Portfolio Analysis of commercial Banks

[SBL, NMB, BOK, NIB]

By
Kalpana Rai
Post Graduate Campus
Faculty of Management
T.U. Reg. No. 7-2-426-5-2005

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DECLARATION

I hearty declare that the thesis 'Portfolio Analysis of commercial Banks' Submitted to post graduate campus, faculty of management, Tribhuwan University is my original work done for the partial fulfillment of the requirements for the master of business studies [MBS] under the supervision of Mrs. Bandana Jain, lecturer post Graduate Campus , Biratnagar.

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Kalpana Rai

Researcher

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Kalpana Rai
Researcher

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ABBREVIATION USED IN THIS STUDY

AM	Arithmetic Mean
CV	Coefficient of variation
CAPM	Capital asset pricing model
CGY	Capital Gain Yield
CML	Capital market line
COV	Coefficient of Variation
DY	Dividend Yield
DPS	Dividend per share
FY	Fiscal Year
GM	Geometric mean
HPR	Holding period Return
i.e.	That is
JVB	Joint venture bank
Ltd	Limited
MPS	Market price per share
NEPSE	Nepal stock Exchange
NIDC	Nepal industrial Development Corporation
NO	Number
NRB	Nepal Rastra Bank
Pvt	Private
RBB	Rastriya Banijya Bank
RRR	Required rate of return
Rs.	Rupees
SEBON	Security exchange board of Nepal
SML	Security market line
T-Bill	Treasury bill
Var	Variance
WWW	World Wide Web
%	Percentage

CHAPTER-ONE

1. Introduction

1.1 background of the study

For economic development of each and every country, the economic situation is very important. The possibility of overall development depends upon economic condition of the country. Economic growth facilitates the economic development in the country. Nepal is the country whose pace of economic growth is very slow and the economists of the country are making enough ender ours to accelerate economic growth.

Financial institutions play an important role in the economic growth and the development of the country. A tremendous growth in the number of financial institutions in Nepal has been witnessed in the last two decades. The history of modern banking system in Nepal began in 1937 a.d. with establishment of Nepal bank limited (nbl) as the first commercial bank in the Nepal. after the establishment of Nepal rastra bank (nrb), Nepal witnessed a systematic development of the financial system. After the adoption of liberalized economic policies during the 1980s, financial institutions expanded rapidly in Nepal. Financial institutions help to mobilize resources, enhance financial saving, raise productive investment and facilitate domestic and international payments. Financial institutions help to mobilize the freeze and scattered saving of the society and play an intermediary role to make an investment of the collection fund in different productive sectors. They help to reduce poverty, raise employment opportunity and raise people's life stand and by increasing the activities of trade and industries.

In almost all the developing country, like Nepal, banking is mere a simple deposit and lending centre. Only few people know the significance of bank activities. This is mainly due to the large gap between the rich and the poor people. Thus, the development of banking activities like mobiliging people saving in productive sector, better use of money etc. people must be aware of the fact that in any plan of economic development banking plays a strategic importance for development.

The Nepalese financial sector is composed of banking and non-banking sectors. The banking sector is comprised of mrb and commercial banks. The non-banking sector consists of development banks, micro credits development banks , finance companies, co-operative, financial institutions, non-govt organizations(ngos) performing commited banking activities, other financial institution include insurance companies, employee provident fund, citizen investment trust, postal saving offices and Nepal stock exchange.

In Nepal, the buying and selling activities of financial securities(mainly stock) is conducted in Nepal stock exchange(nepse). The development of stock market in nepal started with the establishment of commercial banks in the country besides the informal sectors, the listing of shares in the stock exchange center(sec) and their trading in the stock market is a recent phenomena.

Formally stock market development started only after the establishment of securities exchange center in 1984, which was later renamed as Nepal stock exchange (nepse) in 1990.

Therefore, the commercial development of the country depends upon a well equipped and proper banking system. This helps for the evaluation and analysis of their working capital management. They can efficiency and effectively complete with their rivals and retain their customers and share holders.

This study is concerned with the development of commercial banking sector with the proper management in portfolio analysis and the latest data and the information are collected and the work has been performed from the reliable sources.

1 r.s. pradan, "stock market –behaviour in a small capital market: a case study of Nepal," the Nepalese management review, 1993, vol.9. no.1.

1.2 histories of commercial and joint venture banks in Nepal

Commercial banks are the most important banking sector which has promoted the country in the development and growth of its economy. "Commercial banks means a bank authorized to receive both demand and time deposits, to engage in trust service, to issue letter of credit, to rent time deposit boxes, and to provide similar services."2

Commercial banks are established to improve people's economic welfare and facility provide loan to the agriculture, industries and commerce, and to offer banking services to the people and the country. "commercial bank is the cooperation which accepts demand deposits subject to cheque and makes short term loans to business enterprises regardless of the scope of its other sources."3

Commercial banks are directly related with the people and instructions. Commercial banks are established, to accelerate common people's economic welfare and facility, to make available of loan to the agriculture, industry and commerce to provide the banking services to the public and the state. The salient features of commercial banks lies, infect not in their assets, but in their liabilities. Commercial banks are the largest and most diversified intermediaries and commercial banks records the economic pulse of the economy. The size and composition of their transactions mirror the economic happening in the country. They are as essential instrument of accelerated growth in the country. They are as essential instrument of accelerated growth in a developing economy. By mobilizing community savings and diverting them into productive channels. Commercial banks expand the tempo and appreciate the value of aggregate economic activity in the economy. In Nepal, commercial banking started with the establishment of Nepal bank limited under the Nepal bank act(15%) and remaining by public(49%). Nepal bank ltd was established in 1994 b.s. thus,

2. according to banking new dictionary
3. American institution of banking principal of banking operation USA 1992, p-1.

the history of banking system came in the country through the establishment of Nepal Rasta bank ltd in1994 b.s. the public sector tejarath

system used to function like bank. Under this system loan were given to people against adequate securities of ornaments. This system also granted loans to government employees. Such loans were repayable in installments. Thus, the tejarans system may be apply considered as the foundation of modern banking system.

1.3 brief profile commercial banks taken under study

1.3.1 Siddhartha banks ltd (SBL)

Siddhartha bank established in 2002 and promoted by prominent personalities of Nepal, today stands as one of the consistently growing banks in Nepal. While the promoters come from a wide range sectors, they posses immense business acumen and share their valuable experience towards the betterment of banks.

Within a short span of time, Siddhartha bank has been able come up with a wide range of products and services that best suits in clientele sbl has been posting growth in its portfolio size and profitability consistently since the beginning of its operations. The mgmt of the bank has been become thoroughly professional.

SBL has been able to gain significant trust of the customers and all other stockholders to become one of the most promising commercial banks in the country in less than 10yrs of its operation. The bank is fully committed towards customer's satisfaction. The range and scope of modern banking products and services the bank has been providing is an example to its commitment towards customer satisfaction. It is this this commitment that has helped the bank register quantum growth every year. And the bank is confident and helpful that it will be able to retain this trust and move even further towards its mission of becoming one of the leading banks of the industry.

SBL runs with a vision to be financially sound, operationally efficient and keep abreast with technological development. The following is the capital structure of SBL

Authorized capital - Rs. 3000 million
Issued capital – Rs. 1571.13 million

paid up capital - Rs. 1571.13 million

1.3.2 NMB bank ltd(NMB)

NMB bank licensed as 'A' class financial institution by nrb in may 2008 has been operating in Nepalese financial market for over fifteen years and is one of the leading commercial banks in the banking industry. Since its inception, the bank has been continuously endearing to win the trust of its customer which has resulted to ever increasing customer base and more importantly attained customer's delight through its different products and services.

The following is the capital structure of NMB.

*Authorized capital – Rs. 2000 million

*issued capital - Rs. 2000 million

*paid up capital – Rs. 2000 million

1.3.3 Bank of Kathmandu ltd (BOK)

Bok ltd has become a prominent name in the Nepalese banking sector. Bok started its operation in March 1995 with the objective to stimulate the Nepalese economy and take it to newer heights. Bok also aims to facilitate the Nation's economy and to become more competitive globally.

Bok has today a landmark in the Nepalese banking sector by being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public.

The following is the capital structure of BOK.

*authorized capital – Rs. 2000 million

*issued capital – Rs. 1359.48 million

*paid up capital -Rs. 1604.19 million

1.3.4 Nepal investment bank ltd (NIB)

Nepal investment bank ltd (NIBL), previously Nepal Indosuez bank ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partners (holding 50% of the capital of NIBL) was credit Agricore Indosuez, a subsidiary of one of the largest banking group in the world.

With the decision of credit Agricore Indosuez to divest, a group of companies comprise of bankers, professional, industrialists and businessman, had acquired on April 2002 the 50% share holding of credit Agricore Indosuez in Nepal Indosuez bank ltd.

The name of the bank has been changed to Nepal investment bank ltd. Pon approval of bank's annual general meeting, nrb and company register's office with the following share holding structure.

a) Group of companies – 50%
b) Rastriya banijya bank - 15%
c) Rastriya bema sansthan – 15%
d) General public – 20%

The following is the capital structure of nib

a) Authorized capital – Rs. 4000 million
b) Issued capital – Rs. 2409.10 million
c) Paid up capital – Rs. 2409.10 million

1.4 Focus of the study

The main focus of this study is to know the required rate of return to find risk and return behavior of the stock and about the creation of portfolio. The creation of portfolio by which an investor can safeguard his/her investment. The study is to show how an effective portfolio can reduce the risk. People prefer less risk to more return i.e they try to ignore risk, which is not possible.

According to this study portfolio refers to investment of funds in two or more than two securities in a way that loss occurred in one security can

be covered by another securities. The relationship between the risk and return is a topic of major concerned among investor and analyst. The relationship is very critical and difficult to understand. The investor suffers more for not having the sound knowledge about the risk and return. People are more profit motivated but they do not show much concentration in risk automatically more return means more risk. In such a case, creation of portfolio helps in reducing the risk.

The basic principles of portfolio selection are that the investor tries to increase the expected return on their portfolio and to reduce the standard deviation of that return. A portfolio that gives the highest expected return for a given standard deviation or the lowest standard deviation for a give expected return for a given expected return is known as an efficient portfolio. To work out which portfolios are efficient an investor must be able to state the expected return and standard deviation of each stock and the degree of correlation between each pair of stocks. Investors who are restricted to hold common stock should choose efficient portfolios that suit their attitudes of risk. But investors who can also borrow and lend at the risk free rate of interest should choose the best common stock portfolio regardless of their attitudes to risk. [4]

Other theory and tools are also used to support the portfolio theory. It is believed that this study will help many investors to know how they should use their money while investing in financial securities.

1.5 Statement of the problem

In every research, there are some problems. The research is done as the solution to the problem.

4. R.A. Brealey and S.C myers, principles of corporate finance [12th ea].Tata mc graw Hill publishing company, New Delhi,2005,P.210.

Hence, we can say that problems gives raise to the necessity of research commercial banks are operationally more efficient having better performance while comparing with local banks, but they face many problems. The main focus of the statement of the problem is stressed

commercial banks; SBL, NMB, BOK and NIB. All the four men honed jvbs have been competing in the same economic environment and financial market. Similarly, all the four banks are operating successfully under computerized system to meet the growing competition in banking system.

1.6 bjective of the study

The primary objective of the study is to identify the existing problem of the working capital management of selected different commercial banks. Moreover, following are the specific objective of the study.

- To analyze the investment portfolio of the selected commercial banks.
- To know the required rate of return of a stock of the selected commercial banks.
- To find the sensitivity of the stock of the sample banks.
- To find the risk and return behavior of the stock and other relevant variables which are very important in making decisions to invest in the stock.
- To compare between the sample banks risk and return and market risk and return.
- To recommend suggestion about portfolio management to concerned authority is making their policy decision relation to risk and return behavior of common stock.
- To analyze the significant of beta in CAPM analysis.

1.7 Need and importance of the study

This study is important to various groups but is particularly directed to a certain groups of people and the organizations. The commercial banks are gaining a wide popularity through their efficient management and professional services and playing increment role in the development of the economy.

The study of the portfolio analysis of Siddhartha bank ltd, NMB bank ltd, Bank of Kathmandu ltd and Nepal investment bank ltd are beneficial to the management to the shareholders and to the outsiders. This study will be helpful to go deeply into the various matters as to why the

performance of their bank is better or worse than other joint venture banks. The management will be able to find the loose areas and gaps, which can be corrected in near future.

For the shareholders the portfolio analysis of this bank are also important to know how these funds are utilizing and to what extent they are gaining. The study will thus, help to identify the productivity of their scarce sources.

The outsiders such as depositors, investors, stock brokers, debtors, competitors, merchant bankers, investment bankers, etc. are also made aware whether to deposit or not? To finance or not?

Thus along the above group the policy maker will also be beneficial from this study. They are officials of government security exchange board, Nepal stock Exchange [NEPSE],Tax office.

1.8 Limitations of the study

The limitations of the study are as follows:-

a) The risk of the companies is measured by standard deviation of the companies.

b) The reliability of conclusion of the study is based upon the accuracy of secondary data.

c) Only short listed companies are taken as population of study which are listed in Nepal stock Exchange (NEPSE).

d) The study has been done covering the five years data as available from the website of NEPSE.

e) Some of the data are taken on verbal information of the management of the company. The validity and confidence of the data depends on the faithful and trust worthiness.

f) Time and resources are also the limitation of their study.

g) The unavailability of latest data for study in the website of NEPSE.

1.9 Organization of the study

The study comprises five chapters: each devoted to some aspects of the study of portfolio of Nepalese commercial Banks namely Siddhartha bank ltd, NMB bank ltd, Bank of Kathmandu ltd and Nepal investment bank ltd. Each chapter contains:

Chapter one: Introduction

Chapter two: Review of literature

Chapter three: Research methodology

Chapter four: Presentation and analysis of data

Chapter five: Summary conclusion and Recommendation

The first chapter includes the introductory part of this study as already mentioned which describes the background, brief profile on sample of commercial banks, focus of the study, statement of problem, objective of the study, significance of the study, limitation of the study and organization of the study.

The second chapter describes theoretical analysis and brief review of related and pentene and literature available. It includes a discussion on conceptual framework and review of the major studies.

The third chapter describes the research methodology enjoyed in this study. This describes the matter and source of data, population and sample, mode of analysis, meaning and definition of statistical tools.

The fourth chapter deals with the presentation and analysis of secondary data by using various analytical tools.

The fifth and final chapter states summary, conclusion and major findings of this study.

Finally, bibliography and appendices have also been included in the last part of the study.

CHAPTER –TWO

2. REVIEW OF LITERATURE

2.1 Introduction

The second chapter attempts to review the literature on portfolio analysis. So regarding this, an attempt is being made to empire the ideas and facts from different books and journals. Also before analyzing the literature on portfolio analysis, this chapter also attempts to focus on the theories of risk and return and capital asset pricing model. Literature review is basically a "stock taking" of available literature in one's field of research.[5]

Research is a continuous process and hence the procedures and the findings may change due to continuous research. For getting the power and ability of analysis and interpretation of data, a research must review the literature about his field of study.

2.2 conceptual frame work (theoretical review)

The general concepts of the share and other related catters is important too because before getting into the core subject matter of portfolio analysis. Following subsection to this will be employing the conceptual matters.

2.2.1 Common stock

Common stock represents equity or an ownership position in a corporation. It is a residual claim in the sense that creditors and preferred stock holders must be paid as scheduled before common stock holders can receive any payments. In bank equity common stock holders are in principle entitled to any value remaining after all other claimers have been satisfied. (however in practice courts sometimes violates this principle)

The market value of a share is the price at which it trades in the stock market.

5. H.K. wolf and P.R. pant, A hand book for social science research and Thesis writing, Buddha Academic Enterprises, Kathmandu, 2000, P-30.

It is generally based on expectation about the performances of the company in general and the company in particular. Ordinary shares of all companies may not be traded of all companies may not be available.[6]

The great advantage of the corporate form of organization is the limited liability of its owners. Common stocks are generally fully paid and non assessable, meaning that common stock holders may lose their initial investment, but not more. That is, if the corporation fails to meet its obligations: the stock holders cannot be forced to give the corporation the funds that are needed the pay of the obligation.

Holders of common stock have no guarantee of receiving any periodic distributions of earnings in the form of dividends, nor are they guaranteed anything the event of liquidation. Common stocks holders are likely to receive nothing as a result of bank raptly proceeding.

2.2.2 Securities

Securities are normally the shares, debentures, preferred stocks, warrant convertibles or any other financial certificates issued by the finance companies to the general public securities are the legal representation of the right to receive prospective future benefits under stated condition. The investment environment encompasses the kinds of marketable securities that exist and where and how they are bought and sold.

These certificates are issued at a certain price one called par value and are transferable from one person to another. In simple way, we can understand securities as the promissory paper that the company gives to the investors after receiving certain rupees as loan or share. The first issue of concern is how an individual selects the specific securities in the current period.

6. I.M. Pandey, Financial Mgmt, 7th ed., Vikas Publishing House Pvt. Ltd. New Delhi, 1997, P-905.

Assume that our knowledge of the individuals' attitudes towards risky investment is that for a given expected return the alternatives with minimum standard deviation will be preferred.[7]

The investors not only like return, they dislike risk. Their holding of an assortment of securities assets to that fact.

2.2.3 Stock certificate

Many share holders have chosen to avoid these rather cumbersome procedures. Instead depository arrangements are used, which substitute computerized records for embossed certificates'

The exact percentage of the ownership of shareholders depends on the number of share received is total number of shares.

Share of stock held by investor may be transferred to new owner with the assistance of either the issuing corporation or more commonly its designated transfer agent. This agent will cancel the old stock certificate and issue a new one in its place made out to the new owner. Frequently a register will make sure that this cancelling and issuing of certificate has been done properly. Usually, banks and trust companies act as transfer agents and registers. Many stock holders have chosen to avoid these rather cumbers once procedures.

2.3 concept of investment

Investment is its broadest sense, means the sacrifice of current dollars for future dollars. The investment environment includes the kinds of marketable securities that exist and where and how they bought and sold. The investment process is concerned with how an investor should make decisions about what marketable securities to invest in, how expensive the investments should be, and when the investments should be made.

7. Donald E. Fisher, Ronald J, Jordan, Security Analysis and Portfolio mgmt (5^{th} ed). Prentice Hall of India, new Delhi, 1993, P-58.
8. Wilkam F. Shaepe, Gordon J. Alexander and Jeffus V. Baisey, Investment prentice Hall of India, New Delhi, 1999, P- 502.

Investment involves two different attitudes time and risk where there are more risk and return is also high.

Risk and return are the foundation of modern financial theory. So, they have the important concepts in finance. In finance what is risk? How it is measured? Is studied. So, risk and return are the part of investment

strategies are compared with one another, risk and return tend to go together. That is, securities that have higher average returns tend to have greater accounts of risk.

The meaning of investment return is when people buy common stock, they give up current consumption in the hope of attaining increased future consumption. The total return on investment is the sum of the income and the capital gain or loss on investment.

Total return = dividend income + capital gain

If the stock selling price is less than the purchase price, the investor will suffer from a capital loss and vice- versa. the return from an investment is the realizable cash flow earned by its owner during a given.

2.3.1 Concept of risk

In simple, risk is the chance of loss or damage, if injury. An asset having greatest chances of loss is viewed as more risky than those with lesser chances of loss. Risk can be defined as the chance of loss orin certainty of getting back both interest (return) and principal account invest. Risk is the possibility that the actual return for an investment will differ from the expected return.

In situations involving 'risk', the probabilities of various outcomes are known. But under (uncertainly) there is no knowledge of the probability distribution of the possible outcomes. Fischer d.e and Jordan R.J describe risk as "--------- is holding securities are generally associated with the possibility that realized return will be less than the returns that were expected. The source of such disappointment is the failure of dividends (interest) and \ or the security's price to materialize as expected. They also distinguish the term risk and uncertainty." The further wrote,

"risk, suggests that a decision maker knows the possible consequences of a decision and their relative likelihood at the time he makes that decision. Uncertainly, on the other hand, involves a situation about which the likelihood of the possible outcomes is not known." [9]

2.3.1.1 Measurement of risk

a) Standard deviation method

Standard deviation method is the most useful method of calculating risk. However these are many methods but most analysts uses this method. The standard deviation of a distribution of asset returns represents the square root of the average squared deviation of the individual outcomes from the expected value. Standard deviation is used not for calculating risk only but also to comparing risks among securities. In order to compare standard deviation with risk one must be careful, because it is an absolute measure of dispersion of outcomes in relationship to an expected value.

The main advantage of standard deviation is that the uncertainties of the return can be summarized into a single, easily calculated number. On other hand, the main disadvantage of standard deviation is that it considers possible returns above the expected value to be as risky as returns below the expected value.

Greater the standard deviation greater the risk of investment. Standard deviation measures the degree of risk of common stock. The risk or standard deviation is denoted by (S) which is given by: Standard deviation (δ)= $\{ \Sigma(Ri-ERi)^2Ps\}^{1/2.}$

In comparisons of assets with differing expected values, the use of the standard deviation can easily be improved upon by converting the standard deviation into coefficient of variation. The coefficient of variation is generally conceptual only for data that are non- negative.

9. D.E. Fisher and R.J. Jordan, Security Analysis & Portfolio mgmt. 5th ed. Prentice Hall of India , 1993, P-98.

The coefficient of variation (c. v) is a measure of relative dispersion(risk) a measure of risk per unit of expected return. The lager the c.v the larger the relative risk of investment.

The Coefficient of variation (c.v) is calculated by dividing the standard deviation by mean. Mathematically, coefficient of variation (c.v) = $\delta i \div$ ERi

A distant with smaller c.v is said to be more homogeneous or uniform than the distance with greater c.v. standard deviation is the only absolute measure of risk depending upon the units of measurement. Also

Standard deviation = variance

b) Beta (B)

It is an indicator of the relationship between an individual investment return and the general market return. The beta coefficient is an index of systematic risk. Systematic risk is that risk which cannot be diversified a way.

Beta is symbolically denoted by ‘ ‘. Mathematically,

Beta (β) =$cov_{i,m} \div \delta^2_m$

Thus, Beta is not a measure of systematic risk of a security or a portfolio; it is more like an index of systematic risk. The beta of a portfolio is simply a weighted average of the individual stock betas is the portfolio.

Interpretation of beta can be done as:

a) The beta of the market portfolio is by definition always equal to 1 and beta’s value of asset generally ranges between 0.5 to 2.
b) $\beta_i = 1$: it is moderate approach. This type of investment systematic risk is same as indicated in market portfolio.
c) $\beta_i < 1$: it is called defensive approach. This type of investment the proportion of systematic risk is lesser than that of market portfolio.
d) $\beta_i > 1$: it is called aggressive approach. This type of investment the proportion of systematic risk is greater than mark portfolio.

2.3.2 Concept of return

Every investor wants to have a return from an investment as much as they need. Returns that are bought by the investor during the course of their investment horizon have a very conceptual meaning. Over the years most companies pay dividends to share holders. If the company is profitable it generally will distribute some of its profit to share holder.

Therefore as the owner of shares of stock, the share holders will receive some cash called dividend during the year. This cash is called the income component of shareholders return. In addition to the dividends, the other part of return is the capital gain, if it negative, the capital loss (negative capital gain) on the investment.

Thus the return can be defined as the net proceeds after tax from given investment alternatives. Return increases the value of initial investment after deducting tax.

2.3.2.1 Classification of measurement of return

A) On the basis of time period of investment
1) Single period measurement of return over several periods
B) On the basis of average return
1) Annualized MPR (AM)
2) Geometric MPR (GM)
C) On the basis of form of return
1) Required rate of return
2) Expected rate of return

A) ON THE BASIS OF TIME PERIOD OF INVESTMENT

1) Single period measurement

The single period rate of return is the basic random variables in investment analysis. This rate of return concept is important because it measure the speed at which the investor's wealth increases or decreases. They expect to collect dividends and eventually sell the stock at a profit. The rate of return (or simply the return) is calculated as follows.

Return (in %) = $[P_1-P_0]\div P_0$

2) Measurement of return over several periods

The rate of share for more than one year can be calculated. The average rate of return (arr) is the sum of the one period of return of various period divided by number of period.

Return (R) = $[R_1+R_2+R_3\ldots\ldots\ldots\ldots\ldots\ldots + R_n] \div n$

B) ON THE BASIS OF AVERAGE RETURN

1) annualized HPR

Annualized HPR is simply an arithmetic mean of mprs of different years.

$$HPR = [HPR_1+HPR_2+HPR_3\ldots\ldots\ldots\ldots +HPR_n] \div n$$

2) Geometric HPR

Geometric mean can express the true average rate of return over a multi period and can show accurately the change in the investment value. The geometric average is defined as the nth root of the product resulting from multiplying a series of returns together.

$$Gm = [(1+r_1)\ (1+r_2)\ (1+r_3)\ \ldots\ldots\ldots\ (1+r_n)]^{1/n} - 1$$

C) ON THE BASIS OF FORMS OF RETURN

1) Required rate of return

The minimum return that an investor expects at least not to suffer from loss is the required rate of return. Thus an investor must consider the following three components while setting the required rate of return.

 # Real risk free rate of return

This rate is determined by capital market depending upon the demand and supply of capital. It denotes the time value of money.

 # Expected inflation

It symbolizes the future price appreciation of goods, which the investment has intended to purchase through the return of his investment after the sequestration of scheme.

 # Risk

Risk generally denotes improbability of being paid back interest and principal amount.

2) Expected rate of Return

Expected rate of return is that return which an investor expects from his investment is the forth coming future. Expected rate of return is also called as extant return of investment asit remains unknown to the investors. Expected rate of return depends upon the future cash receipt over investment horizon.

" The expected rate of return for any asset is the weighted average rate of return using the probability of each rate of return as the weight. The expected rate of return is calculated by summing the products of the rates of return and their respective probabilities."[10]

Expected rate of return will always be more than required rate of return (rrr). It is therefore when an investor has higher or equal expected rate of return is compare to the rate of return (rrr) then only that invest investment alternative is acceptable. The expected rate of return can be calculated as: $ERi = \Sigma P_s \times Ri$

When future events are not possible to obtain for calculating the expected rate of return, in such a condition, the historical data are used to calculate the rate of return.

10. J.C. Francis, Investment Analysis and Portfolio mgmt, McGraw Hill International . New York, 1992, P-11.

Expected rate of return [Ri] = ERi ÷ n

2.3.3 RELATIONSHIP BETWEEN RISK AND RETURN

The relationship between risk and return is one of the fundamental topics of financial management. Investors are very much lucky if they can find the extract relationship between these two of the securities they are thinking to invest.

It is very difficult for investor to find the accurate relationship between risk and return. "Higher the risk, higher the return" is the bottom line of finance. However, it is not always true. The reason is that investors are risk averse – they dislike risk and seek to avoid it. As a result, high –

risk assets must offer investors high returns to reduce then to make the riskier investment.

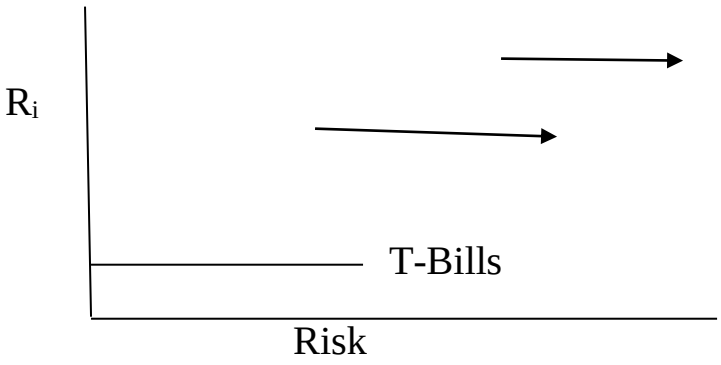


Fig no.1 : Figure showing the relationship between risk and return.

2.4 PROCESS OF INVESTMENT

2.4.1 SET INVESTMENT POLICY

Setting investment policy, involve determining the investor's objectives and the amount of his or her investable wealth. Investment objectives should be started in terms of both risk and return. These are a positive relationship between risk and return for sensible investment strategies.

This steps is the investment process concludes with identification of potential categories of financial assets to be includes is the portfolio. This identification will be based on, among other things. The investment objectives, amount of investable wealth and tax status of the investor.

2.4.2 SECURITY ANALYSIS

Security analysis is the second step of investment process involves examining several individual securities or group of securities within the broad categories of financial assets previously identified. Security analysis can be classified in two approach, technical analysis and fundamental analysis. technical analysis involves the study of stock market prices in an attempt to predict future price movements. the analyst identifies emerging trend or pattern, and predicts accurately future price movements for a particular stock. The fundamental analysis begins with the a scertain that

the true or ‘intrinsic’ value of any financial asset equals the present value of all cash flows the owner of asset expects to receive. This stock analyst attempts to forecast the timing and size of these cash flow and converts the cash flow to present value using an appropriate discounts rate. Finally the time value of firmis comported with current market price of a common stock. Stock whose estimated true value is greater than their current market price are known as undervalued or underpriced.

2.4.3 PORTFOLIO CONSTRUCTION

Portfolio literally means the act of investing the funds in two or more than two securities so that the loss of one security can be converted by the other securities. A portfolio is a bundle or combination of individual assessor securities. If the investor holds awell diversified portfolio rather than individual assets or securities. Portfolio theory suggests how a risk adverse investor can selects optimal efficient portfolios.

Portfolio construction the third steps of investment process involves identifying specific assets in which to invest and determining how much to invest in each one. The issue of selectivity, timing and diversification need to be addressed by the investor. Selectivity refers to security analysis and focuses on forecasting price movements of common stocks in general relative to fixed income securities. Diversification involves constructing the investor's portfolio in such a manner that risk is minimized, subject to certain restrictions.

2.4.4 PORTFOLIO REVISION

Portfolio revision concerns the periodic repetition of the previous three steps. An investor may change his objectives, which in turn, would make the currently held portfolio less than optimal. The investor may create a new portfolio by selling certain securities and by purchasing other. Portfolio will be possible if the prices of securities changed. Some securities that initially were not attractive may become attractive and others that were attractive at one time may no longer be. The investor may want to add to the unattractive one and eliminated to the attractive one.

2.4.5 PORTFOLIO PERFORMANCE EVALUATION

Portfolio performance evaluation, the fifth step, involves determining periodically how the portfolio is performing in terms of the return earned and also the risk experienced by the investor. thus, appropriate measure of return and risk as well as relevant standards are needed.

2.5 CONCEPT OF PORTFOLIO MGMT THEORY

A portfolio is a collection of securities. The expected return standard deviation of a portfolio depends upon the expected return and standard deviation of each security in the portfolio.

Portfolio theory is a defensive technique to counter the problem of investment risk. It shows how an investor can reach his optimal portfolio position.

2.5.1 ASSUMPTIONS OF PORTFOLIO THEORY

a) An investor makes investment (Portfolio) decisions purely on the basis of risk and return of that asset or portfolio. That is, the utility function [or the indifference curve] of the investor is based on risk and return.

b) Investors are risk reverse, which means they will choose the portfolio with the smaller standard deviation. They prefer less risk or more return. But these are some investors who prefer risk to return. Risk averter, risk neutrals and risk seekers are the various types of investor, risk neutrals and risk seekers are the various types of investors. "alternatively, an individual is said to be risk averse if the utility of expected wealth is greater than the expected utility of wealth i.e. u[E(w)] > E [u(W)] ..... risk aversion.

If the utility of expected wealth is equal to the expected utility of wealth then investor is said to be risk neural , i.e.
U[E(W)] < E[U(W)] ..... risk neutrality.

Finally, an investor is said to be risk seeking if the utility of expected wealth is less than expected lit city of wealth, i.e. U U[E(W)] > E[U(W)] ..... risk seeking [11]

- The risk of returns from an assets or security is the variability of returns from the average . Value of retunes, which is the standard deviation or variance.

- The returns from an assets or security is the expected return, that is weighted average value returns, weights being the probability distribution returns for some period.

- Investors adhere to the principle of dominance that means investors prefer the assets which has high return for many given level of return that the assets which has high risk.

11. C. Peterson and C.W Lewis, Managerial Economics practice Hall of India, New Delhi. 2001 , P-470.

2.5.2 Risk and expected return of a portfolio

a) The portfolio's rate of return

Portfolio return is simply the weighted average return of individual securities, which are combined in certain ratio is portfolio, and the weights being the proportion invested in individual securities i.e', A,B,C,D.....

Suppose we consider a single period of time, say a month. If the individual securities in the portfolio produce various rates of return, what will be the return to the portfolio as a whole ? Let us consider a portfolio of two securities and first consider the rupee return to the portfolio. We will assume.

We have Rs. 1000 to invest, and we put Rs. 400 of it in security A and Rs. 600. in security B. in the next month, A & B produces a rate of return 10% and 6% respectively. What is the rupee rate of retun to the

portfolio ? The rupee returns to the portfolio is obviously the sum of hte rupees return of the two securities.
= [Rs. 400+36] = Rs. 76

The percentage rate of return to the portfolio is given by the return divided by the total amount we have invested, which in this case is Rs. 1000.

Dividing both sides of the above equation by Rs. 1000, We get,

= [Rs 400/1000×0.1] + [Rs. 600/1000×0.06]
= 4% + 3.6% = 7.6 %

The tern 'W' is the fraction of money we are investing in each security. Thus the rate of return to our portfolio, in any given period of time, is a weighted average of the rates of return that are being produced by the securities in the portfolio, where we are weighting by the fraction of our money that we are investing in each security. These fractions are also called portfolio weights. When summed they add up to 100 no, and they are computed as;

WA = Rupee amount of security A bought [Sold Short]
Total equity investment in the portfolio.

A portfolio weight can either be positive or negative. a positive weights means we are buying the security ; We also refer to this as taking a long position in the security . The opposite of taking a long positions taking a short position or selling short. In this case the portfolio weight is negative because the narrator is negative.

Selling a short isn't quite the same as selling some security that we happen to own. "Expected rate of return to a portfolio is a simple weighted average of the expected rates of return to this security that are included in the portfolio. The weights are gained equal to the fraction of our own money that we are investing in each security". [12]

The general formula for the expected return of portfolio is as follows :

$ERP = Wij \times ERij$

Where,

ERp= expected return on portfolio

Wij = weight or proportion of investment into securities 'i' and 'j'

ERij = expected returns of individual security 'i' and 'j' .

To summarize, we can say that in any given period of time, the rate of return on our portfolio is a weighted average of the rates of return on the stocks in the portfolio. in taking the are rage, the weights are given by the fraction of our own money that we are investing in each stock.

i) Portfolio return – Two assets case

In this case, the formula will be;

$ERp = W_A \times ER_A + (1-W_A) \times ER_B$

12 R.A . Haugen, Modern investment Tneory prentice hall inter national inc new delhi, 1997 , P-69-70.

Where,

ERp= Expected return on portfolio

W_A = Weighted ao proportion of investment in assets a.

ER_A = expected return on assets A.

ER_B = expected return on assets B

ii) Portfolio return – 'n' assets case.

In this case, formula will be ;

$Rp = W_A \times ER_A + W_B \times ER_B + \ldots\ldots\ldots W_n \times ERn$

Where,

Rp = Expected return on portfolio

WA = Weight or proportion of investment in asset A

ERA = Expected return on assets A

WB = Weight or proportion of investment in asset B

ERB= Expected return on assets B.

Wn = Weight or proportion of investment in asset n

ERn = expected return on assets n.

c) Portfolio Risk

In is not easy to calculate portfolio risk. The reason of co-variability between returns of securities combined in the portfolio. Portfolio risk is not only weighted average of individual securities included in a portfolio but6 also its covariance.

Covariance is a statistical measure of the degree to which two variables [e.g. securities returns] move together. Positive covariance suggests that, an average, the two variables move in opposite directions. Zero covariance means that the two variables show no tendency to very together in either a positive or negative linear function. Covariance between security returns complicates our calculation of portfolio standard deviation – still this dark cloud of mathematical complexity contains a silver lining – covariance between securities provides for the possibility of elimination some risk with reducing potential return. [13]

13. Jc Van home and w.m Jr. Wahowas, fund a mental of financial management, mc draw hill international, New york , 2000, P-96.

So, Portfolio risk the weighted average risk of individual securities combined in the portfolio and their co- variability. The riskiness of a portfolio, as is the case of individual assets or securities, is measured by the variance [or standard deviation] of a portfolio is not simply the weighted average of variances [or standard deviations] of individual securities. The association of movements of returns of two securities is affecting the portfolio variance.

If 'x' and 'y' are two securities, then the covariance can be calculated as :

$COV_{XY} = \Sigma P_s [R_x - ER_x] [R_y - ER_y]$

Where,

Covxy = covariance of securities 'x' & 'y'

Rx, Ry = Return of securities 'x' & 'y'

Ps = Probability of occurrence of the state of economy.

It can be observed from the calculation of covariance of returns of securities x&y that it is a measure of the standard deviation of the securities and their association. Thus covariance can also be calculated as:

COVXY = $\delta x\ \delta y\ rxy$

Where,
δx = standard deviation of security x
δy = standard deviation of security y
rxy = correlation coefficient of x&y.

The variance of two security portfolio is given as:
δp^2 = $wi^2 \delta i2 + wj^2\ \delta j2 + 2wiwjcovij$

In the above formula of variance, there are three teams on the right hand side of the equation. The first term involves the variance of security 'i' (i^2), second term involves variance of security 'j' [j^2] and the third term involves covariance between two securities convij. It should be noted that covxy= covyx. This is the ordering of the variables and is not relevant when expressing the covariance between two securities.

The formula indicates an important point. The variances of individual securities and the covariance between the two securities. The variance of a security measures the variability of an individual security's return. Covariance measures the relationship between two securities. For given variance of the individual securities, a positive relationship or covariance between the two securities increases the variance of the entire portfolio. A negative relationship or covariance between the two securities tends to go up when the other gocs down, or vice versa, our two securities age effective each other. We are achieving what we call a hedge in finance, and the risk of our entire portfolio will be low. However, if both our securities rise and fall together, we are not hedging at all. Hence, the risk of our entire portfolio will be higher.

The standard deviation of the portfolio return is

$\delta P = \sqrt{\text{Variance of the portfolio}} = \sqrt{\delta p2}$

Correlation efficient, which is significant in portfolio conduction, is standardized statistical measure of the linear relationship between two variables. The extent of the benefits f portfolio diversification depends on the correlation between returns of securities. The correlation coefficient will always lie between +1.0 and – 1.0 lesser the correlation higher will be the reduction portfolio or risks. These are three influences to veduc portfolio risk in relations to the standard deviation of individual securities in isration as:

- The extent to which the correlation between the returns from the individual securities is less than 1.0.
- The number of securities in the individual securities in the portfolio in relation to their correlation among one another.

"The covariance number is unbounded. Theoretically, its range extends all the way from to plus infinity. We can bound if, however by dividing by the product of the, standard deviations from he two investment. [14]

Correlation [rAB] between two random variables is defined as the covariance divided by the product of their standard deviations. Mathematically,

$rAB = Cov_{AB} \div \delta_A \, \delta_B$

Where,

rAB = Correlation coefficient between the returns on securities A and B.

cov_{AB} = Covariance of return of securities A and B.

δA and δB = Standard deviation of the for securities A and B.

The correlation coefficient of 1.00 indicates that an increase is the return for one security is always associated with a proportional increase in the return from the other security, and similarly for decrease. A correlation

coefficient of 1.00 indicates that an increase is the return the security is always associated with proportional decrease in the return for the other security, and rice rersa

A zero coefficient indicates an absence of each security racy independently of the other.

2.6 The Efficient Frontier

Efficient frontier is the combination of all possible portfolios called the attainable set of investment opportunities. It is the locus f investment graphed in risk return space which has the maximums expected rate of return in their class or the minimum risk at whatever rate of return is selected.

14 R.A Hugen, modern investment theory, prentice Hall international inc. New Jersey, 1997, P-48-49.

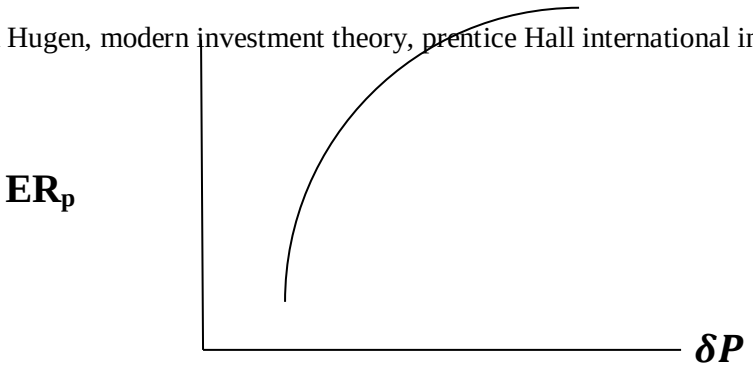


Figure no.2 :- Figure showing efficient frontier.

The above figure ill skates about the efficient portfolio. Portfolio 'P' has minimum risk. This portfolio has low risk and low return than portfolio 'Q' that has high risk and nigh return. portfolio 'R' has high risk and low return as compared to portfolio 'Q' thus, portfolio 'Q' dominates portfolio 'R' . A risk adverse investor will prefer a portfolio with the highest expected return for a given level of risk or prefer a portfolio with the lowest level of risk for a given level of expected return. in the portfolio theory, this is refute to as the principle of dominance and the portfolio which has the highest expected return for a given level of risk is called an efficient portfolio in above figure. the line rp is the efficient frontiers, and represents the locus of all portfolios which have the highest return for a

given level of risk . All other portfolios that lie outside the efficient frontier are inefficient portfolio.

If may be observed in the above figure that both portfolios "P" and "Q" are equally efficient . Portfolio "P" has low risk and low return, while portfolio "Q" has high risk and high return. which portfolio the investor will choose will depend on his risk – return reference

Thus, efficient frontier is a curve in which the efficient portfolio lies. It indicates that the portfolio, which lies in the efficient frontier curve, is more efficient than portfolio which lies below the curve. Because of lack of perfectly positive correlation the efficient frontier is concave.

2.7. Systematic and unsystematic risk

Systematic risk also referred to as non- diversifiable risk or nevoid able risk is that type of risk which cannot be reduced by investing in portfolio. The systematic risk is not under the control of investors. All the investors are to face the systematic risk. The systematic risk arises due to external factor like state of economy, conception, strategy, inflation, natural calamities like earthquake, flooders, etc.

The beta of a security measures the systematic risk. This is the risk associated with changes is the market's excess return. Since most securities have betas between the value of 0.8 and 1.2 and most investors want extensive diversification. it is difficult to reduce systematic risk by changing the composition of the risky securities is the portfolio [by the definition the beta of market is 1.0]

A beta coefficient of unity indicates that a security has the same as want of systematic risk as the market portfolio. A bet a coefficient greater [lesser] than unity indicates the security is riskier [safer] than market portfolio.

Thus as systematic risk are to be borne out by the investor may cost and this is not diversifiable so the investor expects certain additional return from the investment is order to convey emergence of systematic risk and beta is the modern technique to calculate systematic risk.

Systematic risk includes market risk, interest rate risk and purchasing power risk.

- **Unsystematic [diversifiable risk]**

Unsystematic risk is called avoidable risk. This can be reduced by investing in portfolio. The risk arises due to internal and controllable factors are unsystematic risk.

In other words we can say the risk arises from the uncertainties which are unique to individual securities , and which is diversifiable if large number securities are combined to form well diversified portfolios. The unique risk of individual securities in a portfolio cancel lea out each other. This part of risk can be totally reduced through diversification. It is called unsystematic, or unique or diversified risk. The examples of unsystematic risk are;

- Workers declare strike in a company.
- A formidable competitor enters the market.
- Increase in tax custom duty etc.
- The company makes a breakthrough in process innovation.
- The research & development expert of the company leaves.
- The company loses a big contract in a bid.

The uncertainty surrounding the ability of the issuer to make payments on securities stems from two sources.

1. The operating environment of the business and
2. The financing of the firm.

These risks are referred to as business risk and financial risk, respectively. They are strictly a function of the operating conditions of the firm and the way in which it chooses to finance its operations.

I)Business risk

Business risk is a function of the operating conditions faced by a firm and the variability these conditions inject into operating income and expected dividends. Business risk can be divided into two broad categories; external and internal. Internal business risk is largely associated with the efficiency with which a firm conducts its operation within the broader operating environment imposed upon it. Each firm has its own set of internal risk, and the degree to which it's successful in coping with them is reflected in operating efficiency. External business risk is the result of operating conditions imposes upon the firm by circumstances beyond its control. Each firm also faces its own set external risks depending upon the specific operating environmental factors with which its most deals. The external factors, from cost of money to defense budget cuts to higher tariff to a downs wing in the business cycle, are far too numerous to list in detail , but the most pervasive external risk factor is probably the business cycle.

II**) Financial risk**

Financial Risk is associated with the sway in which a company finances its actives. The presence of the borrowed money or debt in the capital structure creates fixed payments in the form of interest that must be sustained by the firm. The presence of these interest commitments fixed interest payments due to debt or fixed dividend payment on preferred stock causes the amount of the residual earning available or common stock dividend to dividend to more variable than if no interest payments were required. Financial risk is available risk to the extent the mgmt has the freedom to decide to borrow or not to borrow funds. By engaging in debt financing the firm changes the characteristics of the earning stream available to the common stock holders. Superficially, the reliance on debt financing, called financial leverage, has at least three important effects on common stock holders. Debt financing a) increase the variability of their

returns b) affects their expectations concerning their return and c) returns their risk of being ruined.

2.8 Concept and meaning of capital asset prancing model (CAPM)

Ones the past few years, a great deal of theory have been developed with respect to risk- return tradeoffs. The most important aspect of risk is the overall risk of the form as per yearned by investors in the market place this risk significantly affects investment opportunities and even more importance, the owners wealth. The basic theory with respect to risk and return is commonly called the capital asset pricing model (CAPM). If was develop to the explain the behavior of security prices and provide a mechanism whereby investor could assess the impact and return.

The capital asset pricing model (CAPM) is a major contribution to modern business finance theory and practice. The CAPM is an extension of the portfolio literature of the 1950's. the main change is that the CAPM makes use of the prices bat the market is setting for return risk tradeoffs rather than uses subjective measure of attitudes toward risk (such as the risk preferences of specific investors). [15]

The CAPM says that investors have available a market basket of risky securities and the opportunity to invest in securities with no risk of default. risk preferences of investors deduct a combination of the market basket of the risk less securities. In equilibrium return of any security must be such that the investor expects to earn a basic return equal to the return on a default free security plus and adjustment that is heaving influenced by the correlation of the security's return and the markets return. If the return from the investment is positively correlated with the market return, the equilibrium return will be larger than the default free returns. If the correlation is negative, the equilibrium return will be smaller than the default free return. We cannot prove that investors behave in a manner consistent with the CAPM but it likely that the model is useful representation of how investors act. The camp is an attempt to

provide both a theoretical understanding and practical measure of three cross section of the one period expected return rates a

15. H.Jr. Bierman and S. Smidt, Financial mgmt for decision making, me millan publishing company, 1986, P-102.

currently marketed port found of risk assets during a particular period of time. The CAPM is a "one-factor" pricing model in the sense that it postulates that only one factors- namely the expected returned rate on the market portfolio in- suffices to explain the cross section of portfolio return rates.

The major important of the model is that the expected returned of an assets will be related to a measure of risk for that asset known as beta. The modal provides the intellectual basis for a number of the current practice in the investment in- dusty.

CAPM suggests that in equilibrium market, every security available in the market is priced and they provide risk- adjusted rate of return. One important limitation of CAPM for corporate decision making should be kept in mind. The models assumes that an investors are widely liveried and equally important, it assumes that the manages of the firm are willing to make investment decision with the objective of maximizing the well being of this type of investors. This means that unsystematic risk (for which the investor is well diversified) this may be ignored in the evaluation of investments.

It is well known that objectives of firm and managers are multi-dimensional and that there will be a reluctance to ignore risk because it does not affect the well –divaricated investor. The so called unsystematic risk is not something that is likely to be ignored. by a management that includes among its objectives the continuity of existence of the firm

Investors are much more complex in their behavior and markets are less than perfect. Investment decision- making under uncertainty is not an easy task, but uncertainty is a characteristics of the world and problem must be faced it is important to remembers that the CAAPM models

generally relies on historic data to estimate required (or expected) returns. The betas, which are developed by using historical data for the given asset as well as for the market, may not actually reflect the future variability of returns therefore the required returns specified by the model can be viewed only as rough approximations. Various financial exports have viewed CAPM in different ways some of them are as follows:

CAPM is an equilibrium mode of the tradeoff between exported portfolio return and unavailable risk [17] thus the CAPM is a major contribution to modern business finance theory and practice. It is an extension of the portfolio literature of the 1950_s. the main change is that CAPM makes use of prices that the ,market is setting for return- risk tradeoffs rather than use subjective measure of attitude towards risk (such as the risk preference of specific investors) the relationship between expected returned and unavailable risk, and the valuable of securities that follows is the essence of the CAPM.

2.8.1. Assumptions of capital assets pricing model(CAPM)

In Its purest from the CAPM is a comprehensive theory of risk and return relationship in perfect markets. It makes such assumptions as rational behaviors on the part of all investors know risks and expected returns, no fees, commission or taxes, and no risk of bank raptly. Within the confines of this highly restrictive assumption a risk return relationship developed in considerable detail. In perfect market such as those assumed by the model there is no quarreling with capital asset theory. It is a conceptual correct approach to risk and return.

The CAPM model relies on a number of assumptions that create nearly perfect world. Although they appear to be unrealistic empirical studies have confirmed their reasonableness and have provided support for the existence of relationship described by CAPM. CAPM is based on a number of assumptions.

Sharpe, Alexander and bailey have mentioned the following assumption about the following assumption about the CAPM.

Assumption of the CAPM:

- Investors evaluate portfolios by looking at the expected return and standard deviation of the portfolios over a one period horizon.
- Individual assets are infinitely divisible, meaning that an investor can buy a fraction of share if he/she so desires.
- Investors are risk –averse, so when given a choice between two otherwise identical portfolios, they will choose the one with the lower standard deviation.
- Investors are never satiated, so when given a choice between two otherwise identical portfolios, they'll choose the one with the higher expected return.
- There is a risk-free rate at which an investor may either lend [I.e. invest] money or borrow money.
- Taxes and transition cost are irrelevant.

To these assumptions the following ones are added.

- All investors have the same one-period horizon.
- The risk free rate is the same for all investors.
- Information is freely and instantly available to all investors.
- Investors have homogenous expectations, meaning that they hare the same perceptions in regard to the expected returns, standard deviation and covariance of securities[18]

2.8.2. Use of Capital asset pricing model (CAPM)

Though the assumption on which CAPM is based limits the generality of the model, it is still widely used. Bier man and smidt[19] have identified the following uses of CAPM.

I. To form portfolios of securities (the weighted average of the betas of all the securities is one relevant risk measure if the investors is imperfectly diversified)

18. William F. Sharpe, Gordon J. Alexander, and Jeffery V. Bailey : Investment, prentice Hall of India pvt ltd. New Delhi,2000,P-262

19. H.Jr Bierman and S.Smidt, financial mgmt of decision making, mc Milan publishing company , New York, 1986, P-116

$R_i=R_f+[R_m-R_f]\ B_i$

II. To estimate the cost of equity capital using $R_i=R_f + [R_m-R_f] B_i$ these estimates are use both for public utility regulatory proceedings and determining the required return to be earned by operating division of corporations.

III. To evaluate securities :- if the expected return is large than

The security is "bargain".

If a security has larger expected return than the return indicated by the CAPM all investors [with homogenous expectations will buy it until its expected return is lowered to be equal to $\mathbf{R_i=R_f+[R_m-R_f]\ \beta_i}$

In the manner if a security I is expected to earn less than $R_i=R_f+[R_m-R_f]\ \beta_i$ no one will buy [some will sell t short] its price will decrease and its expected return will increase.

All securities are contained in the market portfolio in proportion to their market value. The beta of market portfolio is one (i)

2.8.3 Limitations of capital asset pricing model

→ It is hard to estimate the risk free rate f return on project under different economic environment.

→ The CAPM is really just a single period model . It is not possible to use the CAPM for projects, which last for more than one year.

→ The model does not appear to adequately explain the variation in stock returns. Empirical studies in the past 15 years stock may offer higher returns.

→ What are market portfolios? Does it include the bond market? Real state? Commodities? Private placements?

→ The market portfolio and hence its return are not observable and have to be estimated therefore the model is not testable.

→ The model assumes that all investors are risk averse. Some investors i.e. some day traders) are not risk averse.

→ The model assumers that all investors create mean-variance optimized portfolios. There are many investors who don't know variance optimized portfolio.

→ Complications in decision-making cannot be modeled easily.

2.9 Relationship between the risks of assets with its expected rate of return

It is common place to argue that the expected return on a security should be positively related to its risk that it individuals will hold a risky security only if its expected return compensates for its risk . Now we consider our world where all individuals 1) have homogeneous expectations and 2) all individuals can borrow and lend at the risk free rate. All individuals hold the markets portfolio of risky securities here.

While only the portfolios that are candidates to be held by investor are positioned on the capital market line, all portfolio and individual securities. All two of equation describes relationships that should exist in equilibrium if the capital assets pricing modal or correct.

The capital market line (CAPM) and the security market line (SML) are merely different pictures of the same market equilibrium. The CML may be used for determining the required return only for those efficient portfolios that are perfectly correlated with the market portfolio because they fall on the CML but the SML may be used to explain the required rate of return on all securities whether or not they are efficient.

2.9.1 Capital market line

Simply a construct that is used to portray the relationship between the risk and return in a market portfolio and the risk less of return thereby defining the widely held notation of prices of risk and prices of immediate consumption is the capital market line. Since price to the buyer is the as the ‘reward’ to the seller , these notations can also be thought of as rewards, specifically, the reward per unit of risk born and the reward for waiting .

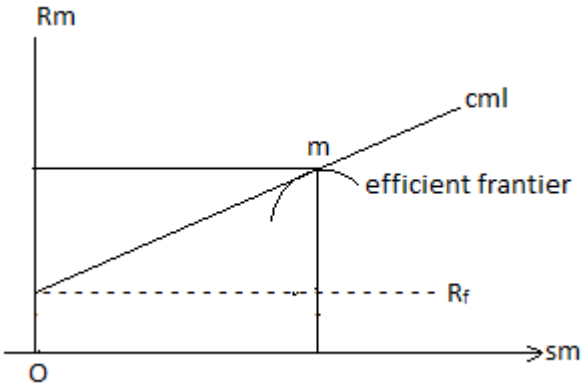


Figure no :-3 figure showing of CMC

$R_1 = R_f + R_m - R_f/sm \times si$

Where

ER_m = market portfolio return

R_f = risk free rate

δ_m = standard deviation of market portfolio return

here , $R_m - R_f/\delta m$ is the slope of CMC which is represent by the n so the formula of CML can also be expressed as : $ER_1 = R_f + \delta_I n$

Where,

$\boldsymbol{\eta}$ = slope of CM L

The CML express the current "trading term " for risk and return for efficient combinations , the combinations investors will actually hold. If reflects current expectation regarding the distributions of future outcomes from investments. Realized rate of return will generally differ from the expected values. Also there is no reason to believe that the trading term for risk and will remain constant overtime. Both the interest rate R_f and the price of risk "n" reflect individual preferences and opportunities and therefore given only at the present point in time and reflect expectations of outcomes one period from now.

Over time the equilibrium changes as new assets enter the market and old asset disappear. Instead if such asset changes occur with sufficiency rapidity, equilibrium may never be achieved since adjustment is not necessarily instantaneous. The theory presented here is meant to describe the equilibrium that the system at least approach if not attains.

The capital asset pricing model can be portrayed graphically by means of the capital market line. Theoretically, the ,market encom passes all securities in proportion to their market value however in practice, value weighted indexes such as the MUSE or the s or p composite indexes are used as proxies for the 'market' given the assumption of as efficient capital market, the pricing of the market portfolio at any point in the time accurately reflects an equilibrium relationship between the market's consensus of risk and expected return, "[20]

2.9.2 security market line (SML)

The SML shows that if risk increase the return should also increase proportionally. The risk affected the return is the market risk [21] sml is line that show the relationship between risk as measured by beta and required rate of return for individual securities. Security market is the graphical representation on of the CaPm . it show the relationship between risk and required rate of return with the help of SML, the overpriced under priced stock can be located.

The SML shows that if risk increases the return should also increase proportionally. The SML describes that the investor cannot get the compensation for unsystematic risk, the systematic risk is only compensated representing by beta of the securities. if the stock are under priced , they lie above the SML and if they are overpriced, they lie allow the SML. If the expected rate of return is more than required rate of return the stocks is called under priced and if the expected rate of return is less than the required rate of return, the stock is called overpriced

20.R.L. haginand L.D Schall, The theary of financial decisions, mc Graw Hill kugakusha ltd, New Delhi , 1989. P- 140.

21. F.J. Weston and E.F. Brigham, Essentials of managerial finance, The Dryden press, New York, 1996 P- 208.

2.10 Beta

Beta measures non- diversifiable risk . beta shows the price of a security responds to market forces . in effect the more responsive the prices of a security is to change in the market the higher will be its betas . a stock's in the ,market, the higher will be its betas . a stock's contribution

to the risk of a fully diversified portfolio depends on its sensitivity to changes this sensitivity is generally is known as beta[22]

Risk associated with an investment outcome can be broken down into two parts. (I) the systematic part related to relationship of the security to market and (ii) the residual part related to the deviation between the expected and actual part for the non- market component of return.

We can split up the variance of return on a security or portfolio into two parts $\delta^2(r) = \beta^2 \delta^2(r_m) + \delta^2(E)$ Total variance = systematic risk + residual variance.

The first term. i.e. $\beta^2 \delta^2(r_m)$ of the equation is called the systematic risk of the investment. It account for the part of security's variance, which cannot be diversified away. This part of variance is contributed to the variance f a well diversified portfolio of many different stocks. The second term i.e. $\delta^2(E)$ is called the residual variance or unsystematic risk. It represents the part of a security's total variance that disappears as diversify. It is mainly because of residual variance that the variance of portfolio is less than the weighted average of the securities in the portfolio.

Rational investors hold diversified portfolios from which the diversifiable risk is more or less eliminated. Hence the relevant measure of risk of an investment is its no diversifiable risk (or systematic risk) do all securities have the same degree of non-diversifiable risk ?

22. R.A Barely and S.C myers, principle of corporate finance. Tata ms. Graph hall, New Delhi , 1997 P- 145.

All securities do not have the same degree of non-diversifiable risk because the magnitude of influences of economy wide factors tends to vary from one firm to another. How non-diversifiable risk measured? It is generally measured by beta, β. Though not perfect; beta represents the most widely accepted measures of the extent to which the return on a financial asset fluctuates with the return on the market portfolio. By definition, the beta for the market portfolio β_m is.

The beta coefficient is an index of systematic risk. Beta coefficient may be used for making the systematic risk of different assets.

Beta coefficient:-

In order to assess an asset's non- diversifiable risk its beta coefficient must be determined. The beta coefficient can be viewed as an index of the degree of responsiveness or co movement of asset return with market-return. The beta coefficient for an asset can be found by examining the assets historic returns relative to the return for the market. The market returns should be upon a broad index of all risky assets. Because such an index is not confidently available they are typically measured by the average return on all (or a large sample of) assess. In international context, the standard and poor's 5000 stock composite indexes or some other stock index is commonly used to measure market return. The beta for the market is equal to; all other beta is viewed in relation to his value. Assets beta may take on values that are either positive or negative, positive betas are much more common than negative betas. The majority of betas fall between

So the beta is an indicator of the relationship between an individual investment's and the general market

2.11. Review of related studies

The base of Markowitz's portfolio theory is that higher the risk, higher the return and we-diversified portfolio can significantly reduces the risk of portfolio. In previous section, some theoretical frame works of portfolio mgmt were defined. In this section, an attempt has been made to test the theoretical base of portfolio management. It is observed that risk has two parts. One is systematic and another is unsystematic. A study about risk factors conducted by B. F. king showed that one's- half of total risk was occurred due to systematic risk. In his word 'nearly all stocks listed on the new York stock exchange move in the same direction as the MUSE index. On the average, 50 percent of the variance is a stock price can be explained by variance in the market index in another word about one- half the total risk is an average common stock is systematic risk, there are some empirical studies based on the theoretical beliefs of portfolio management. Modigliani and gouge different assets between January 1945 and 1970. In most causes risk- return relationships make sense

Another statement of portfolio – diversification reduces the risk is also tested by wanderer Lau (1971). They divided a sample of 200 MUSE stocks into six subgroups based on s or up's quality rating as of June 1960. The result as the number of securities in the portfolio increase, the standard deviation of portfolio return decrease but at a decrease rate

With further reductions in risk being relatively small after agouti 10 securities are included in the portfolio.

2.11.1 Review from related proposal

There are very few topics regarding the analysis of portfolio mgmt in Nepal. A master degree thesis of (risk) and return analysis of common stock investment" written by durgahari bhattrai is reviewed here. Which show that there exists a positive relationship between risk and return.

Similarly the master degree thesis written by srijana poudel about (portfolio mgmt of commercial banks is also reviewed here). Here fine and crucial idea is given about the portfolio mgmt. here the thesis shows that the portfolio is the act of investing the funds in different securities can be covered by other, and the portfolio comprises of two or more than two securities.

Some of her findings are :-

1. Investors should always try to minimize risk and every effort should be made to do so
2. Inventors should select negatively correlated stock, while they create portfolio investment
3. To create a portfolio of stock it is always better to diversity a cross industries
4. Highly positive co- varied stock should be avoided to create portfolio.
5. Any investment in stock in market should be done only after careful examination of each stock's price, the rend effect of divided, bonus share and prospects of the company.

2.12. Review of study about Nepal stock exchange:

Since this has a major link with stock market of Nepal, it, the therefore needs some paragraph about stock market. In this section, the background and some of studies about Nepal stock market is dealt.

The history of stock market began with the floatation of shares by Biratnagar jute mill and Nepal bank limited in 1937, other development relating capital markets were the introduction of the company act, in 1951. The first issue of government hands was in the 1964 and the establishment of the securities marketing center in 1976, under the company act. It assisted public limited companies to raise capital though issue of shares and debentures and also provide market place for trading securities. Although the purpose of the establishment was to assist the public limited company, but it was only concerned with dealing the government bonds and treasury bills in the beginning phases of establishment. After the securities, exchange act 1983, the security marketing center was changed to securities exchange center and it opened the floor for secondary trading of shares to provide liquidity and marketability of new issued securities. His majesty's govt under a program initiated to reform capital market and in the process securities exchange center was converted into Nepal stock exchange in 1993. Nepal stock exchange opened its trading floos in 13th January 1994 from newly appointed brokers and market marks.

People invest in stock market for return. However, those returns are subject to risk. A careful analyze requires before investing in stock market. A portfolio investment is a good investment strategy.

The NEPSE has also licensed dealer for primary and secondary market. The primary market dealer operates as a manager to the issue and underwriter whereas the secondary market dealer for operates as a portfolio manager.

Presently, the NEPSE has licensed 11 dealers for primary market and 2 dealer for secondary market [23]

Investment in the security market is not risk free. At the same time, such investments are also called gambling. As a matter of fact blind speculation in the stock market is gambling where as informed speculation is investment. A quickly achieved peaks and values of the NEPSE index graph are the results of speculator behavior shown by a majority of investors in process. Some have lost their capital while some others have made good profits. Losing and making money are however parts of game. Everybody cannot be a winner every time. But the past of stock market has left some clues to the future. All can make money in stocks if they can rightly decipher the clues.

23. Rabindra Bhattari, Theory and Practice (2nd ed) , Buddha Academic Publishers and distributors pvt ltd. Ktm , Nepal, 2005, PN-14-145.

CHAPTER- THREE
RESEARCH METHODOLOGY

3.1. INTRODUCTION

Research methodology is the method which the research uses in the course of his research. This is the step, guidelines and tools used in the research. It simply means the sequential steps to be followed in studying or analyzing a problem. This is the guidelines. Followed by the researcher in order to give the result is going to do. So research methodology is very important as it represent the method of entire research.

3.2 research design

In simple language, planning for research designed. It is purposeful scheme of action proposed to be carried act in a sequence during the process of research. Research designed helps researcher to enable him/her to keep trade of action and to know where she was moving in the right direction to achieve his/her goal. Research design is the plan, structure and strategy of investigation concerned so as to obtained answers to research questions and to control variances.

Research design is the plain for the collection of data and an analysis of data. It presents a series of guide post to enable the researcher to progress in the right direction in order to achieve the goal. This research study is based on recent historic data. If covers the seven years period from fiscal year.

Thus a research designed is a plan for the collection and analysis of data research design is the main part for the thesis or any research work. This study tries to evaluate the portfolio analysis of the selected banks. To accomplish the objectives it has adopted the descriptive cum analytical type of research designed. If tries to describe and analyze all these factors that have been collected for the purpose of the study. Some analytical and accounting tools have also been applied to examine the factors and descriptive technique uses have adapted to evaluate the structure of selected nature of operations.

3.3. Population and samples

This study is concerned with portfolio analysis of commercial banks in Nepal. so the population of study is all the listed commercial banks. But, the study of all commercial banks is not possible. As a result a sub – group of the population is selected, which is called sample and samples in this study are the common stocks are dividend of three commercial banks. The following commercial banks are sample for this study: Nepal SBI bank limited (NSBC), Nepal credit and commercial bank limited (NCC), Nepal industries and commercial bank limited (NICBC), Himalayan bank limited (HBC)

3.4. Sources of data

Data can be obtained from two sources i.e. either from primary sources or secondary sources. The data which are used for first time for the purpose of research work is known as primary data. These types of data are original in nature. Similarly, the data already in was or processed for statistical work is known as secondary data. This study on portfolio analysis of commercial banks is based on secondary data.

3.5. Data collection techniques:

This research study is based on secondary data. So for the purpose of the study, data are collected from the website of NEPSE (www.nepalstock.com). in this website the financial statement of different listed commercial banks are placed and per the are collected for study.

3.6 data analysis tools

After the collection research data analysis of the data is to be done the data can be analyzed using both statistical and financial tools.

3.6.1. Statistical tools

3.6.1.1. Arithmetic mean

Arithmetic mean also called ‘the average’ or ‘the mean’ or ‘arithmetic average’ is the ratio of the sum of all observation to the number of observations. If $x_1 + x_2 + \ldots\ldots\ldots\ldots X_n$ denotes ‘n’ variety values of the random variables x_1 then the arithmetic mean denoted by

$x = (x_1+x_2+\ldots\ldots x_n) \div n$

$= \sum x \div n$

Where,

$\sum x$ = sum of observation

N = number of observation

3.6.1.2. Weighted arithmetic mean

Simple average method assumes that all the items under consideration are of equal importance in the distribution. But in many cases, the relative importance of the items in the distribution is not same. In such a situation the relative importance are considered weights of the variable and weight average is to be completed. Mathematically, if x_1, x_2.....x_n denotes the variables with corresponding weights w_1 „w_2 …… w_n respectively ('w' may denote the percentage of weighted form) then the weighted arithmetic mean is given by,

$$x_w = \frac{w_1x_1 + w_2x_2 + \ldots\ldots\ldots..w_nx_n}{w_1 + w_2 + \ldots\ldots\ldots..w_n}$$

$= \sum w_x \div \sum w$

3.6.1.3. Standard deviation

Karl Pearson first introduces the concept of standard deviation in 1983. Standard deviation is the positive square roots of the arithmetic average of the square of the all the deviations measured from the arithmetic average of the series. The square of the standard deviation is called variance. The standard deviation measures the absolute dispersion of a dispersion of distribution. The greater the amount of dispersion the greater the standard deviation, i.e. greater will be the magnitude of the deviation of the values from their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeity of a series. If x_1 , x_2 …….x_n denotes a set of 'n observation then its standard deviation is given by standard deviation $(\delta) = \sqrt{\Sigma x^2 - x^2}$/n

Where x = observations set $\bar{x}$ = arithmetic mean

N= no of observations.

3.6.1.4. Coefficient of variance (C.V)

The coefficient of variance measures the risk per return. If is the ratio of standard deviation of return to the mean of that distribution. If is a measure of relative risk. Symbolically, coefficient of variance (C.V) = $\delta \div x$

Where, δ = standard deviation x = mean

3.6.1.5. Correlation (r)

The correlation analysis is the technique used to measure the closeness of the relationship between the variable. If two quantities vary in related manners so that a movement an increase or decrease is one tend to be accompanied by movement in the done or opposite direction is the other, they are called correlated if the relationship is inverse they are called negatively correlated. If any change in ons does not affect the other variable they are called uncorrelated. Symbolically, correlation = $covx,y / \delta_x \times \delta_y$

$covx,y$= correlation between 'x' and 'y' variable

$\delta_x \times \delta_y$= standard deviation of variable 'x and 'y' respect.

3.6.2. Financial tools

Return on common stock on investment plus any change in market price, usually expressed as percentage of the beginning market piece of investment. Symbolically, $R_1 = D_1 + p_1 - p_0 / p_o$

Where R_1= actual rate of return on common stock

D_1 = cash dividend received at the end of yr

P_1= ending price of level

P_0 =beginning price of stock

3.6.2.2. Expected return on common stocks

One of the main aims of this study is to determine the expected return on the investment in common stock. Generally, this is obtained by arithmetic mean of the one- years return .symbolically: $R_1 = \sum R_1 \div n$

Where, R_1 = expected rate of return on stock

n = number of years that the return are taken

3.6.2.3. Beta (β) :-

It is modern technique to measure systematic risk of an investment or is an index of systematic risk. It measures the sensitivity of a stock , return on the market portfolio . Symbolically,

$B_1 = \text{cov } R_1, R_m \div \delta^2_m$

Where ,

B_1 = beta coefficient of stock

cov R_1, R_m = covariance between R_1 or R_m

δ^2_m = variance of market return risk

Systematic risk and unsystematic risk

Total risk (r^2) = systematic risk ($\beta^2 \delta^2_m$) + unsystematic risk (δ^2_c) standard error = $\sqrt{\delta 2c}$

Coefficient of determination or proportion of systematic risk (r^2) and proportion of unsystematic risk ($1-r^2$)

Proportion of systematic risk (r^2) = systematic risk ÷ total = $\beta^2 \delta^2_m \div \delta^2$

Correlation with market = r = $\sqrt{r2}$ proportion of unsystematic risk = ($1-r^2$)

3.7. Method of analysis and presentation

Results are presented in tabular form and clear interpretation on is given simultaneously. Detail calculation is presented in appendices' at the end of report. To make simple and easily understandable chart, diagram and graphs been used. Summary, conclusion and recommendation are presented finally

3.8. Chapter plan / Scheme

This study is divided into five chapters;

Chapter I : Introduction includes background of the study, focus study. Statement of problems, objective of the study need and important and importance o study and originations of study.

Chapter II : review of literate includes review of various books**,** journals and review of related studies.

Chapter III: research methodologies include the research design data collection procedures tools for analysis, method of analysis and presentation.

Chapter Iv: data presentation, interpretation and analysis include the analysis of risk and return of the common stock of selected joint return banks. Comparison of sample banks with marker inters of risk and return beta and portfolio analysis.

Chapter V: summary, conclusion and recommendation are presented in this chapter.

CHAPTER-FOUR
DATA PRESENTATION AND ANALYSIS

4.1. **Introduction**

Presentation and analysis of data major parts of this research study. The purpose of the study is to analyze the risk and of market of selected banks, and to show the effect of diversification among the sample banks. It also attempts to calculate the beta and required rate of return using CAPM from selected samples. After collecting the necessary data this section of study attempt to analyze, interpret and present the data so that some conclusion can be drawn for the objection of this study.

This chapter deals with data presentation, analysis and interpretation following the research methodology presented in the third chapter. In order to meet the objectives, required data collected and processed to arrive at concrete conclusion. Thus in this course of analysis, data gathered from various sources have been presented in the tabular form. By using financial and statistic; tools the data have been analyzed. The result of the computation have been summarizes. The result of the computation has also been summarized in appropriate tables.

4.2 Analysis of market risk-return and risk free rate of return

Nepal a developing economy condition, has only one small size and immature stock market which is yet to cross its length year of operation. It regularly publishes the level and movement of index of stock market . Market risk and return can be known from the index of stock market.

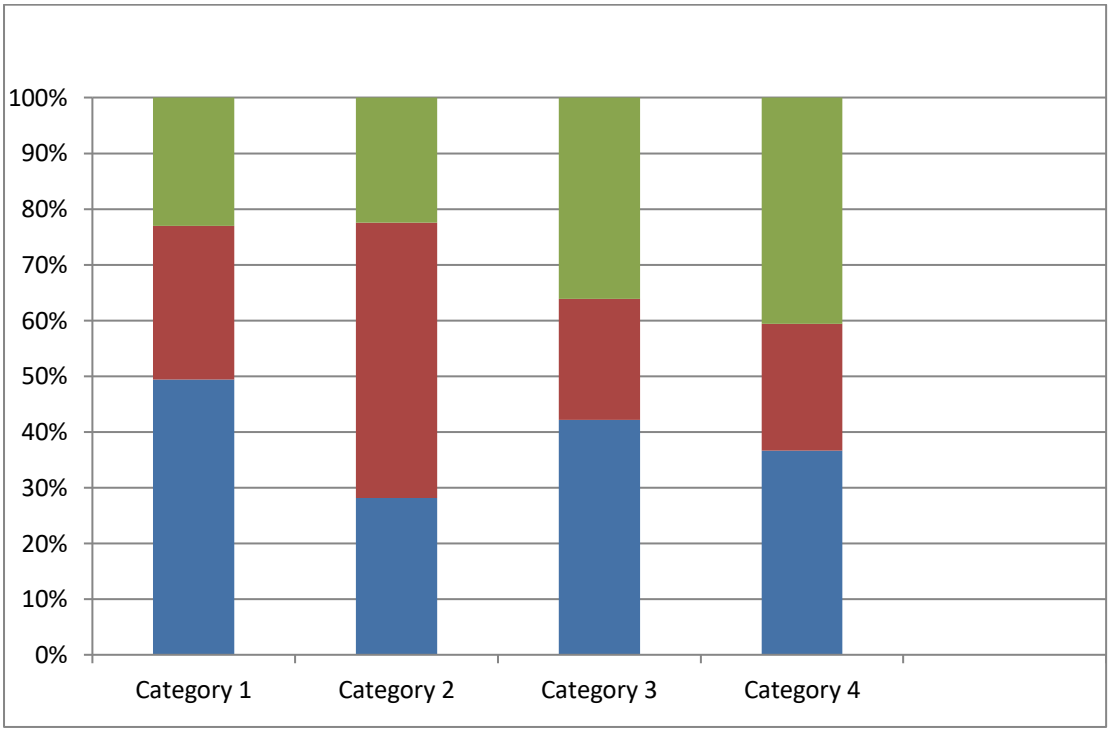
The table which is presented below shows the yearly movement of index from the 2003 to the period of this study. The indices of NEPSE index are take at the end of fiscal year of the 31st ashad or 17th july is presented in the table and is also presented in the graph below:

Table no. 1:
Table showing the NEPSE index

Year	NEPSE Index
July 2003	204.9
July 2004	222.0
July 2005	286.7
July2006	386.8
July 2007	683.9
July 2008	963.4
July 2009	749.1
July 2010	477.7
July 2011	362.9

Source : Quarterly economic Bulletin mid October 2012, Nepal Rastriya Bank

Graph no:-1



The risk free rate of return is the return of a risk-free asset. All corporate securities in principle have some change of default a corporation cannot issue the risk-free asset. The risk free returns should be free of

interest rate risk, default risk, reinvestment risk and market ability risk. A typical short-term security issued by government has almost free of any risk . To calculate risk-free of return for the period of this study. The treasury bills issued by Nepal Rasta Bank on the behalf of government are taken into consideration. A 364 days T-bill is free default risk, interest-rate risk, reinvestment risk, marketability risk and also from inflation risk because of very short period of maturity, the risk-free rate of return is calculated by finding the arithmetic mean of risk-free rate of return fiscal year 31st Ashad of 17th july is presented in the table and is presented in the graph below.

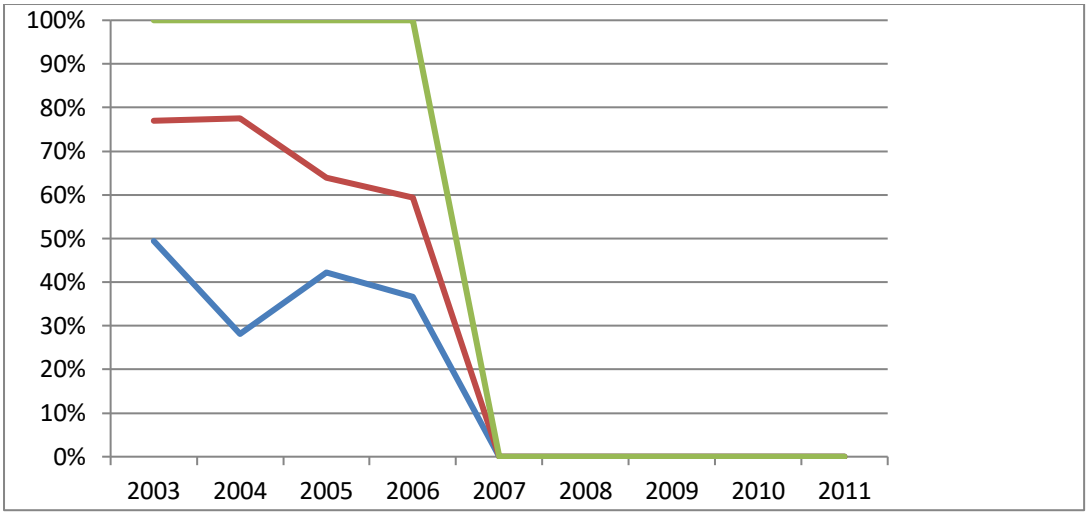
Table No. 2 :

Table showing the T-bill return

Year	T-bills return
July 2003	4.71
July 2004	4.15
July 2005	4.32
July 2006	3.95
July 2007	3.50
July 2008	5.49
July 2009	6.06
July 2010	7.85
July 2011	8.35
July 2012	2.94

Source : Quarterly Economic Bulletin, mid-October 2012 Nepal Ratra Bank.

Graph No. 2 :



Source: Annual movement of rate of return of T-bills [364 days].

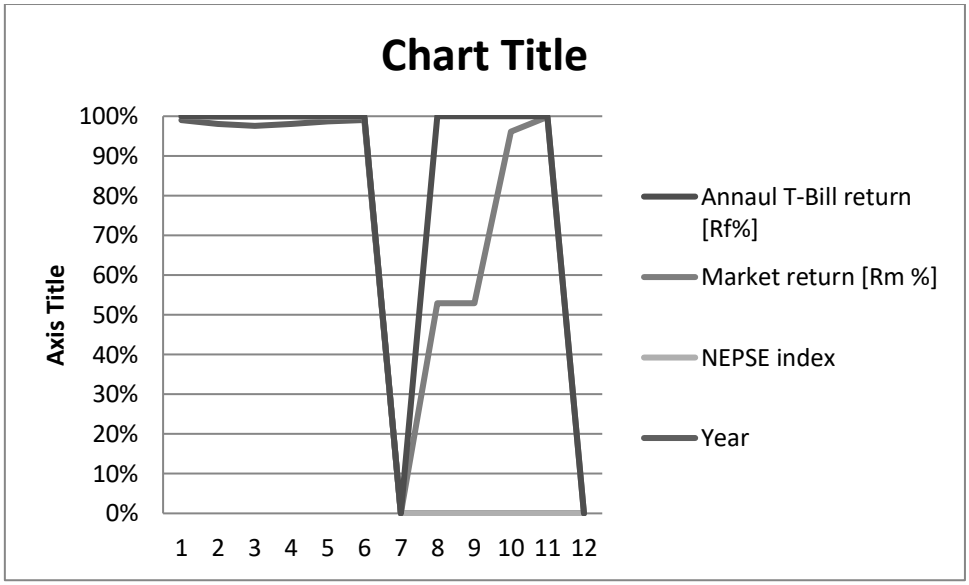
The table presented below shows the NEPSE index, T-Bill rate of return and risk and return of market with risk free rate of return.

Table No. 3 :

Table showing the NEPSE index and T-Bill

Year	**NEPSE index**	**Market return [Rm %]**	**Annaul T-Bill return [Rf%]**
July 2006	386.8	-	
July2007	683.9	76.81	3.50
July2008	963.4	40.87	5.49
July2009	749.1	22.24	6.06
July2010	477.7	36.23	7.85
July2011	362.9	24.03	0.35
Total		35.18	31.25
Average return		7.04	6.25
Standard deviation		44.06	1.74
Variance		1941.45	3.03

Graph No. 3



Source : Annual Movement of NEPSE index from 2007 to 2012.

The Table -1 the figure shows the sharply increasing phrase of NEPSE index from year 2003 to 2008 and again it decreases thereafter to year 2011. But in the year 2012 if increases. The lowest point of NEPSE index can be observed in year 2003 when the index went down to 204.9 points and the highest point of NEPSE index can be observed in the year 2008 of 963.4 point.

Based on the calculation of NEPSE index of table no.3 during these periods, the average market return found to be -34.25% . While the variation in the return {variance} is found to be 775.07% . The standard deviation is found to be 27.84%. As a whole negative rate of return with high risk.

T-Bill return is in increasing and decreasing phrase from the year 2003 to 2007, shows in table no.2 but after the year 2007 it goes on increasing sharply upto year 2001. And then again it decreases in the year 2012. By observing the table and graph no . 2 the lowest annual T-Bill return can be observed in year 2012 of 2.94% and the highest annual T-Bill return can be observed in year 2011 of 8.35%.

Based on the calculation during the period of table no. 3 it can be observed that the return of T-Bill is found to be 6.14%. while the variation in the return {variance} is found to be 3.70%. The standard deviation is found to be 1.92%.

4.3. Analysis Banking Sector :

Banking sector dominates all other sector in the stock market . Investors want to invest more in banking sector rather than the other sector. In the stock market almost 80% of the daily transactions accounts for the banking sector. Their market price is also higher than the other sector. They regularly pay dividend to investor. In Nepal there are altogether 32 commercial banks having two government and rest joint venture and private bank.

People are satisfied with the service and hold the view that the jobs of banking sectors are better than other jobs. If the investment is made in two or more than two banks or asset then it is termed at the case of portfolio investment. However, this study mainly focuses on the return and risk of stock of selected joint venture banks, correlation among them and the risk and return portfolio. It also calculates the risk of stock in term of market i.e. beta, finally the compassion is done between the required rate of return and expected rate of return.

4.3.1 Siddhartha bank limited [SBL] The following table shows the relevant data of mps and calculation of cry and rectum of SBL.

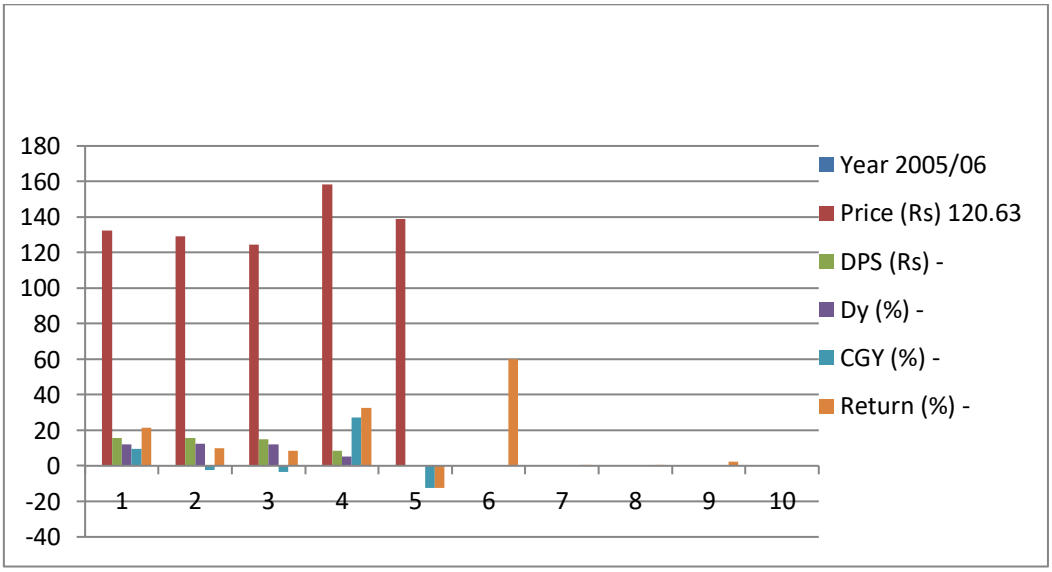
Table no:-4 Table mentioned the MPS ,cry and return of stock of Siddhartha bank ltd from 2006/07 to 2010/11.

Year	Price (Rs)	DPS (Rs)	Dy (%)	CGY (%)	Return (%)
2005/06	120.63	-	-	-	-
2006/07	132.28	15.79	11.94	9.66	21.6
2007/08	129.03	15.79	12.24	-2.52	9.72
2008/09	124.56	15	12.04	-3.46	8.58
2009/10	158.44	8.42	5.31	27.20	32.51
2010/11	138.92	0	0	-12.32	-12.32
				Total	60.09
				Average return	12.02%
				Standard deviation	14.97%
				Variance	224.24%

Source: Appendix

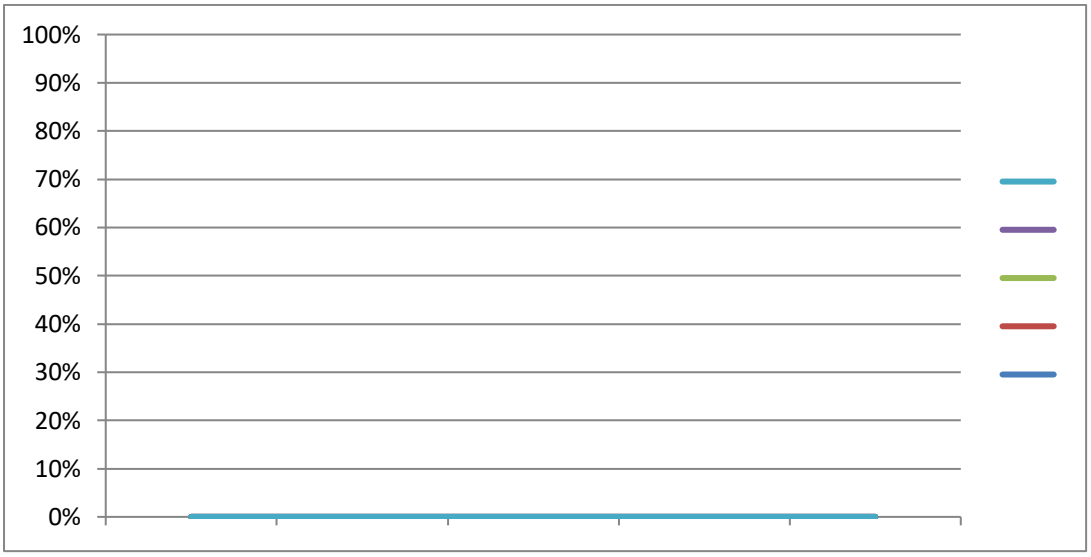
The graph presented below dhows the relationship among cry, stock return and by of ABL as well the relationship between DPS and MPS.

Graph no:-4



Graph No.5

DPS and MPS of Siddhartha Bank limited [SBL] .



From the given table and graph it is observed that MPS of Siddhartha bank goes on fluctuating from the year 2005/06 to 2010/11 dividend of Rs.15.79,15.79,15,18.42 in the relevant year but in the year 2010/11 it's not offered. The highest return on stock was in the year 2009/10 of 32.51% and the lower return was in the year 2010/11of -12.32%

The average return of SBL during period is found to be 12.025%variance is found to be 14.97%

4.3.2 NMB bank ltd [NMB]

The following table shows the relevant data of MPS, DPS and calculation of by, cry and return of NMB bank during the year 2005/06 to 2010/11

Table no:-5

Table mentions the DPS, MPS, CRY, DY and return of stock of NMB bank from 2006/07 to 2010/11

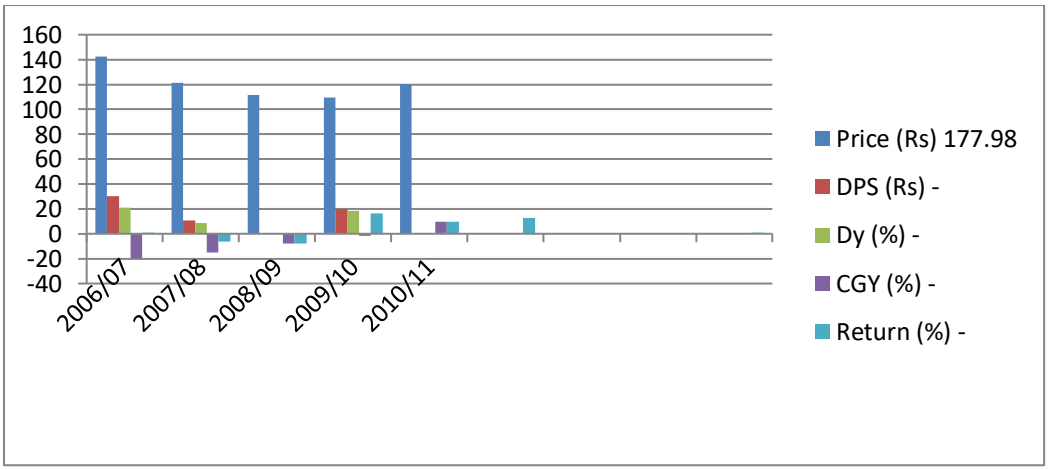
Year	Price (Rs)	DPS (Rs)	Dy (%)	CGY (%)	Return (%)
2005/06	177.98	-	-	-	-
2006/07	142.56	30	21.04	-19.90	1.14
2007/08	121.35	10.53	8.68	-14.88	-6.2
2008/09	111.75	0	0	-7.91	-7.91
2009/10	109.68	20	18.23	-1.85	16.38
2010/11	120.13	0	0	9.53	9.53
				Total	**12.94**
				Average return	2.59%
				Standard deviation	9.25%
				Variance	85.59%

Source: Appendix

The graph presented below shows the relationship among CGY, stock return and DY of NMB bank as well as the relationship between DPS and MPS.

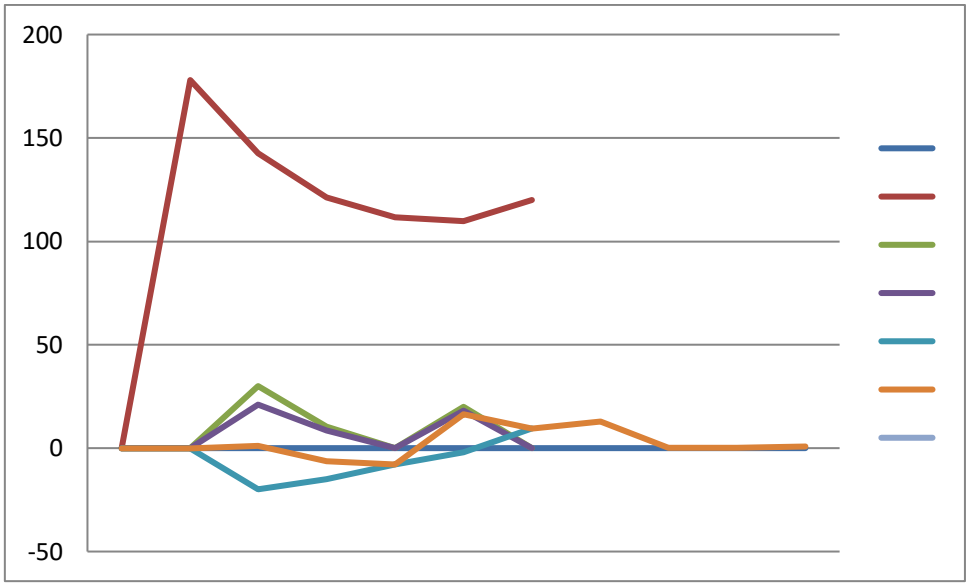
Graph No. 6

DY, CGY and return on stock of NMB bank



Graph No. 7

DPS and MPS of NMB bank limited [NMB]



NMB bank offered dividend of Rs.30, Rs10.53, Rs .0 in the relevant year. The highest return can be observed in year 2009/10 of 16.38%. Whereas the lowest return was observed in year 2008/09 of -7.91%

The average return of NMB bank is found to be 2.59%.The standard deviation and variance, which measures the risk, is found to be 9.25% and 85.59% respectively.

4.3.3 Bank of Kathmandu [BOK]

The following table shows the relevant data of MPS, DPS and calculation of Dy,CRY and return og BOK, during the year 2005/06 to2010/11

Table no:-6

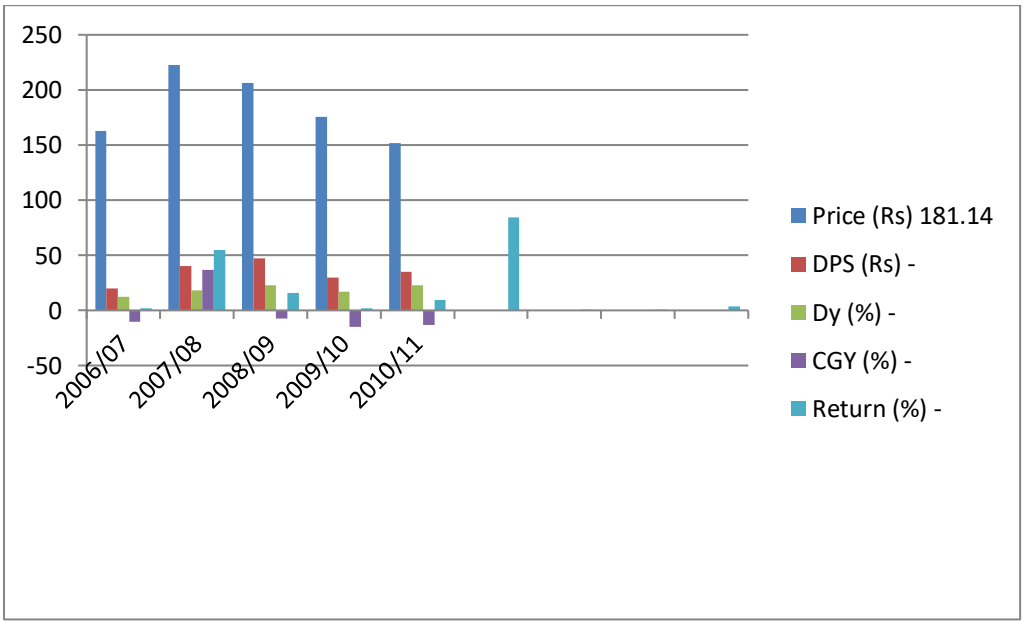
Table mention the DPS, MPS, CRY, DY and return of BOK from 2005/06 to 2010/11.

Year	Price (Rs)	DPS (Rs)	Dy (%)	CGY (%)	Return (%)
2005/06	181.14	-	-	-	-
2006/07	162.81	20	12.28	-10.12	2.16
2007/08	222.51	40	17.98	36.67	54.65
2008/09	206.25	47.37	22.97	-7.31	15.66
2009/10	175.40	30	17.10	-14.96	2.14
2010/11	151.80	35	23.06	-13.45	9.61
				Total	84.22
				Average return	16.84%
				Standard deviation	19.57%
				Variance	382.97%

Source: Appendix

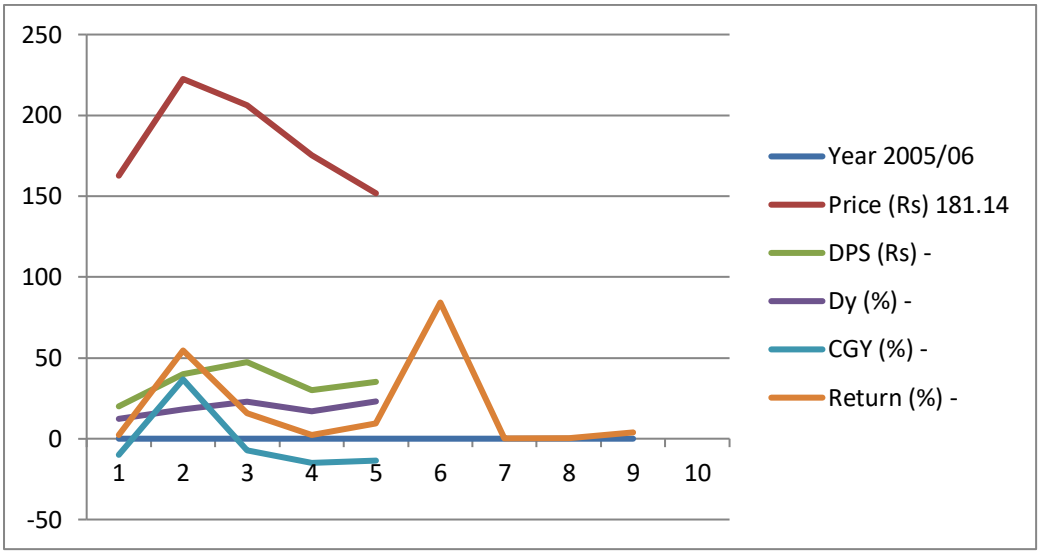
The graph presented below shows the relationship among cry, stock return and dy of bank of Kathmandu as well as the relationship between MPS and DPS

Graph no:-8



Graph No. 9

DPS and MPS of BOK



From the above table and graph it is observed that MPS is fluctuating throughout the 5 year period. The cry is negative in 2006/07 and from 2008/09 to 2010/11. And the highest cry is found 36.67% in 2007/08.

The bank offered dividend of Rs.20, Rs.40, Rs.47.37, Rs.30, Rs.35 from the year 2006/07 to 2010/11.Highest return of 54.65% can be seen in year 2007/08 and lowest return of 2.14% can be seen in year 2009/10%

The average return is found to be 16.84%. The standard deviation is found to be 19.57% and variance is found to be 382.97%.

4.3.4 Nepal investment bank [NIB]

The following table shows the relevant data of MPS and calculation of cry and return of NIB from the year 2005/06 to 2010/11

Table no:-7 Table mentions the DPS, MPS, CRY, DY and return of stock of NIB from the year 2005/06 to 2010/11.

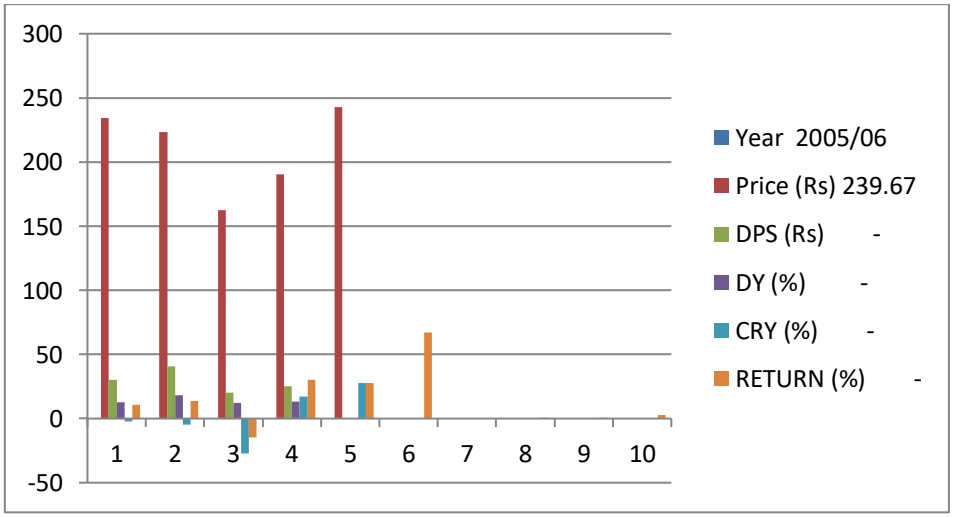
Year	Price (Rs)	DPS (Rs)	DY (%)	CRY (%)	RETURN (%)
2005/06	239.67	-	-	-	-
2006/07	234.37	30	12.80	-2.21	10.59
2007/08	223.17	40.83	18.29	-4.78	13.51
2008/09	162.35	20	12.32	-27.25	-14.93
2009/10	190.34	25	13.13	17.24	30.37
2010/11	242.78	0	0	27.55	27.55
				total	67.09
				Standard return	13.42 %
				Standard Variance	16.12 %
					259.74%

Source: Appendix

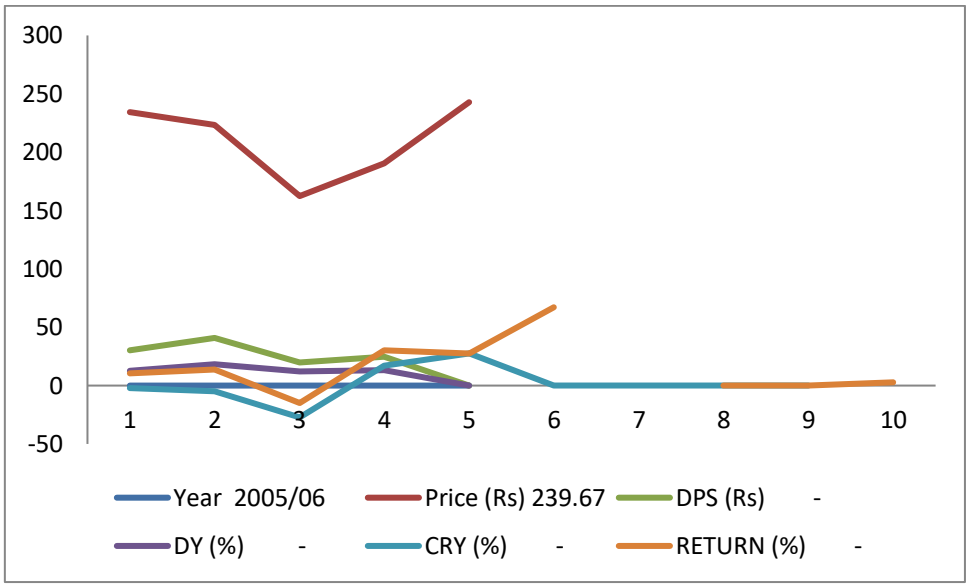
The graph presented below shows the relationship among CGY, Stock return and DY of NIB as well as the relationship between DPS and MPS.

Graph No. 10

DY, CGY and Return on Stock of Nepal investment bank.



Graph No. 11
DPS and MPS of NIB.



From the above table it is observed that MPS decline up to year 2008/09. But after that it gradually increases in the year 2009/10 and 2010/11. The cry is negative from year 2006/07 to 2008/09. And the highest cry is 27.55 in 2010/11.

The bank offered dividend of Rs.30, Rs.40.83, Rs.20, Rs.25 and Rs.0 from the year 2006/07 to 2010/11. The highest return is 30.37% in the year 2009/10 the lowest return is – 14.93% in the year 2008/09.

The average return is found to be 13.42%. The standard deviation is 16.12% and variance is 259.74%.

4.4 summary result of banking sector

The following table which is presented below give the overview on calculated summary result of the analysis of banking sector.

Table No 8 :

Table showing the return and risk of selected banks

Banks	Return {%} X	Variance {%}	Standard deviation {%}	Coefficient of variation=$\sigma/$
SBL	12.02	224.24	14.97	1.25
NMB	2.59	85.59	9.25	3.57
BOK	16.84	382.97	19.57	1.16
NIB	13.42	259.74	16.12	1.20

Source: Appendix

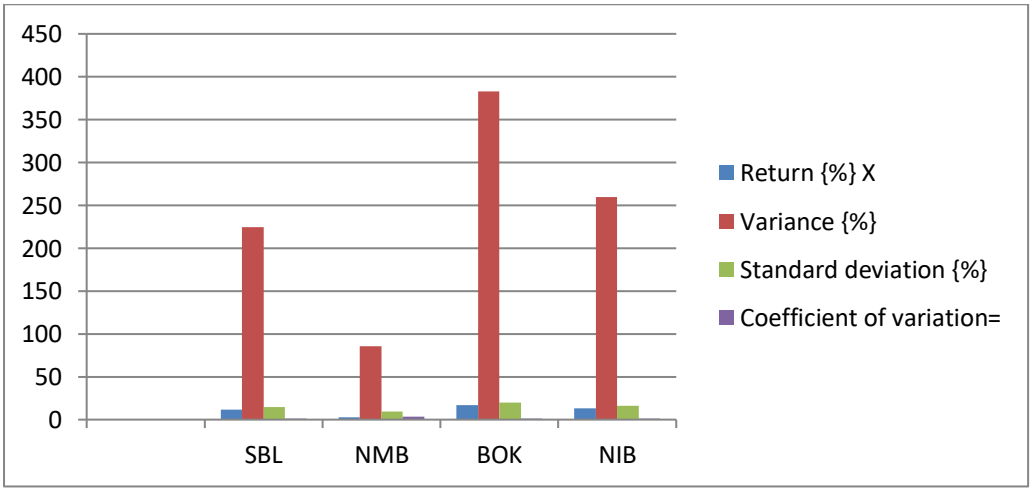
The table above summarige the analysis of banking sector. The table presents the BOK with nigh return and high risk among the four selected banks. The NMB bank lower return with lower risk.

Higher the coefficient of variation [C.V.] higher the risk and lower the coefficient of variation [C.V.] lower the risk. Here, C.V. is an important tool for measuring the variability of return. According to this fool of measurement NMB bank is risk and BOK is least risky.

The following graph presents the above table so that comparison can be done easily.

Graph no:-12

Risk, return and C.V. of selected banks.



4.5 Analysis of covariance and correlation Analysis some degree of some degree of covariance in the market price of various securities can be observed the covariance measure now two variable co vary. Covariance's indicated as cov.

The correlation coefficient is standard statistics measure of the linear relationship between two variables. Ti ranges from 1 to it. If the correlation is negative it states that the risk can be eliminated. Correlation is indicated by 'r' .

In this part the numerical value of covariance and correlation among the price of securities is presented. $Cov_{xy} = \sum p_1(R_x - R_x)(R_4 - R_4)$

In case of historical return.

. $Cov_{xy} = \sum p_1(R_x - R_x)(R_4 - R_4) \div N$

Mathematically for correlation (r_{xy})

$R_{xy} = cov_{x,y} \div \partial_x \partial_y$

4.5.1 Covariance and correlation analysis of banking sector.

Generally the movement of bank shares prices seems to be positive which indicated that when the prices of the one banks shares increase other banks also follow the trend. The table presented below shows the covariance, variance and coefficient of correlation of return on stock with banking sector .

Table no 9 variance and covariance of banking sector between period of 2006/o7 to 2010/11

Bank	SBL	NMB	BOK	NIB
SBL	224.24	31.22	- 69.75	14.72
NMB	31.22	85.59	110.31	126.56
BOK	-69.75	-110.31	382.97	-54.58
NIB	14.72	126.56	-54.58	259.74

Source: appendix

Table No 10:

Correlation coefficient matrix for banking sector between periods of 2006/07 to 2010/11.

Bank	SBL	NMB	BOK	NIB
SBL	1	0.23	- 0.24	0.06
NMB	0.23	1	-0.61	0.85
BOK	0.24	-0.61	1	-0.17
NIB	0.06	0.85	0.17	1

Source: appendix

In order to invest for the above tables gives very important information especially the second table is more important. The table indicated the relation among the share prices of given banks . The coefficient of correlation between SBL and SBL is 1 which itself vary with perfectly. Then coefficient of correlation between SBL and NMB is 0.23 which indicates the shares prices of SBL and NMB is positively correlated if the share prices of NMB increase by 100% then, the share prices of SBL increase by 23% similarly , if the share prices of NMB decrease, the share prices of SBL also decreases. The coefficient of correlation between SBL and BOK is 0.24 which indicated the share prices of SBL and BOK is negatively correlated. If the shares price of BOK is increase by 100% then, the shares prices of BOK decrease by 24% and vice versa. The coefficient of correlation between SBL and NIB is 0.06 which indicated the shares prices of SBL and NIB is positively correlated. If the share prices NIB increase by 100% then, the share prices of SBL increase by 6% and vice versa . The coefficient of correlation of correlation between NMB and BOK is – 0.61 which is negatively correlated . If the shares prices of NMB increases by 100% then, the share prices of correlation between NMB and NIB is 0.85 which is positively correlated. And the coefficient of correlation between BOK and NIB is -0.17 which is negatively correlated to each other. If the share prices of BOK increase by 100% then, the share prices of NIB decrease by 17% and vice versa. The above table of banking sectors covariance and correlation analysis summarizes that NMB and NIB has highest positive degree of correlation similarly , SBL

and NIB share lowest positively degree of correlation. And bank NIB and BOK has highest negative degree of correlation .

4.6 Analysis of diversification :

Portfolio is the act of investing the funds in two or more than two securities which helps in diversifying the risk. In other way well diversified portfolio reduces the risk. In this potation of the study, it is attempted to test the effect of diversification. Furthermore the role of covariance in selecting optimal combination of securities and weighted of investment is also tested. Portfolio theory suggests that positively correlated securities do not reduce the risk where as negatively correlated securities reduce the risk.

4.6.1 Analysis of diversification in banking sector :

Selecting two samples, say SBL and NMB following data related to two samples are already calculated.

	SBL	**NMB**
Expected return	12.02%	2.59%
Variance	224.24%	85.59%
Covariance	31.22%	

If an investor decides to invest 'wi' portion of his/her investable fund into the stock of SBL . Similarly , (i-w1) of funds will be invested in NMB Stock . The expected return from portfolio can be fund by using the equation,

RP = WA x RA + WB×RB

= WA x RA + (1-WA)xRB

Table No. 11:

Table showing the expected risk and return portfolio for various levels of investment between the shares of SBL and NMB.

Wi	**1-wi**	**Expected return portfolio**	**Standard deviation portfolio (sp)**	**Variance portfolio (S2P)**

1	0	12.02%	14.97 %	224.24%
0.9	0.1	11.08	13.72	188.11
0.8	0.2	10.13	12.53	156.93
0.7	0.3	9.19	11.43	130.69
0.6	0.4	8.25	10.46	109.41
0.5	0.5	7.31	9.65	93.07
0.4	0.6	6.36	9.04	81.68
0.3	0.7	5.42	8.67	75.23
0.2	0.8	4.48	8.59	73.74
0.1	0.9	3.53	8.79	77.19
0	1	2.59	9.25	85.59

Source : Appendix

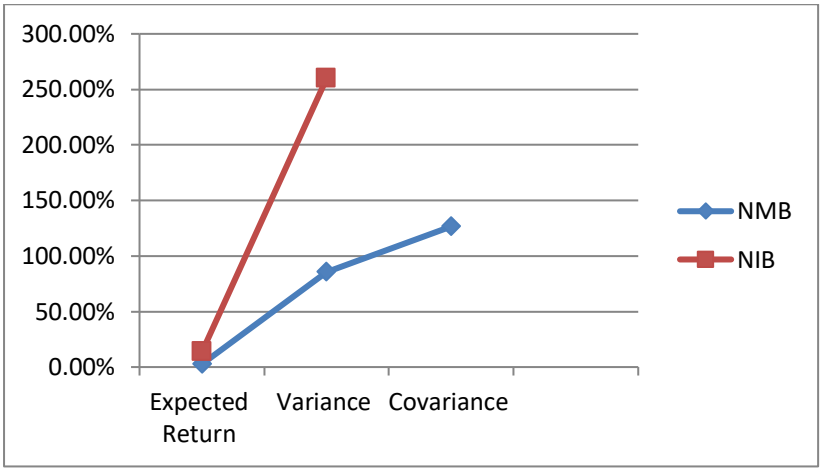
Above presented table states the risk and return portfolio consisting two securities. One is SBL and other one is NMB. in the above table first row shows that the investor invests all of his funds in SBL and no portfolio is formed. The return and risk of portfolio is just what the SBL has. Second row of table shows that the investor puts 90%. of his fund in SBL and 10% of his fund in NMB. Which shows the formation of of portfolio and it's return and standard deviation portfolio is 11.08% & 13.72%. Since, in two assets return on SBL is high i.e. 12.02% and return on NMB is 10w i.e. 2.59% . if the investor is risk seeker then he would be investing entire available fund on the assets of SBL. Here, we assume investor is rational and calculates risk is order to make appropriate investment decisions and prefer to invest in portfolio of the assets where risk is minimum.

From the above calculation we can observe that the portfolio construction of 20%. if SBL and 80% of NMB seems to be least riskier because its standard deviation portfolio [sdp] is lowest amount than other portfolios i.e. 8.59% and expected return [RP] is 4.48% that why this portfolio is selected as a ration al investor.

Table no.11 can be presented in graphic form too such graph is called efficient frontier . An efficient frontier is focus of all the combination of portfolio risk ad return. Graph of efficient frontier is presented below.

Graph no. 13

Risk portfolio of stock of SBL and NMB.



The two points at the top of curve is almost desirable point. The two point are called efficient frontier and dominate all other point at given curve. An investor should always try to be at efficient frontier.

Another investor may select two common stocks. one of NMB and dominate all other point at given curve. An investor should always try to be at efficient frontier.

Another investor may select two common stocks. One of NMB and other of NIB. The covariance between the stocks return is positive. Following data related to two samples are already calculated.

	NMB	**NIB**
Expected Return	2.59%	13.42%
Variance	85.59%	259.74%
Covariance	126.56%	

The investor's investment in NMB is 'wi' and investors' investment in NIB is 1-wi' following table table presented below shows the return and risk portfolio at different level of investment.

Table No. 12:

Table showing the expected risk and return portfolio for various levels of investment between the shares of NMB and NIC.

Wi	1-wi	Expected return portfolio	Standard deviation portfolio (sp)	Variance portfolio (S2P)
1	0	2.59%	9.25 %	85.59%
0.9	0.1	3.67	9.73	94.71
0.8	0.2	4.76	10.28	105.67
0.7	0.3	5.84	10.88	118.47
0.6	0.4	6.92	11.54	133.12
0.5	0.5	8	12.23	149.61
0.4	0.6	9.09	12.96	167.95
0.3	0.7	10.17	13.72	188.13
0.2	0.8	11.25	14.50	210.16
0.1	0.9	12.34	15.30	234.03
0	1	13.42	16.12	259.74

Source : Appendix

Above presented table states risk and return portfolio at different level of proportion consisting two securities. The last table shows that the highest return can be achieved by investing the entire fund in NIB and no portfolio is formed. Hence, the objective of portfolio is not to increase return but to reduce risk. The lowest level of risk in the table can be found out by investing 100% of fund in NMB and 0% of fund in NIB . The meaning of portfolio cannot be confined with the limit of just two securities . A portfolio can also be more than two securities. An investor can invest his fund in all selected securities of banking sector. In this case the risk and return portfolio can be calculated by selecting the proportion on investment randomly.

4.7 Analysis of undiversified risk / Beta Analysis

The total risk of portfolio has two fold of aspect one is systematic risk and other is unsystematic. Systematic risk is the risk, Which cannot be eliminated. Beta coefficient is the index of systematic risk. It is an indicator of the relationship between the individual investment's return and the general market return. The beta is simply the slope of characteristics line and if is indicated by "B" .

Unsystematic risk is the risk, which can be eliminated if properly diversified of investment.

In this part of analysis , the betas for all four selected banks are calculated.

Beta [Bi] = Cori,m × S^2m

and

Cov×,4 = E[Rx-Rx] [Ry-R4]xN

Where,

Covx,4 = Covariance of security 'i' with market 'm'

S^2m = Variance of market.

Following table presents the covariance between each sample's return and market return.

Table No. 13:

Table showing the covariance between the return of market and other securities during the period of 2006/07 to 2010/11.

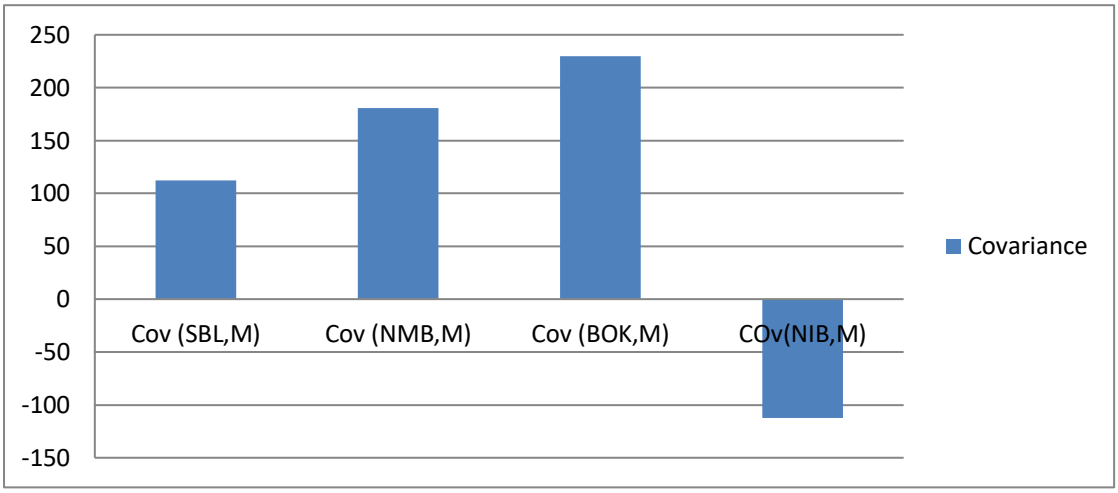
Banks and Markets	Covariance
Cov (SBL,M)	112.19
Cov (NMB,M)	180.68
Cov (BOK,M)	230.03
COv(NIB,M)	-112.33

Source : Appendix

The covariance of all selected banks with the market that is listed in the table no. 13 is presented in the graph as shown below,

Graph No. 14:

Graph showing the covariance between the return of market and other securities during the period 2006/07 to 2010/11.



The variance of market is 1941.45, Which is calculated in table no. 3.

Table no. 14 :

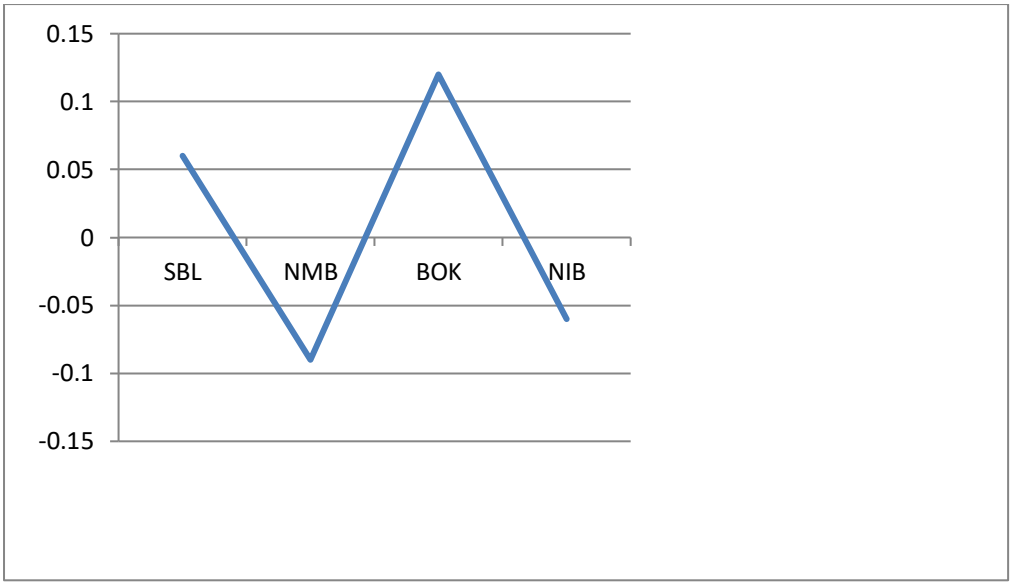
Table Showing the beta for all selected sample banks during the period of 2006/07 to 2010/11.

Banks	Beta [Bi] = Covi,m êsˆ2m
SBL	0.06
NMB	-0.09
BOK	0.12
NIB	-0.06

Variance of the market return [s^{2m}] = 1941.45 . The following graph presents the overall look of betas for all securities .

Graph no. 15:

Graph showing the beta of all selected banks as the sample during the period of 2006/07 to 2010/11.



4.8 Required rate of return by security market line.

With the help of SML, the overpriced and underpriced stock can be located. If the expected return [Ri] is more than the required rate of return [RRR] then it is the case of under priced and if the expected return [Ri] is less than the required rate of return then it is the case of overpriced, in this portion of study the required rate of return is calculated here and compared with the expected rate of return which is calculated in the earlier part for getting the decision about the overpriced and underpriced. Overpriced gives the decision to sell the security where as the underpriced gives the decision to buy the security.

Security market line is the graphical representation of the CAPM the relationship between the assets return and its systematic risk can be expressed by the CAPM, Which is also called the SML. The equation for the CAPM is:

Ri = Rf+[Rm-Ri] Bi

The literature on CAPM is already presented in second chapter for the calculation of RRR, the market return [Rm] is 7.04 and risk free rate of return]Ri] is 6.25, which is calculated in earlier part in the table no. 3.

Table no. 15:

Table showing the required rate of return of all selected banks as sample during the period of 2006/07 to 2010/11 .

Banks	Required rate of return RRR =Rf+[Rm-Rf] Bi
SBL	6.25+[7.04-6.25] 0.06=6.30%
NMB	6.25+[7.04-6.25]x-0.09 = 6.18 %
BOK	6.25+[7.04-6.25]x0.12 = 6.34%
NIB	6.25+[7.04-6.25] x-0.06 = 6.20%

Table no. 16:

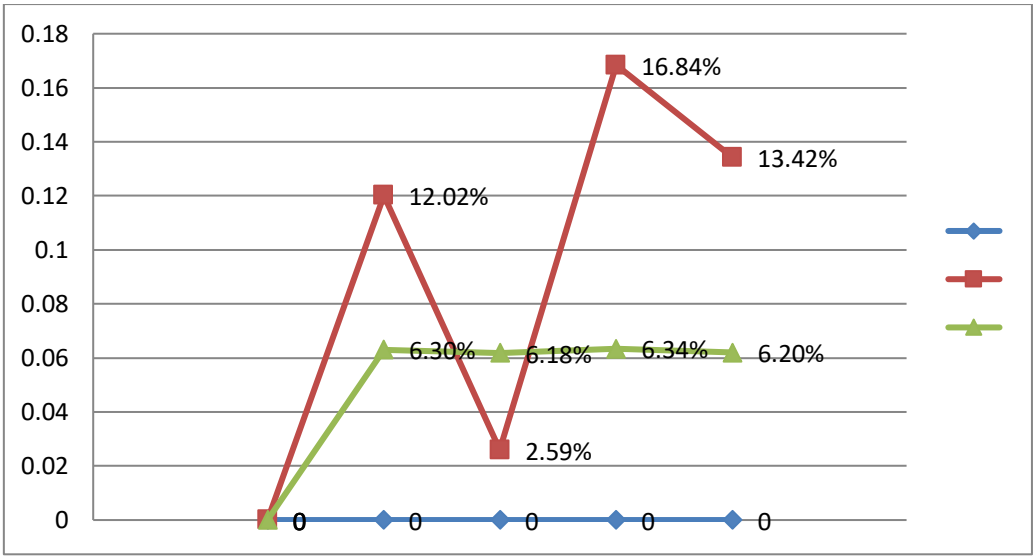
Table showing the comparison between expected rate of return and required rate of return with the buy and sell decision from overpriced and under priced of security.

Banks	Expected rate of return Ri	Required rate of return [RRR] %	Pricing	Pricing Decision
SBL	12.02%	6.30%	Underpriced	Buy
NMB	2.59%	6.18%	Over Priced	Sell
BOK	16.84 %	6.34 %	Underpriced	Buy
NIB	13.42%	6.20 %	Underpriced	Buy

A comparative graph between expected rate of return and required rate of return can also be presented which is shown below :

Graph no. 16:

Graph showing the comparison between expected rate of return and required rate of return with the buy and sell decision from overpriced and underpriced of security.



The above table and graph both shows the expected rate of return and required rate of return. The required rate of return [RRR] on the stock of SBL is 6.30% while the expected rate of return is 12.02% . Investors can invest in the stock of Stock of SBL as it's offering higher rate than the market . The stock of NMB has higher required rate of return i.e 6.18% to than the expected rate of return i.e. 2.59% so, the investor shouldn't invest in the stock of NMB as it's offering lower rate than the expected rate of return i.e. 2.59% so, the investor shouldn't invest in the stock of NMB as it's offering lower rate than the market The stock of BOK has higher rate i.e. 16.84% than the market which required rate is less i.e. 6.34%. Similarly, the expected return of NIB is also higher i.e.13.42% and the required rate is 6.20% . Therefore, the expected rate of return is more than the required rate of return of BOK and NIB . It clearly gives the decision to invest in the Stock of these three banks i.e. SBL, BOK and NIB.

For any rational investor the expected rate of return should be more than the required rate of return. Here, is the above graph the investor would prefer to buy the stock of SBL, BOK and NIB. And would prefer to sell the stock of NMB bank.

4.9 Empirical findings of the study .

The major finding of this part of the study is given below:

a) Risk can be reduced by investing the funds in two or more than two securities i.e. by creating portfolio.
b) Risk can be reduced through the negative degree of correlation [or negative covariance].
c) The creation of portfolio itself needs consideration between/ among the stocks it includes.
d) Greater the number of stocks in the portfolio lower will be the risk. Never- the less, the degree of correlation will matters for this effect.
e) Positive degree of correlation [or positive covariance] is not effective while making a portfolio investment.
f) Higher the beta higher will be the systematic risk.
g) While making the portfolio positive degree of correlation [or positive covariance] is not effective.
h) Any rate of expected rate of return is less than the required rate of return, investors should not entertain it.

CHAPTER – FIVE

Summary, Conclusions and Recommendations

5.1 Summary

Portfolio analysis is the most important factor before any investment in any sector. It has been the central focus of finance. Therefore, before any investment on any security the risk and return analysis is observed. Risk and return are complementary to each other. The return from any investment is realizable cash flows. earned by its owner during a given period of time. On the other hand, risk is the possibility that the actual return from an investment will differ from expected return. It is generally believed that higher the return, higher will be the risk.

The common stock is the risky security. An investment in common stock of a company cannot ensure the annual return and the return of principal. Dividends are paid to the stock- holders only of there will be earning available to equity share holders. In Nepal, there are not various types of securities but due to development of banking industry and manufacturing industry, there is sufficient common stock for attracting Nepalese investors.

To summarize the study on portfolio analysis first chapter includes introduction, brief profile of commercial banks taken under study, focus of the study, statement of problems, objective of the study, need and importance of the study, limitation of the study and organization of the study.

Second chapter includes review of literature where theories of risk and return are including with the concept of portfolio.

Third chapter makes an attempt it review the methodological aspect in brief.

Similar, in the fourth chapter, analytical exploration and main population of data has been presented within the finance of the research

methodology and the analyzed data are presented in suitable forms like tables and diagrams.

Finally, the fifth chapter includes summary of the study conclusions desired from the study and recommend diatons.

The main objective of this study is to analyze the risk and return portfolio on common stock investment on Nepalese stock market and it is focused on four commercial banks listed in Nepal stock exchange limited. Risk and return is not there overnight concept. Risk and return are complex entry to each other. A portfolio may contain bonds, preferred stocks and common stocks of various types of enterprises, since a rational investor always dislike risk, the creation of portfolio is the key to avoid such "Dislike". It is found that collections of securities can diversity the 'unsystematic' portion of risk. The rate of return expected from risk taken. The level of risk is not easy to measure. However, different scholars have suggested various statistical tools like standard deviation, variance, and coefficient of determinates, proportion of unsystematic risk to measure the level of risk associated with a particular assets. As the number of stock increases in a portfolio, the risk will decrease, in order to diversity or minimize the risk will decrease. in order to diversity or minimize the risk securities should be carefully selected. To minimize the risk, negative covariance or negative degree of correlation should be preferred between or among the securities of the portfolio. A portfolio cannot reduce the systematic risk of each security. These. risk are due to external factor and are permanent nature. These risks are measured by beta. In the course of this study brief review of related studies has been performed. The sensitivity of the stock of the sample company using the security is compared with the required rate of return. The expected return should always be higher than the required rate of return to perform much rational investor decision. The collected secondary data has analyzed by using scientific methods and the tables, graphs, diagrams have used to present the data more clearly. The secondary data are collected from the NEPSE Website, journals and concerned banks, and from concerned banks website. Both qualitative analyses have been made to desire the conclusions.

5.2 Conclusions

This study will enable investors to know about the stock market and process of choosing the common stock or investing into a portfolio. Nepalese stock market is emerging state. The sufficient information about the stock market of Nepal is not available easily. So, people are afraid of investing in common stocks. The openness and liberalization is rational economy followed by the nation since political change on 1990, has developing the stock market gradually.

The other findings and conclusions in the course to this study are as follows:-

a) Most of the Nepalese investors invest in simple security due to which the level of risk may increase, and if they invest in more than one common stocks, they select the stock on the basic of expectation and assumption that they will provide higher return at lower risk. But analyzing the risk and return portfolio, return at low risk can't be expected.

b) The frequent change is fiscal and monetary policy, tax policy and inflation also affect the level of risk and return portfolio of common stock.

c) There are various aspects or risk and return portfolio of common stocks, the lack of adequate information and poor knowledge is one of the aspects due to which the investors cannot earn proper return even behaving the high risk.

d) SBL Siddhartha Bank Ltd. has 20.02% return, 14.97% standard deviation and 224.24% variance.

e) NMB bank ltd has 2.59% return, 9.25% standard deviation and 85.59% variance.

f) Bank of Kathmandu Ltd [Bok] has 16.84% return, 19.57% standard deviation and 382.97% variance.

g) Nepal investment bank [NIB] has 13.42% return, 16.12% standard deviation and 259.74% variance.

h) Bok is the best among the sample companies taken under study on the basis of highest return of 16.84%.

i) Standard deviation of BOK is 19.57% which is the highest among the sample banks taken under study.

j) The above risk and return of the sample banks shows that higher the risk higher the return.

k) NMB bank has the lowest rate of return.

l) NMB Bank has the lowest standard deviation and variance.

m) The creation of portfolio cans diversity the risk. The covariance and coefficient is the key for a good portfolio.

n) Only negative correlated stock can diversify the risk, the correlation between SBL & BOK [Rsbl, Box] , NMB and BOR [RNMB , Bok] NIB and BOK [rNIB , BOK] banks taken under the study has negative correlation.

o) More and more stocks in a portfolio safe guard the investor's presences towards low risk.

p) Risk can be of systematic risk and unsystematic risk. Unsystematic risk. Unsystematic risk is the risk, which can be eliminated or adduced. Thus creation of portfolio reduces only systematic risk of stock. Systematic risk is the risk which cannot be eliminated. Systematic risk is due to the external condition on which investor can do nothing.

q) Inconsideration to view of systematic risk the stock of BOK with 0.12 of beta is the highest among the banking sector.

r) Every investor's have a certain required rate of return. The required rate of return [CAPM] is calculated here by using equation of SML. A very important comparison between the expected rate of return and required

rate of return is done here which provides very vital information to the rational investor about the under-price and over price of security.

s) While comparing expected rate of return with required rate of return the entire sample taken banks gives the decision about under pricing of security i.e. to buy the stocks of those banks.

t) Investor always wants their money to return more and more return. A gambling in stock market makes many people penniless. However, a careful study and analysis can always ensure the return is sure for any investments. The prospectus of the company, the risk free rate of return, the nature of sample banks taken under study can be analyzed by the statistics. Published by various source, however the return, covariance, beta, RRR is hard to find for each investment because there is no published data in this regard as it happens in developed countries. The selection of good stock and a better portfolio will always ensure the best return for an investment, a gambling is not taken for sure of a good return.

u) Investors are very pessimistic to trade their stocks. Whatever the price of stock they tend to hold it for long period without knowing the reason to hold such a long period the frequency of trading is very low among investors.

5.3 Recommendations

- Mainly this study is made for the partial fulfillment of M.B.S level. However, this study may be helpful for the individual investors. The following recommendations are prescribed on the basis of data analysis and major findings of this study.

- The stock market of Nepal is in emerging state and possible investors are afraid of investing in secondary market. so, Nepalese , trading rules and regulations, etc. similarly , Napse should development effective information channel to provide the up to data information. The open cry system of trading can't help to develop the stock market in the

modern age of digital technology. Another recommendation to NEPSE is that it should take steps to establish the stock market in other main cities of the countries. The market is concentrated only in the capital city, which is the main difficulty in development of stock market.

- Government also should monitor the activities of stock markets. Manipulation by stock brokers, the company itself should be controlled. The rules and regulations regarding stock market should be amended in time and the attempts should be made for implementations of the rules and regulations. The peace and political stability is the current boning issue of the country, which are the main elements of development of stock market. So, the attempts should also be made to maintain peace and political stability of the country.

- The market sensitivity of common stock also helps to invest the funds. It is better to invest the common stock of beta less than one i.e. defensive stock. But the higher return can't obtain in such investment. The underpriced common stock should be purchased and the overpriced common stock should be sold. This study recommends buying the common stock of all the banks, which is under priced.

- Investors want to minimize expected return subjects to their tolerance for risk. Return subject to their tolerance for risk. Return is the motivation force and the principal reward is the investing process, and it is the key method available to investors in comparing alternative investment. Forces that contribute to variation in return price or dividend interest constitute element of risk. so, investors have to concentrate their mind both risk and return.

- Many companies do not disclose their financial statement in the right time to the general public and to present it to the NEPSE such activity of company does not give the right idea for the investor to invest their funds. so, the concern governing body of the companies should monitor and discourage the cutely disclose and submission of financial statement by a company.

- The stock of banking sector is lubricities in terms of risk and return. Thus, investors are advised to invest core in banking sector.
- People widely perceive the market price of stock as a reflector of financial position of a company. The higher the market price of stock, the better is the position of a company form the point of investor, thus, the company should make every effort to increases the MPS. A regular dividend payment, timely disclosure of financial statement as well dis chargement of social responsibilities is some of good steps for the good effect on stock price. However, a company's own way of functioning and operating all the main point regarding the effect on stock price.
- Investor should not select the stock having the high positive co varied stock while creating the portfolio. This study shows that the rather than selecting the highly positive co-vatied stock it wil be better to select the single security for the investment.
- A company should concern with the stock price of its own share. A listed company must regally monitar the movement of stock price in market and if it is falling, necessary step should be taken in time to know the reason and present the price of stock falling more. Since investors judge a company by its dividend payout policy also, company should also explain the share holders why it doesn't declare any dividend.
- The proper analysis of the individual stock, the industry and the whole market is essential to take an investment decision. The general knowledge about general economic condition tax policy of government, peace and political situation is necessary which affect the price of share. Speculation of common stock may provide good benefit rather investing for a long period.

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Appendix

Nepal Stock Exchange Ltd.								
Singhdubar Plaza, Kathmandu								
Some Key Figures of B/S And P/L Account with brief financial indicator								
of NMB Bank Ltd								
		Audited	Audited	Audited	Audited	Audited	Audited	Unaudited
		2061/62	2062/63	2063/64	2064/65	2065/66	2066/67	2067/68
		2004/2005	2005/2006	2006/2007	2007/08	2008/09	2009/10	2010/11
Brief Financial Indicators								
	Networth Per Share	194.88	177.98	142.56	121.35	111.75	109.68	120.13
	Earnings Per Share	32.05	28.07	37.66	7.28	4.42	9.68	11.63
	Dividend Per share (With bonus share)	31.58	24.29	30.00	10.53	0.00	20.00	0.00
	ROA	2.09%	1.46%	1.70%	0.82%	0.40%	1.21%	1.45%
	Earning Yield (EPS / MPS)	12.82%	10.17%	4.48%	0.78%	0.89%	3.28%	5.97%
	Price Earnings Ratio (In case of old co)	7.80	9.83	22.31	127.71	112.93	30.48	16.76
	Market Price	250	276	840	930	499	295	195
	ROE	16.44%	15.77%	26.41%	6.00%	3.95%	8.83%	9.68%
		Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million
Capital Structue								
	Authorised Capital	400.00	400.00	1000.00	1000.00	2000.00	2000.00	2000.00
	Issued Capital	200.00	200.00	1000.00	1000.00	1501.50	1651.65	2000.00
Liabilities								
	Issued and Paid up capital	100.00	130.00	199.54	1000.00	1424.64	1651.65	2000.00
	Reserve & Surplus	94.88	101.37	84.93	213.48	167.41	159.88	402.65
	Debenture	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Borrwoings	551.29	822.50	937.25	278.11	313.96	380.26	497.20

	Deposits	747.26	862.86	1296.39	1661.60	6877.91	10110.69	12866.22
	Others	43.11	582.90	1902.82	5774.69	7072.74	924.10	328.78
	Total	1,536.54	2,499.63	4,420.94	8,927.89	15,856.66	13,226.58	16,094.85
Assets								
	Cash & Bank Balance	25.13	34.30	34.27	5450.42	7480.35	1729.83	1493.89
	Investment	732.63	1383.93	2829.98	1336.31	2733.09	3298.27	2874.11
	Loan, advances & overdraft	717.20	1004.45	1395.88	1939.97	5194.21	7808.12	11343.09
	Fixed Assets	30.18	32.01	80.18	132.72	223.81	255.29	276.55
	Others	31.40	44.94	80.63	68.48	225.20	135.07	107.21
	Total	1,536.54	2,499.63	4,420.94	8,927.89	15,856.66	13,226.58	16,094.85
Profit and Loss Account								
	Interest Income	148.62	135.87	237.93	251.41	402.58	866.18	1492.39
	Other operating income	13.19	22.89	71.03	68.24	79.52	139.48	134.63
	Non operating income (Net)	1.17	1.73	0.19	23.06	29.28	6.99	43.90
	Total Income	162.98	160.50	309.15	342.71	511.38	1012.66	1670.91
Expenditures:								
	Interest Expenses	79.19	72.34	140.25	139.10	254.26	559.54	1053.30
	Overhead Expenses(Employees)	10.20	11.62	14.21	20.12	40.27	55.96	79.13
	Operating expenses(office mgmt)	12.37	11.55	13.97	32.22	76.98	108.34	136.40
	Loan loss provision	8.75	7.77	19.51	32.39	42.19	40.25	36.43
	Provision for bonus	5.25	5.20	11.02	10.81	8.88	22.60	33.24
	Others							
	Total Expenditure	115.76	108.48	198.97	234.64	422.59	786.69	1338.50
	Profit before tax	47.22	52.02	110.18	108.08	88.79	225.97	332.41
	Tax provision	15.18	15.53	35.05	35.26	25.83	66.09	99.72
	Net profit after tax	32.05	36.49	75.14	72.82	62.95	159.87	232.69

Appendix

Nepal Stock Exchange Ltd.

Singhdubar Plaza, Kathmandu

Some Key Figures of B/S And P/L Account with brief financial indicator of Bank of Kathmandu Ltd

		Audited	Audited	Audited	Audited	Audited	Audited	Audited	Unaudited
		2061/62	2062/63	2063/64	2064/65	2065/66	2066/67	2067/68	2068/69
		2004/2005	2005/2006	2006/2007	2007/08	2008/09	2009/10	2010/11	2011/12
Brief Financial Indicators								1\\\\\\\'st qt	
	Networth Per Share	155.47	181.14	162.81	222.51	206.25	175.40	151.80	160.20
	Earnings Per Share	30.10	43.67	43.50	59.94	54.68	43.08	37.72	8.39
	Dividend Per share	15.00	18.00	20.00	40.00	47.37	30.00	35.00	0.00
	ROA	1.41%	1.65%	1.80%	2.04%	2.25%	2.18%	2.44%	0.52%
	Earning Yield (EPS/MPS)	7.00%	5.14%	3.16%	2.55%	3.12%	5.13%	6.62%	1.89%
	Price Earnings Ratio (In case of old co)	14.29	19.46	31.61	39.21	32.00	19.50	15.11	52.78
	Market Price	430	850	1375	2350	1750	840	570	443
	ROE	19.36%	24.11%	26.72%	26.94%	26.51%	24.56%	24.85%	5.24%
		Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million
Capital									

Structure									
	Authorised Capital	1000.00	1000.00	1000.00	1000.00	1000.00	2000.00	2000.00	2000.00
	Issued Capital	500.00	500.00	606.17	606.17	844.40	1182.16	1359.48	1359.48
Liabilities									
	Issued and Paid up capital	463.58	463.58	603.14	603.14	844.40	1182.16	1604.19	1604.19
	Reserve & Surplus	257.16	376.15	378.84	738.93	897.19	891.37	831.00	965.65
	Debenture	0.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
	Borrwoings	6.00	553.18	730.00	100.00	100.00	300.00	464.90	140.32
	Deposits	8975.78	10485.36	12388.93	15833.74	18083.98	20315.83	21018.42	22162.17
	Others	186.01	200.06	269.19	246.11	370.44	506.83	639.24	1054.44
	Total	9,888.53	12,278.33	14,570.10	17,721.93	20,496.01	23,396.19	24,757.75	26,126.77
Assets									
	Cash & Bank Balance	579.34	533.32	1102.54	1142.80	1889.17	1142.76	1184.07	1161.79
	Investment	3088.31	4164.14	3465.08	3574.42	3319.89	4856.80	5261.39	5608.32
	Loan, advances & overdraft	5912.58	7259.08	9399.33	12462.64	14647.30	16664.93	17468.19	18404.36
	Fixed Assets	95.23	110.75	320.85	387.27	417.04	491.30	502.00	551.04
	Others	213.07	211.05	282.31					

Appendix

Nepal Stock Exchange Ltd.			
Singhdubar Plaza, Kathmandu			
Some Key Figures of B/S And P/L Account with brief financial indicator			
of Nepal			

Investment Bank Ltd								
		Audited	Audited	Audited	Audited	Audited	Audited	Un audited
		2061/62	2062/63	2063/64	2064/65	2065/66	2066/67	2067/68
		2004/2005	2005/2006	2006/2007	2007/08	2008/09	2009/10	2010/11
Brief Financial Indicators								
	Networth Per Share	200.80	239.67	234.37	223.17	162.35	190.34	242.78
	Earnings Per Share	39.50	59.35	62.57	57.87	37.42	52.55	52.44
	Dividend Per share	12.50	54.46	30.00	40.83	20.00	25.00	0.00
	NPA %	0.02%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%
	Earning Yield (EPS / MPS)	4.94%	4.71%	3.62%	2.36%	2.70%	7.45%	10.18%
	Price Earnings Ratio (In case of old co)	20.25	21.23	27.63	42.33	37.10	13.42	9.82
	Market Price	800	1260	1729	2450	1388	705	515
	ROE	19.67%	24.77%	26.70%	25.93%	23.05%	27.61%	21.60%
		Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million	Rs. In Million
Capital Structure								
	Authorised Capital	1000.00	1000.00	1000.00	2000.00	4000.00	4000.00	4000.00
	Issued Capital	590.59	590.59	801.35	1203.92	2407.83	2409.10	2409.10
Liabilities								
	Issued and Paid up capital	587.74	590.59	801.35	1203.92	2407.07	2409.10	2409.10
	Reserve & Surplus	592.43	824.85	1076.77	1482.87	1500.77	2176.30	3439.63
	Debenture	300.00	550.00	800.00	1050.00	1050.00	1050.00	1050.00
	Borrwoings	50.00	0.00	0.00	0.00	38.80	37.31	280.76
	Deposits	14254.57	18927.31	24488.86	34451.73	46698.10	50094.73	50139.08
	Others	278.80	437.39	423.87	684.79	1316.06	1537.98	1789.18
	Total	16,063.54	21,330.14	27,590.84	38,873.31	53,010.80	57,305.41	59,107.75
Assets								
	Cash & Bank Balance	1340.48	2336.52	2441.51	3754.94	7918.00	6815.89	8140.37
	Investment	4074.19	5672.87	6868.65	6874.02	7399.81	8635.53	7571.76
	Loan,	10126.06	12776.21	17286.43	26996.6	36241.2	40318.3	41887.6

	advances & overdraft				5	1	1	9
	Fixed Assets	320.59	343.45	759.46	970.09	1060.75	1136.25	1108.45
	Others	202.23	201.09	234.80	277.60	391.03	399.44	399.48
	Total	16063.54	21330.14	27590.84	38873.31	53010.80	57305.41	59107.75