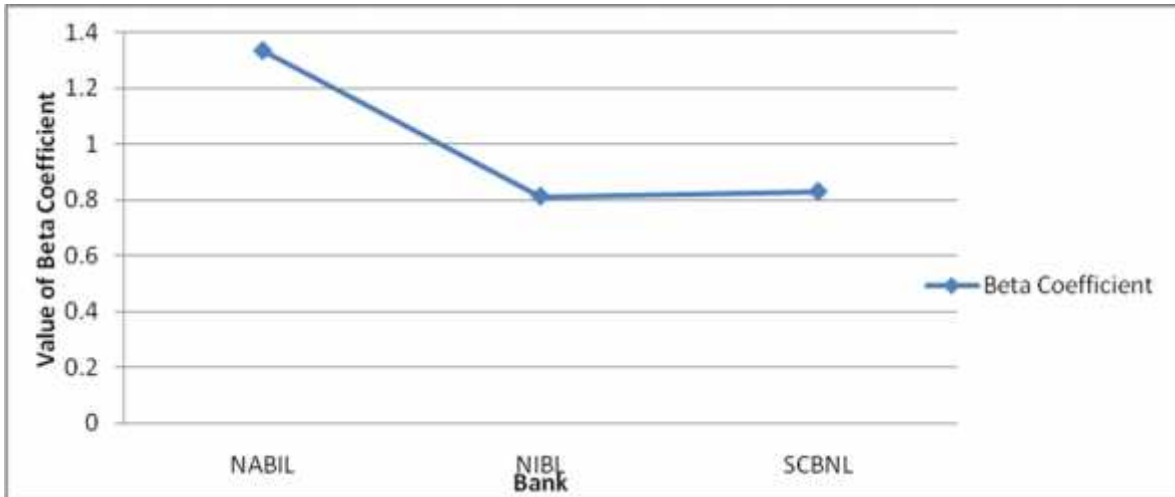
Beta coefficient of NABIL is most higher then the SCBNL and NIBL it can not be diversifiable through the bank it is due to the market situation such as war, inflation, high interest rates, depression etc. Beta coefficient of SCBNL and NABIL is and that means it very high volatile to the market risk. it is considered as the aggressive stock Investor who is risk taker they can invest in this type of stock or vise versa.

4.1.1.7.3 Comparison each Bank of Diversifiable or Unsystematic Risk

Diversifiable risk is that which can be reduced to Zero. In this research Diversifiable risk of SCBNL is most higher then other banks. NABIL bank has also higher than NIBL so NIBL is lower then those banks. we can see below table 4.21.

Tabl 4.21
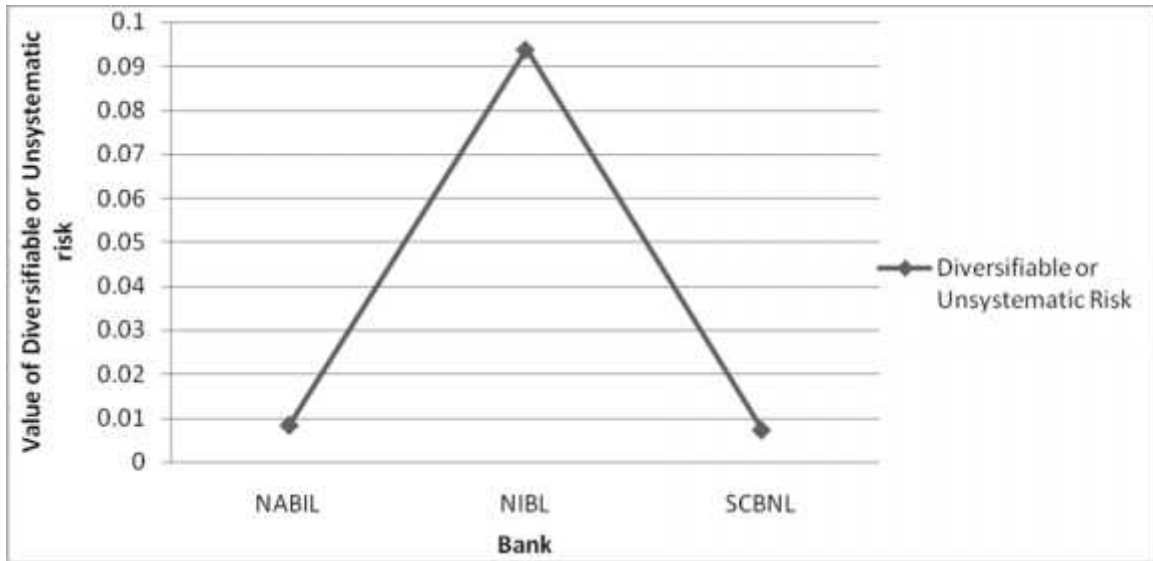
Diversifiable or Unsystematic Risk

Banks	Diversivable or Unsystematic risk
NABIL	0.0083
NIBL	0.0938
SCBNL	0.0072

Sources:-From calculation of above table 4.5, 4.7 & 4.9

We can see the Diversifiable or Unsystematic risk in the below Figure.

Figure 4.13

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Diversifiable or Unsystematic Risk of each Bank

Diversifiable or unsystematic risk of NIBL is most higher then the SCBNL and NABIL it can be diversifiable through the bank. If bank diversifiable at that time it makes more profit.

4.1.1.7.4 Comparison Diversifable and Un-diversifable risk between each Bank

Comparison Diversifiable and un diversifable risk between each bank in the below.

Table 4.22

**Comparison Diversifable and Un-diversifable risk between each Bank**

Bank	Total risk	Undiversifable (Systematic) risk	Diversifable (Unsystematic) risk
NABIL	0.1635	0.1552	0.0083
NIBL	0.1512	0.0574	0.0938
SCBNL	0.0671	0.0599	0.0072

Sources:-From calculation of above table no.4.5, 4.7 & 4.9

In the above table 4.22, we can see that the total risk of SCBNL is 0.0671 and NABIL bank is 0.1635 and NIBL is 0.1512. we have easy to say the NABIL has

more risky thatn other bank. The undiversifable risk of NABIL is also higher than SCBNL and NIBL. it is market related risk it cannot be diversifable from the bank. Divesifable risk of NIBL is higher than SCBNL and NABIL i.e. 0.0938 is greater than 0.0072 and 0083 therefore NIBL has higher diversifable risk it has diversifable through the bank. If diversifiable it can be earn more benefit for stakeholder.Undiversifiable risk is measures the market related risk it can not eliminited through the bank. In above table we can see that the Undiversifiable risk of NABIL is higher than SCBNL and NIBL.

Figure 4.14

Total Risk , Undiversifiable or Systematic Risk and Diversifiable or Unsystematic Risk of each Bank
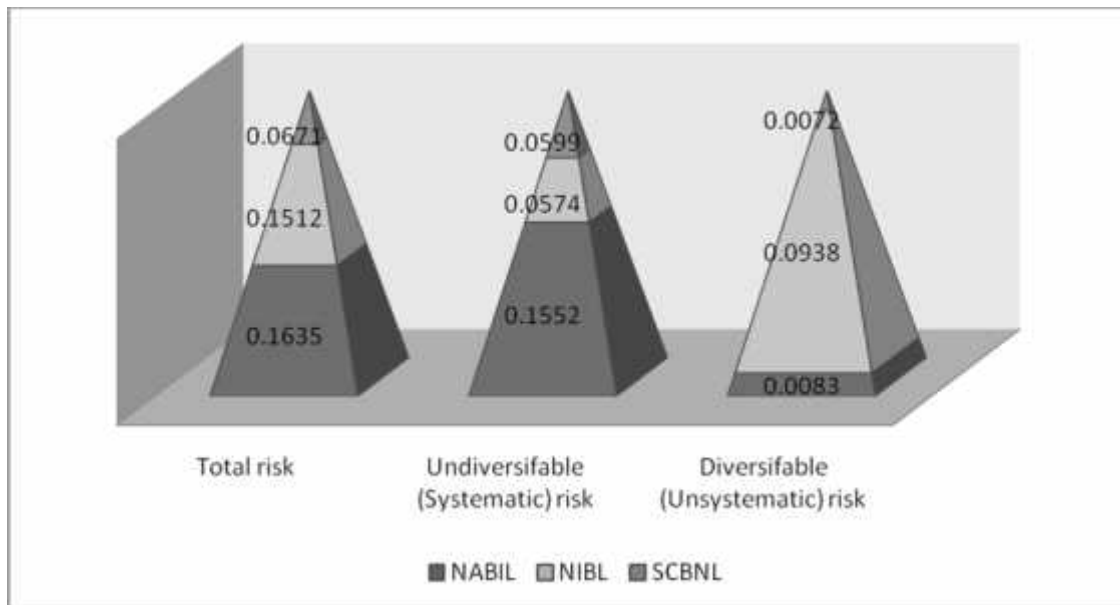
We can see in above figure 4.14 the Total risk of NABIL bank is higher than NIBL and SCBNL. SCBNL has very lower then NABIL and NIBL. NABIL has also higher of undiversifiable risk than SCBNL and NIBL but the NIBL has very high level of diversifiable risk if it reduce that risk it is going toreceived high profit.

4.2 Major Findings

The expected return is an income received on investment, ususally expressed in percentage. Expected return is simply an average return of the investment. The expected return of NABIL is highest i.e. 48.65%. The reason of expected return being so high is the effect of unrealistic annual return, issue of bonus share and increase in share closing prise. Expecte return of SCBNL is 37.75% and Expected return of NIBL is lowest i.e. 34.92% among the three sample banks.

Expected rate of return is NABIL= 0.4865, NIBL = 0.3492, SCBNL = 0.3775 is greater than Required rate of return NABIL = 0.2935, NIBL = 0.1973, SCBNL = 0.2005. So, there is Underpriced of stock at that time, investor can not sell their stock they just buy and hold strategy. They have not make more profit. If stock Required rate of return is greater than expected rate of return there is overpriced of stock at that time investor can sell there stock they get more and more profit from the stock.

Risk is the variability of returns, which is measured in terms of variance or Standard Deviation measures the total risk of returns or portfolio or assets. The assets or returns with higher standard deviation higher the risk. In terms the common stock of NABIL (0.8310 i.e.83.10%) has most risky then NIBL (0.3888 i.e.83.88%) and SCBNL (0.2591 i.e.25.91%).

Beta explains the sensitivity of the common stock with market. Higher the beta is greater the volatility and risker the common stock. According to the above Calculation beta coefficient Of NABIL (1.3333), is most higher then market so it has most volatile. SCBNL (i.e. 0.8282 and NIBL (i.e. 0.8110)) has lower then market So, there is less volatile.

Diversifiable or unsystematic risk of NIBL (0.0938 i.e. 9.38%) is most higher then the and NABIL (0.0083 i.e.o.83%), and SCBNL(0.0072 i.e.0.72%) it can be diversifiable through the bank. it is due to the an industrial dispute, discovary of new technology etc.

The coefficient of Determination measure the syatematic risk of total risk which created from market movement or macroeconomic factors. Coefficient of determination of NABIL (0.95 i.e.95%) is higher then SCBNL (0.89 i.e.89%) and NIBL (0.3796 i.e.37.96 %) represents a portion of systematic risk out of the total

risk and the remaining NABIL(0.05 i.e 5%), SCBNL(0.11 i.e.11%), NIBL(0.6204 i.e 62.04%) is the portion unique or unsystematic or non- market related risk or diversifiable risk of each bank.There is a linear relationship between the systematic risk and coefficient of Determination. As systematic risk increase the coefficient of determination also increase and vice versa.

CHAPTER - V
SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter Summarizes the whole study,Draws the conclusion from the study and forwards recommendations for further improvement. Summary is a brief introduction of Whole study. Conclusions are made based on the analysis of relevent data by using various financial and statistical tools that presents the strength, weakness, opportunities and threats of the CBs. Recommendations are presented in terms of suggestions, which are prepared based on findings and conclusion.

5.1 Summary

Commercials banks are major financial institutions, which occupy very important place in the framework of every economy. It plays vital role in capital formulation,proper utilization of collected funds and providings various types of services.CBs collect money from the public by providing sound interest and can earn profit by lending it in business organisation, industry, agricultural sectors etc. Therefore,We can say the main task of CBs is to mobilize idle resources in productive areas by collecting it from scatted sources and generating profit. Banks plays the role of intermediary role between saving and investment requirements of savers. Thus, it is clear that efficient and stable banking systems are crucial for an orderly economic growth.

Successful formulation and effective implementation of investment policy is the prime requisite for the better performance of CBs. Similarly,good investment policy has a positive impact of economy development of the country and vice versa. Bank should attract to its customers by implementing best or competitive

investment policy. It helps to increase the quality of banking services as well as volume of quality deposits and its investment in various sectors.Investment management of a bank is guided by the investment policy adopted by the bank. The investment policy of the nank helps the investment operation of the bank to be efficient and profitable by minimizing the inherent risk. Therefore, the CBS must mobilize its deposits and other funds to profitables,secured,stable and marketable sectors so that it can earn a good profit.

The investment portfolio is a collection of securities. It simply represents the practice among the investors having their funds in more than one asset. portfolio theory deals with the selection of optimal portfolio that is portfolio provides the highest possible return for any specified degree of risk or lowest possible risk for any specified return. The income or profit of the bank entirely depends upon its investment decision. Considering this fact, the bank should never invest its funds in individual security alone, which is subject to too much depends upon its investment decision. Considering this fact, the bank should never invest its funds in individual security alone,which is subject to too much depreciation and fluctuations. Banks should accept that types of securities,which are commercial, marketables, stable,liquid and profitable. A bank should not lay all its eggs on the same basket i.e. to minimize risk a bank must diversify its investment on different sectors and in different securities.

To atten the objectives of the study,various analysis such as risk and return analysis of individual assets have been done.There are twenty six CBs in Nepal but only eighteen are listed in NEPSE. Only three banks are taken as reference for the analysis.

During the research work, a brief review of literature has been conducted. For this, various textbooks and published journals have been reviewed. The required data

for the study are collected from the concerned banks, NRB, NEPSE and SEBO. According to the need and objectives, the secondary data are compiled, processed, tabulated and graphed for the better presentation.

5.2 Conclusion

The risk and return analysis is the major tools used in this study. Risk and return of the individual banks are calculated and analyzed. It is observed that this analysis can give better results only when the long range of post information is available. But as most of the banks do not have long history, the results might not explain fully what is intended to.

Expected rate of return is NABIL= 0.4865, NIBL = 0.3492, SCBNL = 0.3775 is greater than Required rate of return NABIL = 0.2935, NIBL = 0.1973, SCBNL = 0.2005. So, there is Underpriced of stock at that time, investor can not sell their stock they just buy and hold strategy. they have not make more profit. If stock Required rate of return is greater than expected rate of return there is overpriced of stock at that time investor can sell there stock they get more and more profit from the stock.

As per risk and return analysis, return of NABIL has highest then SCBNL & NIBL banks, standard deviation of NABIL is lower then NIBL and SCBNL, therefore,SCBNL has low risk taker bank among them. coefficient of variance of SCBNL is also lower than NABIL and NIBL. NIBL has higher coefficient of variance than two sample bank.

Nabil bank has beta coefficient greter than 1 which indicates, they are more sensitive to the market.Therefore these stocks are considered as the aggressive kind of stock.

All the sample banks have positive correlation with the market return. So they are highly correlated which indicates it is sensitive and no risk can be reduced by making portfolio of such assets.

Undiversifiable or systematic risk of SCBNL and NABIL is most higher then the NIBL it can not be diversifiable through the bank it is due to the market situation such as war, inflation, high interest rates, depression etc.

Diversifiable or unsystematic risk of NIBL (0.0938 i.e. 9.38%) is most higher then the and NABIL (0.0083 i.e.o.83%), and SCBNL(0.0072 i.e.0.72%) it can be diversifiable through the bank. it is due to the an industrial dispute, discovary of new technology etc.

Coefficient of Determination measure the syatematic risk of total risk which created from market movement or macroeconomic factors. Coefficient of determination of NABIL (0.95 i.e.95%) is higher then SCBNL (0.89 i.e.89%) and NIBL (0.3796 i.e.37.96 %) represents a portion of systematic risk out of the total risk and the remaining NABIL(0.05 i.e 5%), SCBNL(0.11 i.e.11%), NIBL(0.6204 i.e 62.04%) is the portion unique or unsystematic or non- market related risk or diversifiable risk of each bank.There is a linear relationship between the systematic risk and coefficient of Determination. As systematic risk increase the coefficient of determination also increase and vice versa.

5.3 Recommendations

Based on the analysis, findings and conclusion of the study, the following recommendations are suggested to overcome weakness, inefficiency and to improve the present fund mobilization and investment of CBs.

Investors must focus on the risk factors before making and investment if they want to get maximum benefit from the investment. The coefficient of variance is considered the best tool for relative measurement of risk. In the basis of C.V. It is proved that NIBL's stock is the riskiest one for the investment i.e.1.1134 whereas, the SCBNL's stock is the lowest risky i.e.0.6864. hence, it is recommended that the stock of SCBNL is the best for investment as the investor has to bear only 0.6864 risk per unit of return.

Beta Coefficient measures the sinsitivity of the stock with market. Higher the beta greater the volatility. The beta of market is always equal to 1. Stock having beta coefficient more than 1 is more risky than the market. If an investor is aggressive or risk taker, he/she can invest the market on that stocks. Stock having beta coefficient less than 1 is less risky than the market. Risk averter investor can invest in that types of common stock so, here,beta coefficient of NABIL, SCBNL and NIBL is 1.3333, 0.8282 and 0.811 respectively. it is recommended that the investor should select NIBL stock whose beta is lowests compare to other banks hence it is less risky or defensive stock.

The stock having more systematic risk have high sensitivity as such type of risk can not be minimized. So, the investors have to consider the adequate compensation for the acceptance of risk. NABIL, NIBL and SCBNL has 0.1552 , 0.0574 and 0.0599. It is clear from the study that expect NABIL stock, other banks stock has high systematic risk therefore, it is recommended that the investor should select NIBL's stock whose systematic risk is lowest as compare to other bank.

Diversifiable or Unsystematic risk diversification through the bank if it so, the bank or investor makes more benefits hence,NIBLis more diversifiable risk (0.0938 i.e.9.38%) than other bank . It is recommended that the investor should

select NIBL's stock if it reduce diversifiable risk.Investor make more profit than other bank.

there is Underpriced of stock at that time, investor can not sell their stock they just buy and hold strategy. they have not make more profit. If stock Required rate of return is greater than expected rate of return there is overpriced of stock at that time investor can sell there stock they get more and more profit from the stock.

Expected rate of return is NABIL= 0.4865, NIBL = 0.3492, SCBNL = 0.3775 is greater than Required rate of return NABIL = 0.2935, NIBL = 0.1973, SCBNL = 0.2005. So, there is Underpriced of stock we recommended that, at that time, investor can not sell their stock they just buy and hold strategy. they have not make more profit. If stock Required rate of return is greater than expected rate of return there is overpriced of stock at that time investor can sell there stock they get more and more profit from the stock.

Portfolio Standard Deviation which measures the risk is also calculated to analyze the portfolio risk. The entire portfolio's have almost same kind of risk. Portfolio standard deviation between NABIL and NIBL is highest which is 0.3566 i.e.35.66% so, it is more risky than other portfolio. But the combanitation of NABIL and SCBNL is less risky because its standard deviation is 0.1990 i.e. 19.9% so, it is recommended that if the investor wants to take minimum risk they can be invest in NABIL and SCBNL otherwise, NIBL and SCBNL is the best option for the investment.

Finally, we recommended that NEPSE needs to modernize the trading system and effective information channel. It needs to develop different programs for private investors. These programs will contribute to increase investor's rationally as well as market efficiency. The listed campanies should ooperate their actively

amoothly. They should publish their annual reports and information timelyand correctly which will help the investors to take the investment decisions on their common stocks.

Appendix - 1

Presentation and Calculation of Realized Market Return (R_m), Expected Return($\overline{R}_m$) , Standard Deviation (σ_m), and Coefficient of Variance (C.V$_m$) of Nepal Stock Exchange

FY	NI	$(R_m) = \dfrac{NEPSE_{t-1}-NEPSE_t}{NEPSE_t}$	$(R_m\text{-}\overline{R}_m)$	$(R_m\text{-}\overline{R}_m)^2$
2001/02	227.54	-	-	-
2002/03	204.86	-0.0997	-0.3318	0.1101
2003/04	222.04	0.0839	-0.1482	0.0220
2004/05	286.67	0.2911	0.0590	0.0035
2005/06	386.83	0.3494	0.1173	0.0138
2006/07	683.95	0.7681	0.5360	0.2873
Total		1.3928		0.4367
Expected return($\overline{R}_m$)				0.2321
Standard Deviation of Market (σ_m)				0.2955
Variance of market (σ^2_m)				0.0873
Coefficient of Variance of market (C.V$_m$)				1.2732
Market portfolio risk(β_m)				1

Realize Return of Market (R_m) $= \dfrac{NEPSE_{t-1}-NEPSE_1}{NEPSE_1}$

Where,

$\quad$ NEPSE $_{t-1}$ = Ending price of NEPSE

$\quad$ NEAPE$_t$ = Beginning price of NEPSE

Expected rate of return of Market $(\overline{R}_m) = \dfrac{\sum R_m}{N} = \dfrac{1.3928}{6} = 0.2321$

Standard Deviation of Market (σ_m) $= \sqrt{\dfrac{\sum(R_m-\overline{R}_m)^2}{n-1}} = \sqrt{\dfrac{\sum(R_m-R_m)^2}{n-1}}$

$\qquad\qquad = \sqrt{\dfrac{0.4367}{6-1}} = 0.2955$

Coefficient of Variance of market (CV$_m$) $= \dfrac{\sigma_m}{\overline{R}_m} = \dfrac{0.2955}{0.2321} = 1.2732$

Variance of Market (σ^2_m) $= (0.2955)^2 = 0.0873$

Market portfolio risk (β_m) = $\dfrac{Cov(R_m \cdot R_m)}{\sigma^2_m}$ = $\dfrac{\rho_{mm} \times \sigma_m \times \sigma_m}{\sigma^2_m}$ = $\dfrac{1 \times \sigma_m \times \sigma_m}{\sigma_m \times \sigma_m}$ = 1

Appendix - 2

Calculation of Realize rate of return(R), Expected rate of return(R), Standard deviation( ), Coefficient of Variance(CV), Undiversifiable risk or systematic risk or Beta risk( ), Coerrelation between market and Nabil bank return( ) and diversifiable or unsystematic risk of NABIL bank.

FY	MPS	T. Div.	$R_{NA} = \dfrac{(P_t - P_{t-1})}{P_{t-1}}$	$(R_{NA} - \overline{R}_{NA})$	$(R_{NA} - \overline{R}_{NA})^2$	$(R_m - \overline{R}_m)$	$(R_{NA} - \overline{R}_{NA})(R_m - \overline{R}_m)$
2001/02	700	294	-	-	-	-	-
2002/03	735	30	0.0929	-0.3936	0.1549	-0.3318	0.1306
2003/04	1000	50	0.4286	-0.0579	0.0034	-0.1482	0.0086
2004/05	1505	65	0.5700	0.0835	0.0070	0.0590	0.0049
2005/06	2240	70	0.5349	0.0484	0.0023	0.1173	0.0057
2006/07	5050	85	1.2924	0.8059	0.6495	0.5360	0.4320
Total			2.9188		0.8171		0.5818

Where,

NA= NABIL

MPS= Market price of share

EPS= Earning per share

T.Div. = Total Dividend

Total Dividend= Cash + % of stock dividend

$R_{NA} = \dfrac{(P_t - P_{t-1}) + D}{P_{t-1}}$

P_t = Ending price of share of NABIL

P_{t-1} = Beginning price of share Of NABIL

D = Dividend of NABIL

Expected rate of return on NABIL $(\overline{R}_{NA}) = \dfrac{\sum R_{NA}}{N}$ = $\dfrac{2.9188}{6}$ = 0.4865

Standard Deviation of NABIL Bank (σ_{NA}) $= \sqrt{\dfrac{\Sigma(R_{NA}-\bar{R}_{NA})^2}{n-1}} = \sqrt{\dfrac{0.8171}{6-1}} =$

0.4043 i.e. 40.43%

Coefficient of Variance of NABIL (CV_{NA}) $= \dfrac{\sigma_{NB}}{\bar{R}_{NB}} = \dfrac{0.4043}{0.4865} = 0.8310$

Variance of NABIL (σ^2_{NB}) $= (\sigma_{NA})^2 = (0.4043)^2 = 0.1635$

Covariance of NABIl & *Markwt return* $(Cov.(r_{NA}.r_m)) = \dfrac{\Sigma(R_{NA}-\bar{R}_{NA})(R_m-\bar{R}_m)}{n-1} =$

$\dfrac{0.5818}{6-1} = 0.1164$

Beta Coefficient of NABIL (β_{NB}) $= \dfrac{Cov.R_{NB}.R_m}{\sigma^2_m} = \dfrac{0.1164}{0.0873} = 1.3333$

Partition of Total risk of NABIL

Total risk = Systematic risk + Unsystematic

Total risk = variance of NABIL $= \sigma^2_{NB} = 0.1635$

Systematic or un-diversifiable risk $= \sigma^2_{NB} \times \sigma^2_m = (1.3333)^2 \times 0.0873 = 0.1552$

Percentage of Systematic risk $= \dfrac{\text{Systematic risk}}{\text{Total risk}} = \dfrac{0.1552}{0.1635} = 0.95$ i.e. 95%

Unsystematic or diversifiable risk = Total risk – systematic risk

$$= 0.1635 - 0.1552$$

$$= 0.0083$$

Percentage of Unsystematic risk or Diversifiable risk $= \dfrac{\text{Unsystematic risk}}{\text{Total Risk}}$

$$= \dfrac{0.0083}{0.1635} = 0.05 \text{ i.e. } 5\%$$

Coefficient of Determination $= \sigma^2_{NB,m}$

Correlation between NABIL and Market $(\rho_{NB,m}) = \dfrac{Cov.(r_{NB}.r_m)}{\sigma_{NB}.\sigma_m}$

$$= \dfrac{0.1164}{0.4043 \times 0.2955} = \dfrac{0.1164}{0.1195} = 0.9741$$

Coefficient of Determination, $(\sigma^2_{NB,m}) = (\sigma_{NB,m})^2 = (0.9741)^2 = 0.95$

Or,

Coefficient of Determination (^{2}NB, m) $= \dfrac{\text{Systematic risk}}{\text{Total risk}} = \dfrac{0.1552}{0.1635} = 0.95$

Therefore, Percentage of Systematic risk = 95% i.e. Coefficient of Determinants measures the systematic risk

Appendix - 3

Calculation of Realize rate of return(R), Expected rate of return(R), Standard deviation( ), Coefficient of Variance(CV), Undiversifiable risk or systematic risk or Beta risk( ), Coerrelation between market and NIBL bank return( ) and diversifiable or unsystematic risk of NIBL.

FY	MPS	T. Div.	R_{NI}	$(R_{NI} - \bar{R}_{NI})$	$(R_{NI} - \bar{R}_{NI})^2$	$(R_m - \bar{R}_m)$	$(R_{NI} - \bar{R}_{NI})(R_m - \bar{R}_m)$
2001/02	760	-	-	-	-	-	-
2002/03	795	282	0.4171	0.0679	0.0046	-0.3318	-0.0225
2003/04	940	20	0.2075	-0.1417	0.0201	-0.1482	0.0210
2004/05	800	15	-0.1330	-0.4822	0.2325	0.0590	-0.0284
2005/06	1260	12.58	0.5907	0.2415	0.0583	0.1173	0.0283
2006/07	1729	807.212	1.0129	0.6637	0.4405	0.5360	0.3557
Total			2.0952		0.756		0.3541

Where,

NI= NIBL

MPS= Market price of share

EPS= Earning per share

T.Div. = Total Dividend

Total Dividend= Cash + % of stock dividend

$$R_{NI} = \dfrac{(P_t - P_{t-1}) + D}{P_{t-1}}$$

P_t = Ending price of share of NIBL

P_{t-1} = Beginning price of share Of NIBL

D = Dividend of NIBL

Expected rate of return on NIBL $(\bar{R}_{NI}) = \frac{\Sigma R_{NI}}{N} = \frac{2.0952}{6} = 0.3492$

Standard Deviation of NIBL $(\sigma_{NI}) = \sqrt{\frac{\Sigma(R_{NI}-\bar{R}_{NI})^2}{n-1}} = = \sqrt{\frac{0.756}{6-1}} = 0.3888$

Coefficient of Variance of NIBL $(CV_{NI}) = \frac{\sigma_{NI}}{\bar{R}_{NI}} = \frac{0.3888}{0.3492} = 1.1134$

Variance of NIBL $(\sigma^2_{NI}) = (\sigma_{NI})^2 = (0.3888)^2 = 0.1512$

Covariance of NIBL & Markwt return $(Cov.(r_{NI}.r_m)) = \frac{\Sigma(R_{NI}-\bar{R}_{NI})(R_m-\bar{R}_m)}{n-1} = \frac{0.3541}{6-1}$

$$= 0.0708$$

Beta Coefficient of NIBL $(\beta_{NI}) = \frac{Cov.R_{NI}.R_m}{\sigma^2_m} = \frac{0.0708}{0.0873} = 0.811$

Partition of Total risk of NIBL

Total risk= Systematic risk + Unsystematic

Total risk = variance of NIBL = $\sigma^2_{NI} = 0.1512$

Systematic or un-diversifiable risk = $\sigma^2_{NI} \times \sigma^2_m = (0.811)^2 \times 0.0873 = 0.0574$

Percentage of Systematic risk = $\frac{Systematic\ risk}{Total\ risk} = \frac{0.0574}{0.1512} = 0.3796$ i.e.37.96%

Unsystematic or diversifiable risk = Total risk – systematic risk

$$= 0.1512 - 0.0574$$

$$= 0.0938$$

Percentage of Unsystematic or Diversifiable risk $= \frac{Unsystematic\ risk}{Total\ Risk}$

$$= \frac{0.0938}{0.1512} = 0.6204\ i.e.62.04\%$$

Coefficient of Determination = $\rho^2_{NI,\ m}$

Correlation between NIBL and Market $(\rho_{NB,m}) = \frac{Cov.(r_{NB},r_m)}{\sigma_{NB} \times \sigma_m}$

$$= \frac{0.0708}{0.3888 \times 0.2955} = \frac{0.0708}{0.1149} = 0.6161$$

Coefficient of Determination,$(\rho^2_{NI,m}) = (\rho_{NB,m})^2 = (0.6161)^2 = 0.3796$

Or

Coefficient of Determination ($r^2_{NI, m}$) = $\dfrac{\text{Systematic risk}}{\text{Total risk}}$ = $\dfrac{0.0574}{0.1512} = 0.3796$

Coefficient of Determinants measures the systematic risk.

Appendix - 4

Calculation of Realize rate of return(R), Expected rate of return(R), Standard deviation( ), Coefficient of Variance(CV), Undiversifiable risk or systematic risk or Beta risk( ), Coerrelation between market and SCBNL return( ) and diversifiable or unsystematic risk of SCBNL.

FY	MPS	T. Div.	R_{SC}	$(R_{SC} - \overline{R}_{SC})$	$(R_{SC} - \overline{R}_{SC})^2$	$(R_m - \overline{R}_m)$	$(R_{SC}-\overline{R}_{SC})$ $(R_m-\overline{R}_m)$
2001/02	1550	100	-	-	-	-	-
2002/03	1640	100	0.1226	-0.2549	0.0650	-0.3318	0.0846
2003/04	1745	344.5	0.2741	-0.1034	0.0107	-0.1482	0.0153
2004/05	2345	110	0.4069	0.0294	0.0009	0.0590	0.0017
2005/06	3775	120	0.6610	0.2835	0.0804	0.1173	0.0333
2006/07	5900	895.5	0.8001	0.4226	0.1786	0.5360	0.2265
Total			2.2647		0.3356		0.3614

Where,

SC = SCBNL

MPS= Market price of share

EPS= Earning per share

T. Div. = Total Dividend Total Dividend= Cash + % of stock dividend

$$R_{SC} = \dfrac{(P_t - P_{t-1}) + D}{P_{t-1}}$$

Expected rate of return on SCBNL($\overline{R}_{SC}$) = $\dfrac{\Sigma R_{SC}}{N}$ == $\dfrac{2.2647}{6} = 0.3775$

Standard Deviation of SCBNL (σ_{SC}) $= = \sqrt{\dfrac{\Sigma(R_{SC}-\bar{R}_{SC})^2}{n-1}} = = \sqrt{\dfrac{0.3356}{6-1}} = 0.2591$

Coefficient of Variance of SCBNL (CV_{SC}) $= \dfrac{\sigma_{SC}}{\bar{R}_{SC}} = \dfrac{0.2591}{0.3775} = 0.6864$

Variance of SCBNL ($\sigma^2{}_{SC}$) $= (\sigma_{SC})^2 = (0.2591)^2 = 0.0671$

Covariance of SCBNL & $Markwt\ return$ $\left(Cov.(r_{SC}.r_m)\right) = \dfrac{\Sigma(R_{SC}-\bar{R}_{SC})(R_m-\bar{R}_m)}{n-1}$

$$= \dfrac{0.3614}{6-1} = 0.0723$$

Beta Coefficient of SCBNL (β_{SC}) $= \dfrac{Cov.R_{SC}.R_m}{\sigma^2{}_m} = \dfrac{0.0723}{0.0873} = 0.8282$

Partition of Total risk of SCBNL

Total risk = Systematic risk + Unsystematic

Total risk = variance of SCBNL $= \sigma^2{}_{SC} = 0.0671$

Systematic or un-diversifiable risk $= \sigma^2{}_{SC} \times \sigma^2{}_m = (0.8282)^2 \times 0.0873 = 0.0599$

Percentage of Systematic risk $= \dfrac{Systematic\ risk}{Total\ risk} = \dfrac{0.0599}{0.0671} = 0.89$ i.e. 89%

Unsystematic or diversifiable risk = Total risk – systematic risk = 0.0671– 0.0599 = 0.0072

Percentage of Unsystematic or diversifiable risk $= \dfrac{Unsystematic\ risk}{Total\ risk} = \dfrac{0.0072}{0.0671}$

$$= 0.11\ \text{i.e. } 11\%$$

Coefficient of Determination $= \sigma^2{}_{SC,\,m}$

Correlation between SCBNL and Market ($\rho_{SC,m}$) $= \dfrac{Cov.(r_{SC}.r_m)}{\sigma_{SC}.\sigma_m} = \dfrac{0.0723}{0.2591 \times 0.2955}$

$$= \dfrac{0.0723}{0.0766} = 0.9439$$

Coefficient of Determination,($\sigma^2{}_{SC,m}$) $= (\sigma_{SC,m})^2 = (0.9439)^2 = 0.89$

Or

Coefficient of Determination ($\sigma^2{}_{SC,\,m}$) $= \dfrac{Systematic\ risk}{Total\ risk} = \dfrac{0.0599}{0.0671} = 0.89$

Appendix 5

Calculation Required Rate of Return

Bank	R_f	E (r)	RRR	Evaluation	Remarks
NABIL	0.0479	0.4865	0.2935	Underpriced	Expected rate of return > Required rate of return.
NIBL	0.0479	0.3492	0.1973	Underpriced	Expected rate of return > Required rate of return.
SCBNL	0.0479	0.3775	0.2005	Underpriced	Expected rate of return > Required rate of return.

R_f = Risk free rate of return= 0.0479 (4.79%)

Average of 5 years weighted average return of Treasury bills 364 days.

(Source NRB website Economic Bulletin)

$RRR = R_f + (\overline{R}_m - R_f) \; _j$

Where,

RRR= required rate of return of stock

R_f = Risk free rate

$\overline{R}_m$ = Expected rate of return of market

$_j$ = beta coefficient of stock

RRR of NABIL = $0.0479 + (0.2321 - 0.0479) \times 1.3333 = 0.2935$

RRR of NIBL = $0.0479 + (0.2321 - 0.0479) \times 0.811 = 0.1973$

RRR of SCBNL = $0.0479 + (0.2321 - 0.0479) \times 0.8282 = 0.2005$

Appendix - 6

Calculation Covariance,Correlation,Proportion of the stocks, expected rate of return and Standard deviation , Beta of the portfolio of Stock NA and NI

FY	$(R_{NA} - \overline{R}_{NA})$	$(R_{NI} - \overline{R}_{NI})$	$(R_{NA}-\overline{R}_{NA})(R_{NI}-\overline{R}_{NI})$
2001/02	-	-	-
2002/03	-0.3936	0.0679	-0.0267
2003/04	-0.0579	-0.1417	0.0082
2004/05	0.0835	-0.4822	-0.0403
2005/06	0.0484	0.2415	0.0117
2006/07	0.8059	0.6637	0.5349
Total			0.4878
Portfolio Weight	Stock NA= 0.4485		Stock NI = 0.5515
Covariance			0.0976
Correlation			0.6209
Expected return			0.4108
Standard Deviation			0.3566
Beta			1.0453

Portfolio weight of Stock NA $(W_{NA}) = \dfrac{\sigma^2_{NI} - COV\ R_{NA}.R_{NI}}{\sigma^2_{NA} + \sigma^2_{NI} - 2\ COV\ R_{NA}.R_{NI}}$

$$= \frac{0.1512 - 0.0976}{0.1635 + 0.1512 - 2 \times 0.0976} = \frac{0.0536}{0.3147 - 0.1952} = 0.4485$$

Portfolio weight of stock NI $(W_{NI}) = 1-W_{NA} = 1- 0.4485 = 0.5515$

Covariance between stock NA and NI $(COV\ NA.NI) = \dfrac{(R_{NA}-R_{NA})(R_{NI}-R_{NI})}{n-1}$

$$= \frac{0.4878}{6-1} = 0.0976$$

Correlation Between stock NA and NI$(\rho NA.NI) = \dfrac{Cov.R_{NA}.R_{NI}}{\sigma_{NA} \times \sigma_{NI}} = \dfrac{0.0976}{0.4043 \times 0.3888}$

$$= 0.6209$$

Expected portfolio return $E\ (r_P) = W_{NA} \times E\ (R_{NA}) + W_{NI} \times E\ (R_{NI})$

$$= 0.4485 \times 0.4865 + 0.5515 \times 0.3492$$

$$= 0.4108\ i.e.41.08\%$$

Standard Deviation of Portfolio (σ_p)

$$= \sqrt{W^2_{NA} \times \sigma^2_{NA} + W^2_{NI} \times \sigma^2_{NI} + 2\ COV\ R_{NA}\ R_{NI} W_{NA} \times W_{NI}}$$

$$= \sqrt{(0.4485)^2 \times 0.1635 + (0.5515)^2 \times 0.1512 + 2 \times 0.0976 \times 0.4485 \times 0.5515}$$

$$= \sqrt{0.0329 + 0.0460 + 0.0483}$$

$$= \sqrt{0.1272}$$

$= 0.3566$ i.e. 35.66%

Beta Portfolio (β_p) $= W_{NA} \times \beta_{NA} + W_{NI} \times \beta_{NI} = 0.4485 \times 1.3333 + 0.5515 \times 0.8110$

$= 1.0453$

Appendix - 7

Calculation Covariance,Correlation,Proportion of the stocks, expected rate of return and Standard deviation , Beta of the portfolio of Stock SC and NI

FY	$(R_{SC} - \bar{R}_{SC})$	$(R_{NI} - \bar{R}_{NI})$	$(R_{SC} - \bar{R}_{SC})(R_{NI} - \bar{R}_{NI})$
2001/02	-	-	-
2002/03	-0.2549	0.0679	- 0.0173
2003/04	-0.1034	-0.1417	0.0147
2004/05	0.0294	-0.4822	- 0.0142
2005/06	0.2835	0.2415	0.0685
2006/07	0.4226	0.6637	0.2805
Total			0.3322
Porpotion of Stock	Wsc = 0.9918		W_{NI}= 0.0082
Covariance			0.0664
Correlation			0.6592
Expected return			0.3773
Standard Deviation			0.2579
Beta			0.8281

Proportion of Sock SC (W_{SC}) = $\dfrac{\sigma^2_{NI} - COV R_{SC}.R_{NI}}{\sigma^2_{SC} + \sigma^2_{NI} - 2 COV R_{SC}.R_{NI}}$ = $\dfrac{0.1512 - 0.0664}{0.0671 + 0.1512 - 2 \times 0.0664}$

$= \dfrac{0.0848}{0.0855} = 0.9918$

Proportion of Stock NI (W_{NI}) = 1-W_{SC}=1- 0.9918 = 0.0082

Covariance between stock SC and NI (COV SC.NI) = $\dfrac{(R_{SC} - R_{SC})(R_{NI} - R_{NI})}{n-1}$

$= \dfrac{0.3322}{6-1} = 0.0664$

Correlation Between stock SC and NI(ρSC. NI) = $\dfrac{Cov.R_{SC}.R_{NI}}{SC \times \sigma_{NI}}$ = $\dfrac{0.0664}{0.2591 \times 0.3888}$

$= 0.6592$

Expected portfolio return E (r_P) = $W_{SC} \times E(R_{SC}) + W_{NI} \times E(R_{NI})$

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$= 0.9918 \times 0.3775 + 0.0082 \times 0.3492 = 0.3773$ i.e.37.73%

Standard Deviation of Portfolio (σ_p)

$$= \sqrt{W^2_{SC} \times \sigma^2_{SC} + W^2_{NI} \times \sigma^2_{NI} + 2\ COV\ R_{SC}\ R_{NI} \times W_{SC} \times W_{NI}}$$

$$= \sqrt{(0.9918)2 \times 0.0671 + (0.0082)2 \times 0.1512 + 0.0664 \times 0.9918 \times 0.0082}$$

$$= \sqrt{0.0660 + 0.00001 + 0.0005}$$

$= 0.2579$

Beta Portfolio (β_p) $= W_{SC} \times \beta_{SC} + W_{NI} \times \beta_{NI} = 0.9918 \times 0.8282 + 0.0082 \times 0.8110 = 0.8281$

Appendix - 8

Calculation Covariance, Correlation, Proportion of the stocks, expected rate of return and Standard deviation, Beta of the portfolio of Stock NA and NI

FY	$(R_{NA} - \overline{R}_{NA})$	$(R_{SC} - \overline{R}_{SC})$	$(R_{NA}-\overline{R}_{NA})(R_{SC}-\overline{R}_{SC})$
2001/02	-	-	-
2002/03	-0.3936	-0.2549	0.1003
2003/04	-0.0579	-0.1034	0.0060
2004/05	0.0835	0.0294	0.0025
2005/06	0.0484	0.2835	0.0137
2006/07	0.8059	0.4226	0.3406
Total			0.4631
Portfolio Weight of Stock NA and SC	W_{NA}= -0.5617	W_{SC} = 1.5617	
Covariance			0.0926
Correlation			0.8840
Expected return			0.3163
Standard Deviation			0.1990
Beta			0.5445

Proportion of stock NA $(W_{NA}) = \dfrac{\sigma^2_{SC} - COV R_{NA}.R_{SC}}{\sigma^2_{NA} + \sigma^2_{SC} - 2 COV R_{NA}.R_{SCI}}$

$$= \frac{0.0671 - 0.0926}{0.1635 + 0.0671 - 2 \times 0.0926} = \frac{-0.0255}{0.0454} = -0.5617$$

Proportion of Stock SC (W_{SC}) = 1-W_{NA} = 1- (-0.5617) = 1.5617

Covariance between stock NA and SC (COV NA.SC) $= \dfrac{(R_{NA}-R_{NA})(R_{SC}-R_{SC})}{n-1} =$

$$\frac{0.4631}{6-1} = 0.0926$$

Correlation Between stock NA and SC$(\rho_{NA.SC}) = \dfrac{COV.R_{NA}.R_{SC}}{\sigma_{NA} \times \sigma_{SC}} = \dfrac{0.0926}{0.4043 \times 0.2591}$

$$= 0.8840$$

Expected portfolio return E $(r_P) = W_{NA} \times E (R_{NA}) + W_{SC} \times E (R_{SC})$

$= -0.5617 \times 0.4865 + 1.5617 \times 0.3775 = 0.3163$ i.e.31.63%

Standard Deviation of Portfolio (σ_p)

$$= \sqrt{W^2_{NA} \times \sigma^2_{NA} + W^2_{SC} \times \sigma^2_{SC} + 2 \ COV \ R_{NA} R_{SC} \times W_{NA} \times W_{SC}}$$

$$= \sqrt{(-0.5617)^2 \times 0.1635 + (1.5617)^2 \times 0.0617 + 2 \times 0.0926 \times (-0.5617) \times 1.5617}$$

$$= \sqrt{0.0516 + 0.1505 - 0.1625}$$

$= 0.1990$

Beta Portfolio (β_p) $= W_{NA} \times \beta_{NA} + W_{SC} \times \beta_{SC}$

$\qquad\qquad = - 0.5617 \times 1.3333 + 1.5617 \times 0.8282$

$\qquad\qquad = 0.5445$

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