Chapter 1

INTRODUCTION

1.1 Background of study

Nepal has adopted mixed and liberal economic policy with the implicit objective to help the state and the private sector. Especially after restoration of the democracy, the concept of the liberalization policies has been incorporated as directive principal and state policies. This liberalization has helped in establishing many companies, banks, finance companies and manufacturing industries. Thus these establishments help the country for its development.

Banking sector is the most vibrant part of economy which has been playing very vital role in mobilizing the financial resources from the saver to users. It, in general, collects the idle funds from different savers and accumulated funds is further proceeds to the needy centers like households sectors, business sectors. It is the heart of trade, commerce and industry. It makes the smooth flow of funds in the circulation body of the economy. It makes various functions like assets and liabilities transformation, security trading, agency functions, and economies of scale, corporate social responsibilities, and other day to day banking functions.

Banking plays a significant role to the development of national economy. Bank is a financial institution, which primary deals in borrowing and leading. Modern bank performs many other varieties of function. Therefore it is difficult to define the functions of a modern bank because of their complexity and veracity in operation.

The word "Bank" is derived from the Italian word "BANCA' which means a counter tables or bench used by medieval money exchange. Oxford dictionary defines bank as "an establishment for the custody of Money". The banks

operate in the modern and completive business environment. It is an account of this reason that different economists have offered different definitions, such as:

"A Bank is an institution whose debts (bank deposits) are widely accepted in settlement of their people's debts to each other".

"A Bank is one who is the ordinary course of his business, receives money which he repays by honoring cheque of persons from whom or on whose account he receive it". Although, there are various types of banks, only commercial banks are considered here, for the purpose of present study. They are the hearts of the modern financial system.

Commercial banks are legally formed financial institution, which accept deposits and makes loan for commercial and non commercial purpose. The history of commercial bank is not very long. The growth of commercial banks lasts two decades remained phenomenal particularly financial sector reformation in 1990's. The concept of the banking was formally executed after the establishment of the Nepal bank Ltd. in 1994 B.S. In 2014 B.S., the central bank named Nepal Rastra Bank was established with the objective of supervising, guiding and protecting the functions of banking sectors. As a result, the growth of commercial banks in Nepal has been mushroomed. The number of banks has been increased as per the requirement under the different acts like Agriculture development bank under the Agriculture development Acts in 2024 B.S. Commercial banks under the commercial Acts in 2031 B.S. Nepal Arab bank Ltd. is the first join venture bank in Nepal which was established in 2041 B.S. Presently, there are 31 commercial banks with hundreds of branches over the national frontier operating in Nepal. There are altogether 87 development banks, 79 finance companies, 21 micro credit development banks and 16 saving and credit cooperatives registered with Nepal Rastra Bank.

1.2 Profile of Sample banks

For the study process four commercial banks were selected among them two are joint venture banks and two are joint venture release banks. Two joint venture banks are NABIL Bank and Himalayan Bank, and two non joint venture banks are Nepal Investment Bank and Nepal Credit and Commerce Bank.

1.2.1 Nabil Bank Limited (NABIL)

Nabil Bank Limited (erstwhile Nepal Arab Bank Limited) was established on July l, 1984 under a technical service agreement with Dubai Bank Limited, Dubai, which was later merged with Emirates Bank Ltd., Dubai. Nabil Bank is the first and major joint venture bank in the country with key points of representation all over nation. The Bank is managed by a team of qualified and highly experienced professionals. The authorized capital of this bank is 1.6 billion, issued capital and paid up capital is 1449.12 million. The central office of this organization is in Beena marg, Durbar marg. It has 48 branches allover the country.

Nabil is the sole banker to a multitude of large corporate, international aid agencies, NGOs and embassies. It is the largest private bank in the country in terms of branch and ATM network. All its branches are interconnected on real time basis. On the technological front, the Bank has earned a reputation in providing an array of card products and Internet/Tele banking facilities besides ATMs and Any Branch Banking Service. The statement 'Your Bank at Your Service' that the Bank holds on firmly is a resemblance that the Bank's stakeholders are at the core of everything it does.

1.2.2 Himalayan Bank limited (HBL)

Himalayan Bank Limited is another joint venture bank Established under company act of Nepal. Major portion of share is covered by Habib bank limited Pakistan. The bank was incorporated in 1993 AD. The central office of this organization is in Sanchayakosh building Thamel. It has 37 branches allover the country. Its authorized capital is 2000 Million; issued capital is 1216 million and paid up capital is also 1216 Million. Both the par value and paid up value per share is Rs. 100. The bank was listed in the NEPSE in 1993 (2050/02/3 B.S.).

1.2.3 Nepal Investment Bank Limited (NIBL)

Nepal Investment Bank Ltd. (NIBL), previously Nepal lndosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital) was Credit Agricole lndosuez, a subsidiary of one of the largest banking groups in the world. With the decision of Credit Agricole lndosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, in April 2002, acquired 50% of the holding of Credit Agricole Indosuez in Nepal lndosuez Bank. The name of the banks changed to Nepal Investment Bank Ltd. upon approval of the Bank's Annual General Meeting, Nepal Rastra Bank and Company Registrar's office. The authorized capital of this bank is Rs.2 billion, issued capital is 4 billion and paid up capital is Rs 2.409 billion. Par value per share is Rs.100. It central office is at Durbarmarg Kathmandu. This company was listed in NEPSE in 2044/05/8 B.S. i.e. 1987A.D. Nepal Investment Bank at present has 40 branches and its Head office is in Durbar Marg, Kathmandu.

1.2.4 Nepal Credit and Commerce Bank (NCC Bank)

Nepal Credit & Commerce Bank Ltd. (NCC Bank) formally registered as Nepal - Bank of Ceylon Ltd. (NBOC), commenced its operation on 14th October, 1996 as a Joint Venture with Bank of Ceylon, Sri Lanka. It was the first private sector Bank with the largest authorized capital of NRS. 2,000 million. The Head Office of the Bank is located at Siddhartha Nagar, Rupandehi, the birthplace of Lord Buddha, while its Corporate Office is placed at Bagbazar, Kathmandu.

The name of the Bank was changed to Nepal Credit & Commerce Bank Ltd., (NCC Bank) on 10th September, 2002, due to transfer of shares and management of the Bank from Bank of Ceylon, an undertaking of Government of Sri Lanka to Nepalese Promoters.

At present, NCC Bank provides banking facilities and services to rural and urban areas of the nation through its 17 branches. The Bank has developed corresponding agency relationship with more than 150 International Banks having worldwide network. This banks authorized capital is Rs. 2 Billion, issued capital is Rs. 2 Billion and paid up capital is Rs. 1.398 Billion.

1.3 Focus of the study

Generally, risk and return analysis is concerned to identify the sustainable position of financial sector. Risk and return is the basic concept in the corporate finance and it guides the other modern theories and principal as well as it assists in taking various financial and qualitative financial decisions. The relationship between risk and return can be defined by the investors' perception about risk and the demand for compensation. No investor will take any investment position in risky assets unless they are convinced of adequate compensation for the percept risks. In fact, there is positive relation between risk and return. Risk has been defined as the chance that the actual return

deviation from the expected returns and risk is the percept fact of life that is the product of uncertainty and it magnitude depend upon the degree of variability in future's uncertain cash flows. Risk and return is an indication of opportunity of losing investment value. It is insensible to talk about returns without talking about risks because investment decision involves the trade off between risk and return and the trade off between these two variables is positive. There is positive relation between risk and return. Thus an investor, in general, can attain more return through the selection of dominating assets that involves high risks.

Risk in a stock reflects the uncertainty about the future return i.e., actual return may be less than the expected return. The main source of uncertainty about future return is that, the price at which the stock can be affected by economics factors such as interest rates, economic growths, inflation liquidity, marketability, financial performance and strength of the dollar. The risk of stock can be measured by the price volatility.

One of the main sectors of financial market is capital market where stocks and bonds are traded. Among all, stock market is seemed to very active market and basically concerned to maximize the wealth of stockholders. It plays vital role in economy. Financial market is the mechanism designed to facilitate the exchange of security by bringing buyer and seller in the trading floor. It allows supplier and demanders of funds to make transaction. Capital market is important intermediary through the networks of funds within the economy can be made active. In general, capital market refers to the market where various long-term securities are issued and traded for the tradeoff between liquidity position risk of their prospective portfolio in the response to availability of information and marketability of securities and its prices. If the capital market is efficient, the current stock price fully reflects available information but full efficient market is very difficult to meet in the real corporate world. So,

investor should learn fully and carefully as possible as about actual investment world. Political, legal, economical, social, and technological factors affect the capital market. All financial institutions are also affected by capital market.

NEPSE is the only stock exchange in the country. The government, Nepal Rastra Bank (The central Bank) and Nepal Industrial Development Corporation (NIDC), owns it. It has a small ownership holding of its members. Securities business person such as stock brokers, market markers and securities dealer registered by Securities Board of Nepal (SEBO) have to get membership from the stock exchange for conducting securities business. Similarly, the issue activities also have to get membership of stock exchange to conduct their business.

Many financial institutions are listed with Nepal Stock Exchange (NEPSE). The total number of listed companies in F/Y 2010/11 was 209. There are 24 companies listed under commercial bank group, similarly there are 61 companies in development bank group, 71 companies in Finance company group,4 companies in Hydro companies group, 21 companies in Insurance companies, 18 companies in manufacturing and processing group,4 companies in hotel group, 4 in trading and 2 in other group (Annual report of NEPSE, 2010/11). But the present study however includes only listed commercial banks. This study has mainly focused on the risk and return analysis of common stocks investment of the selected listed banks.

1.4 Statement of the problem

Generally, investors purchase financial assets such as stocks or bonds for their desire to increase their investment wealth i.e. earn positive rate of return on their investment. Risk and return analysis is worked out to identify the sustainable position of any organization and financial institution. Capital market in Nepal has grown rapidly after the establishment of the security

market named NEPSE with in the very short period of time. However, the attitudes and knowledge of the most investors have not changed yet. They are influenced by liquidity position rather than information in the financial market. Investors usually lack any idea of risk and return because most of the investors appear to be least familiar with the financial market. They can make wrong investment decisions based on the hunches rather than on real term analysis. Though some investors follow the rational investment procedure and portfolio analysis but they still lack perfect awareness about the risk and return factors. Without getting theoretical knowledge about risk associated with investment, most of the investors are making investment on the stocks. This may be termed as improper practice. This situation motivates the present researcher to undertake a research project entitled "Risk and return analysis of selected commercial banks in Nepal".

If the bank issues shares, there becomes huge demand rather than the supply but if other sectors such as hotels insurance companies and manufacturing companies issue new shares, the least investors desire to invest their money. In Nepalese context, most of people deposit their saving in banks instead of making investment in the financial assets available in the capital markets like investment in shares, debentures and other derivative securities. Many investors are not rational towards their investment decision. They don't know how to make rationale investment by assessing the risk percept in the investment and the level of return to compensate the percept risk. In Nepal, most of the financial institution issues only the common stocks and capital market is also dominated by the trading of the stocks. On the basis of this, the study seeks to answer the following research questions.

➢ How can one make higher return through lower risk?
➢ What should be the compensation had to receive for bearing risk?
➢ How do they know about the magnitude of risk?

> ➢ What are the criteria for evaluation that the stock they are holding will give them a favorable return?

1.5 Objectives of the study

The primary objective of the present study is to analyze the risk and return of listed commercial banks in Nepal. The specifics objectives of the present study are listed down as follows:

- To examine and compare risk and return of investing in common stock of listed companies their portfolio.
- To identify whether stocks of selected companies are over-priced, under priced, and equilibrium prices.
- To determine an optimum portfolio using sample companies stock.

1.6 Significance of the study

The study is to point out the risk and return position of investing shares of commercial banks in Nepal. The study will be helpful for investors as well as commercial banks. It also provides proper guidelines for making choices of stocks and bonds on the basic of risk and return. It is also important to those people who are interested to know about risk and return and capital market in Nepal. It provides the consolidated basic data and information about the NEPSE and commercial banks under study. This study will cover the investors' perception upon the risk and return factors while investing in common stocks of commercial banks. It will provide the brief information on risk and return from the investors' perspectives.

1.7 Limitations of the study

Every research study has its own limitations. The present study has following limitations.

1. There are 31 commercial banks in Nepal that are in operation, among them 24 banks are listed in NEPSE. But the study does not include the entire listed commercial banks.

2. The study is based upon the secondary data for fundamental analysis and primary data for technical analysis.
3. The study is basically concerned only with the risk and return of the listed commercial banks i.e., other aspects of the banks have not been taken under the consideration.
4. This study incorporates the data from 2060/061 to 2066/067.

1.8 Organization of the study

The study report has presented the systematic presentation of the research design, analysis, presentation and findings of the study. It has divided into five chapters

Introduction the first chapter of the study is introduction, which highlighted the basic information of the research area, various problems, objectives, importance, limitations and organization of the study. Review of Literature the second chapter of the study assures readers that they are familiar with important research that has been carried out in similar areas by earlier scholars in related areas. It also establishes that the study as link in a chain of research that is developing and emerging knowledge about concerned field.Research Methodology the third chapter refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. It describes the various research methods (i.e. research design, source of data, data collection techniques, data collection methods). Presentation and Analysis of Data the developed information has finished in required form in fourth chapter. Information is presented and analyzed (i.e. both primaries as well as secondary source) by using various financial and statistical tools in specified form to meet the stated objective of study. Summary, Conclusions and Recommendations   on the basis of the results from data analysis, the researcher concluded about the research work. Besides, it also gives important suggestions to the concerned organization for better improvement.

CHAPTER 2
REVIEW OF LITERATURE

This chapter presents with the discussion related to various theories and researched studies that are closely related studies and provides valuable inputs to conduct the present studies successfully. The whole chapter has been divided mainly into two parts- theoretical review and the research review. Theoretical review includes the definition and summary of published articles in different journals and past studies.

2.1 Theoretical Review

2.1.1 Concept of capital market

Capital market is also called security market as well as financial market. Capital market is the mechanism designed to facilitate the exchange the financial assets or securities by bringing buyer and seller of securities together. Precisely speaking, security market allows suppliers and demanders of funds to make transactions. It can be various types and forms classified as different bases capital market and money market, share and debenture market. For our research concern, capital markets- the market defined as any body of the individuals, whether incorporated or not, constituted for the purpose of regulating controlling the business of selling or dealing securities. According to Brigham & Eharadt, (2001), "capital markets are the market for intermediate or long-term debt and corporate stocks. Intermediate term refers those financial assets having the maturity periods equal to five years and more than five years. Capital market consists of the security market and non security market implies mobilization of the funds through issuance of securities like share, debenture, and other derivative securities. These securities traded in the markets are generally negotiable and hence can be traded in secondary market. Non security market refers to the mobilization of the non-financial resources.

Basically capital market can be divided into two parts:

1. Primary capital market

2. Secondary capital market

Primary capital market

Primary market is the market is the market through which the funds are transferred from saver to demander. Hence, the transaction of securities issued first times takes place in primary markets. The primary for securities is new issue market, which brings together the supply and demand or source and use for new capital funds. In this market, the principal source of fund is domestic saving of individuals and firm, other suppliers include foreign investors and government. In highly developed capital market, the largest proportion of saving reaches the new issue market indirectly via a financial intermediary. For example, investment bankers other similar nature of institutions. In contrast most of the investors are unfamiliar with issue markets and its institutions such as underwriting and selling syndicates which serve middlemen between the corporate demanders of funds and the individual investors.

Secondary capital market

Once they have been issued in the primary market, investor may seller trade them in the secondary market called secondary capital market. It deals with previously issued share mainly traded through the stock exchange, over the counter (OTC) market and the direct dealing. The majority of all security transaction generally.

2.1.2 Development of capital market in Nepal

Capital market in Nepal is in infancy position. A stock investment practice in Nepal has been developed after the establishment of the Biratnagar Jute Industry and Nepal bank Ltd. in 1937 AD. Till 1980's the majority of shares issuing companies would belongs to the government ownership. Initial public Offerings (IPO's) were hardly found in practices and funds were collected

through the direct placement of bonds. The prime objectives of the raising the fund would be the development of the infrastructure and pubic welfare programs. It has helped flourishing the primary government bond market. On the other hands, the share of Nepal Bank Ltd. were in existence but limited to ownership of the RANA's (Khadka, 2004). Government had issued treasury bills in 1962 AD for the first time to finance the infrastructure development. Furthermore, it was followed by the issuance of the development bonds in 1964 AD. Industrial policy has opened the door of the establishment of the institution name Security Market Center (SMC) in 1977 AD. Security Exchange Act (SEA) was approved by legislation and came into existence with effect from 13th April, 1984 AD. The former Securities Exchange Center was converted into Nepal stock Exchange (NEPSE) with the major objective of arranging marketability and liquidity of the government and corporate securities. Floor trading through market intermediaries such as brokers' market makers has also evolved; restoration of democracy following the political movement of 1990 has brought lots of reforms in the finance sector. Liberalization in the real sense was initiated. Nepal launched 'Extended Adjustment Program' in 1992 AD by taking Extended Structural Adjustment Facility (ESAF) through the amendment in the SEA. This has led to established of the Securities Exchange Board Nepal (SEBON) and was given the responsibility of regulating and developing the transactions of the stocks and bonds in the floor through its member intermediaries where NEPSE is to facilitate the transactions of the stocks and bonds in the floors through its member intermediaries.

NEPSE presently has 23 brokers, 11 issue managers and 2 portfolio managers that is dealer in the secondary market. Currently there are 159 listed companies but this number is subject to change. Similarly NEPSE is planning to increase the share broker number by 27 to make 50 in the near future. Some processes are already made for this. Similarly, Non Residence Nepalese (NRN) has declared to establish a multipurpose mutual fund investment company with

amount of Rs. 10 billion in nearer future which help to grow the capital market in Nepal. In addition to this, various state-owned enterprises like Nepal Electricity Authority (NEA) has already issued bond and Nepal Telecom Corporation (NTC) planning to issue bonds. Thus market share to the general public which is encouraging for the capital market encouraging and becoming alternative investment sectors for the investors.

2.1.3   Meaning of risk

Risk is defined in the Webster's dictionary "as a hazard a peril: exposure to loss of injury". Thus, risk refers to chance that some unfavorable events may occur. If we bet on the horses, we are risking our money. If we invest in speculative stocks we are taking a kind of risks in a hope of making appreciable returns. (Brigham, Capeskin and Erhards, 2001)

Risk is the variability of possible returns around the expected returns of an investment. Each investor has his/her own attitudes towards risks and how much he/she can tolerate. Since, investment have risks associated with them, the investors must determine combination of alternatives matches that tradeoff the risk and compensation for percept risks. (Basnet, 2006)

In reality, risk occurs when we cannot be certain about the possible future outcomes of particular activity or events. So, we are not sure that risk will occur in the future consequently. Risk results from the fact that the action such as investment can provide the more than one outcome in future. (Western and Brigham)

According to Saunders and Cornett, 2002, "A major objective of the financial management is to increase the Financial Institutions' return for its owners. They often come however at the cost of increased risk. The effective management of this risk is central to a financial institutions' performance. Indeed, it can be argued that the main business of financial institution is to

14

manage the risk for the purpose of maximization of return. So, financial institution manager must devote the significant time to understanding and managing the various risks to which their financial institutions are exposed".

In real sense, risk is the chance of losing future return and investment amount in future. Assets having grate chance of loss are viewed as more risky than lesser chance of loss. More formally, the term risk is used interchangeably with uncertainty to refer the variability of return associated with the given assets.

Risk is measured in many ways but commonly three methods are viewed as useful standard. These are:

Beta coefficient

This is a mathematical value that measures the risk of one asset in term of its effect on the risk of group of assets called portfolio. It is concerned solely with market related risk as would be the concern for the investor holding stocks and bonds. It is derived mathematically so that a high beta indicates a high level of risk and low beta represents a low level of risk.

Standard deviation

This is the measurement of the dispersion of forecast returns when such returns approximate a normal probability distribution. It is a statistical concept and widely used to measure risk from holding a single asset. The standard deviation is derived so that a high standard deviation represents a large dispersion of return and it involved high degree of risk. On the other hand, a low standard deviation is a small dispersion and represents low degree of risk.

Subjective estimates

A subjective risk measure occurs when qualitative rather than quantitative measures are used to measure dispersion. We will use the definition of risk that deals with dispersion of return. We will also note that mathematical approaches can be used to estimate such dispersion.

2.1.4 Sources of risk

An investment is commitment of money that is expected to generate addition money. Every investment entails some degree of risks. A major objective of financial institution is to increase the returns for its owner by taking minimum risk. The effective management of the risk is central to its performance. Indeed, it can be argued that the main business function of financial institution is managing these risks through the consumption of maximum time and efforts in understanding and managing the various source and kinds of risks factors with its different natures and complexities. The primary risks factors that create investment uncertainties are as follows:

Interest rate risk

Asset transformation function is the key functions of financial institution. It involves buying primary securities or assets and issuing secondary securities or liabilities to fund assets purchase. The primary security purchased by financial institutions often has maturity and liquidity characteristics which are different from those of secondary security that financial institutions sell. In mismatching the maturities of asserts and liabilities as part of their asset transformation function. Financial institutions potentially expose themselves the interest rate risks. Suppose when interest rate increases and maturity period of assets is greater than the maturity period of liabilities. At that time, if interest rate increases it decreases the market value of assets in comparison of its liabilities. So, interest rate is defined as the potential variability of return caused potential variability of return caused by the changes in its market rate interest rate. Interest rate can be variable. If we consider the single period return formula for the bond and stock. In interest rate risk, if market interest rate raises the investment values and market prices falls and vice-versa. The variability of return results interest risk. The interest rate risk affects the prices of bonds, stocks, real estate, gold and other derivatives securities.

Bull-Bear market risks

Market risk is risk incurred in the trading of assets and liabilities due to changes in market forces like interest rates, exchange rates. Furthermore, market risk is the risk related to uncertainty on the earning on its trading portfolios caused by changes in the market condition.

Saunders and Cornett in tenth addition have outlined two comments on market risk.

These are as follows:

Comment 1: market risk is value at risk (VAR) which is related to uncertainty.

Comment 2: market risk is caused due to four major market forces. These are price of assets, interest rate, market volatility, market liquidity.

Market risk can be also cleared in Bull-Bear approach. This approach advocates that risk can rise from the variability of the market return resulting from the alternating bull and bear market forces. Bull market creates when security index arises fairly and consisting from also point called trough for a period of time, the bull market ends when the market index reaches a peak and starts downward trend. The period during which the market declines to the next trough is called a bear risk.

Credit risk

It is also called default risk. Default risk is probability that the borrower is unable to fulfill the term promised under the loan agreement. Saunders and Cornett have outlined three principles as follows:

Principle 1: It is the risk losing principal and interest amount.

Principle 2: When financial institution makes loans or buys securities with longer maturities. There is chance of higher credit risk where principal plus interest earned may not recover adequate in full amount.

Principle 3: Credit risk can be firm specific and systematic risk.

Liquidity risk

Liquidity risk is sudden surges in liability with drawl may leave as financial institution in a position of having to liquidate assets in a very short period of time and at low prices. Liquidity risks arises when on its liability holders such as depositor or insurance policy maker etc. demand immediate cash for the financial claim they hold with financial institution or when holders of loan commitment or credit line suddenly exercise their right to borrow or draw down their right their loan commitments. At that situation the financial institutions must either borrow additional funds or sells assets to meet the demands for the withdrawal of funds. In most cases financial institution has to face the liquidity crisis at the time when liability holder demands higher cash consequently. In other sense, liquidity risk is that position of an assets total variability of return which results from the prices discount given on sales. Commission paid in order to sale with out delay. Perfectly liquid assets are highly marketable either price discounts must be given or these cost must be incurred by seller, in order to find a new investor for an assets is the larger the prices discount and /or commission which must be given up by the seller in order to affect a quick sale.

Callability risk

Some bonds and preferred stocks are issued with a provision that allows the issuer to call them in for repurchase. Issuer like the call provision because it allows them to buyback outstanding preferred stock and /on bond with funds from a newer issue if market interest rate drop below the level being paid on the outstanding securities. There is chance of creating callability risk.

That portion of a security's total variability of returns which derives from the possibility that the issue may be called is the callability risk. Callability risk commands a risk premium that comes in the form of a slightly higher average rate of return. This additional return should increase as the risk that the issue will be called increase.

Convertibility risk

Call ability risk and convertibility risks are in two aspects. First both are contractual stipulations that included in the term of original security issue. Second, both of these provisions alter the variability of return from the affected security. Convertibility risk is that portion of the variability of return from a convertible bond of convertible preferred stocks. That reflects the possibility that the investment may be converted into the issuer's common stocks at a time or under terms harmful to the investor's best interest.

Industrial risk

An industry may be viewed as a group of companies that compete with each other to market homogenous products. Industry risk is that portion of risk that can be an investment variability of return caused by events that affects the product and firms that make up of an industry. The stage of industry cycle, international tariffs and/of quotas on the product produced by an industry related taxes, industry wide labor union problems, environmental restriction, raw materials acts and affect all the firms in the industry simultaneously. As a result of these commonalities, the prices of the securities issued by competing firms tend to rise and fall together.

Political risk

Political risk arises from the exploitation of a politically weak group for the benefits of politically strong group, with the efforts of various groups to improve their relative positions increasing the variability return from the affected assets. Regardless of whether the changes that cause political or by economic interests, the resulting variability of return is called political risk if it is accomplished through legislative, judicial or administrative branches of government. Political risk can be classified as international political risk and domestic political risk.

Other risks

Besides these above mentioned risks, there are other risks like off balance sheet risk, technological and operational risk, country and sovereign risk, insolvency risk etc.

2.1.5 Types of risks

Total risk or total variation of the rate or return for an individual security or portfolio is measured by the standard deviation or variance of the rate of return. According to Capital Asset Pricing Model (CAPM), total risk can be divided into two parts i.e. systematic risk and unsystematic risk.

Systematic risk

It is also called non-diversifiable risk. The systematic risk is market related. In other words, it arises from the changes in the economy and market condition. For example, high inflation, recession, impact of political factors, wars, depression, long-term changes, etc, which are beyond the control of company management. It affects all the firms in the market. The portion of risk is non-diversifiable and cannot be reduced. The systematic risk is rewarded in the form of risk premium. Sometimes, systematic risk is called market risk. Systematic risk affects almost all assets in the economy, at least to some degree, whereas systematic risk affects at most a small number of assets. The principle of diversification has an important implication to a diversified investor, only systematic risk matters. It follows that in deciding whether or not buy a particular individual asset, a diversified investor will only concerned with that asset's systematic risk. This is a key observation and it allows us to say great deal about the risks and returns on individual asset, in particular, it is the basis for a famous relationship between risk and return called the security market line. To develop the SML, we introduce the equally famous Beta coefficient one of the measurement unit of modern finance. Beta coefficient and SML are the key concepts because to get supply us with at least part of the

answer to the question of how to go about determining the required return on an investment.

Unsystematic risks

The unsystematic risk is non market factors related. In other word, it arises from the project specific factors for example inefficiency of management failure in new product in production, employee strikes, lawsuits and any other event that is unique to the company. It is inherent individual companies or projects. This portion of risk is diversifiable and it is possible to reduce or eliminate through diversification of the investments. It is called unique or asset specific risk.

2.1.6 Meaning of return

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

1. Income from price appreciation or losses from price depreciation. It is called capital losses and gain.
2. Cash flows income from cash dividend or coupon interest payment.

Return shows financial position of any organization. The company position of any organization may be better if it has higher return. Return is rewards for an investor from his or her organization. Investors always want to maximize expected return subject to their tolerance for risk. Return is motivating forces

and it is the key method available to investors in capering investment alternatives. Realized rate of return and expected rate of return which are often used in language of investment. Realized rate of return is after the fact return that was earned or it is the historical return.

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

$$K_t = \frac{P_t - P_{t-1} + C_t}{P_{t-1}}$$

Where,

K_t = actual or expected or realized rate of return

P_t = price or value of asset at time (t) or beginning price

P_{t-1} = price or value of assets at time t-1 or ending price

C_t = cash flows received from the investment in the time period t-1 to t

2.1.7 Expected rate of return

The expected rate of return or holding period return is based upon the expected cash receipts over the holding period and expected ending or selling price. Depending upon the assumption made about cash receipts and ending price, a number of expected returns rate are possible. These possible rates estimated by the investors are summarized in the expected rate of return. According to (Cheney and Moses, 2006) "the expected rate of return must be greater or equal to the required rate of return in order for the investor to find the investment acceptable."

2.1.8 Capital Asset Pricing Model (CAPM)

CAPM provides a framework for measuring the systematic risk of an individual security and relate it to the systematic risk of well diversified

portfolio. CAPM is used in finance frequently to analyze the relationship between the risk and rate of return. The conclusion of the CAPM is: the relevant risk of an individual stock is contribution to risk of a well-diversified portfolio.

Indeed, in 1990 AD, the greatest world prize the Nobel Prize was awarded to the developers of CAPM, Professor Harry Markowitz and William F. Sharpe. In the context of CAPM, the risk of individual security is defined as the volatility of the security returns vis-à-vis the return of market portfolio. CAPM is simple concept and has real world applicability. The model describes the relationship between risk and return or expected return. In this model, a security's expected return is the risk free rate plus a premium based on systematic risk of the security. Beta coefficient is the heart of CAPM model. It is the better measure of risk, the most important aspect of risk is the overall risk significantly affects investment opportunities and even more important, the owner wealth. The basic theory that links together risk and return for all assets is called Capital Asset Pricing Model. The CAPM equation on security market line (SML) is usually written as:

$$E\,(R_J) = R_F + \beta_J\,[\,E\,(R_M) - R_F\,]$$

Where,

$E\,(R_J)$ = the required rate of return on the assets

R_F = the rate of return of risk free assets

$E\,(R_M)$ = the expected or ex-ante return on the market portfolio

β_J = a measure of the non-diversifiable risk of the J_{th} security called assets beta. It can be calculated as

$$\beta_J \;=\; \frac{COV\,(R_J\,R_M)}{VAR\,(R_M)}$$

Where,

COV $(R_J\,R_M)$ = covariance between risk free return and market return

VAR (R_M) = variance of market returns

There are some assumptions under the CAPM model. According to (Sharpe, Alex, and Bailey 2008) has outlines eight assumptions as follows.

1. Investors evaluate portfolio by looking at the expected return and standard deviation of the portfolio over one period horizon.

2. Individual assets are infinitely divisible. It implies that an investor can buy a fraction of a share of s/he so desires.

3. There is a risk free rate at which an investor may lend i.e. invest money or borrow money.

4. Taxes and transaction costs are irrelevant.

5. All the investors have the same one person horizon.

6. The risk free rate is the same for all investors.

7. Information is freely and instantly available to all the investors.

8. Investors are homogenous expectations. It implies that everyone has same perception in regard to the expected returns, standard deviation and covariance of the securities.

CAPM provides a measure of risk and return. The systematic risk or market risk of a security is measured in term of its sensitivity to the market movement. This sensitivity is referred to security's Beta (β). Beta reflects systematic risk that can not be eliminated. Investor can eliminate unsystematic risk when they invest their wealth in a well diversified portfolio. A beta of 1.00 indicates average level of risk while more than 1.00 means risk more than market portfolio. A zero beta coefficient means no risk. The graphical presentation of CAPM is called the Security Market Line (SML).

2.1.9 Over, under and fairly pricing of securities

The securities can be either under priced or over priced. It can be known calculating through required rate of return and average rate of return. When average return exceeds the excepted return then, the securities is under priced and vice versa. Required rate of return can be used as a discounting factor to

determine the intrinsic value of stock. It means there is inverse relationship between required rate of return and intrinsic value of stock.

2.1.10   The single index model:

The simplification of Markowitz model has come to be known as the market model of single index model (Bhalla 1994:526-537). The single index model provides that the desirability of any stock is directly related to its excess return to beta ratio. Single index model for optimal portfolio enable to find out the no of security to be in optimal portfolio .In this case the desirability of including a stock directly related to its excess return to beta ratio. If stock ranked by excess return to beta for highest to lowest, the ranking represents the desirability of any stock inclusion in a portfolio. The number of stocks selected depends on a unique cut off rate such that all stocks with higher ratios will be included and all stocks with lower ratios excluded.

2.2   Research review

These days information highway or the internet has become to the most easily accessible medium to gain information in subject matter. Different books and article have been consulted while conducting the research to derive the comparative and analytical conclusion of this study. The review of relevant articles publish in different journals are available online on international Network for the Availability of Scientific Publication (NASP). In this section has been reviewed and presented.

2.2.1 Review of journal

Pagano's (2001) has a study on how theories of Financial Intermediation of Corporate Risk-Management Influence Bank Risk-Taking Behavior. This paper has based on the relation for the risk taking and risk management behavior from a both corporate finance and banking perspective. That data set covers the period from 1986-94, 1986-90 and 1991-94 but overall time of the study is 9

year period. In this study, the research scholar has used mathematical tools that are the model beta, standard deviation, total risk (systematic and unsystematic risk), and interest rate risk. The main objective of the study is to examine the relation for risk taking and risk management behavior for both corporate financial and a banking perspective. After combining the theoretical insights from the corporate finance and banking literatures related to hedging and risk taking the paper reviewed empirical tests based on these theories to determine which of these theories are best supportive by the data.

Management incentives appear to be must consistently supported rational for the describing how bank manage risk. In particular, moderate/high levels of equity ownership reduce bank risk while positive amount of stock option grants increase bank risk-taking behavior. The empirical tests of theory of corporate risk management need to consider individual subcomponents of total risk and the bank ability to trade these risks in a component financial market.

Berkowitz and Brien's (2002) in their research paper "How Accurate are Value-At-Risk Models at Commercial Banks" has focused on first direct evidence on the performance of value at risk model for trading firms. The result shows that VAR forecasts for six large commercial banks have exceed nominal coverage levels over the past two years and for the some banks, VARs we substantially removed from the lower range of trading P & l. While such conservative estimates imply higher levels of capital coverage for trading risk, the reported VARs are less useful as a measure of actual portfolio risk.

They have used standard deviation, means, correlation coefficient VAR correlation coefficient, and Beach Mark and Portfolio model. To a certain extent, the study is limited by the fact that banks only forecast a single percentile of the portfolio distribution significant more could be learned about the empirical performance of internal valuation models of density forecast were recorded. Density forecast evaluation techniques described in Disbold, Gunther

and Tay (1998) and Berkowitz (2001) provide researchers with substantially more information to asses the dimension in which models need improvement and those in which models do well.

Akhigbe and Whyte (2004) in their research paper, "The Gram-Leach-Billey Act" of 1999: Risk implications for the Financial Service Industry have focused onn risk implication of banking and private sectors. The research paper has included many other studies some of the studies find that bank expansion into banking activities can affect of events that permitted only limited entry by banks into non-banking activities. The study is conducted on systematic, unsystematic and total risk, such risk are calculated by using statistical tools i.e. variance and standard deviation, T-statistical and signed rank which is recently by Aminud, Delong and Saunder in 2002. The study has included 340 banks for the sample size than they partition two sub- samples: 46 large banks and 294 small banks. The major finding of the study is that evidence of a significant decline in systematic risk for the banks securities firmand insurance companies but a significant increase in total and unsystematic risk for the banks and insurance companies. The study has included five years period data. The study also found that bank and insurance companies are less risk than other securities business. If security wants to decline in risk, security firm can be explained by their ability to diversify into less risky banking and insurance activities. The research paper result suggests that regulators should carefully monitor and supervise banking activities in new era of financial modernization to mitigate adverse effects from the increase in risk.

Financial economics has been defined as the application of economic theory to financial markets (Smith, 2006). It is largely body of theory including such well known models as modern portfolio theory (Markowitz, 2005), the capital asset pricing model (CAPM) (Sharpe, 1998), the efficient market hypothesis (Samuelson and Fama, 1970) and option pricing model (Black and Scholars

2008). Though these models are all included in institute of faculty education limited in 2008, their acceptance or use is controversial.

Researcher analyzed the relationship between average return and risk of portfolios of common stocks traded on the Nepal Stock Exchange. We found that the CAPM does not provide a valid framework to predict common stock returns on the NEPSE for the total sample period of 1998 to 2008. In a monthly basis analysis, we showed a small number of months with a significant relationship between average return and risk, only about 32%. In a yearly basis analysis, there was a significant relationship between risk and return only in the years 2004 and 2008. The remaining 9 years showed no such relationship, indicating that CAPM fails to predict common stock returns in the NEPSE. Similarly, the goodness of fit measure R^2 for the entire sample period is approximately 0.0039, which shows very weak fitness in the findings. This value of R^2 indicates that changes in the portfolio beta explain only a very small part of the variation in average portfolio returns. We conclude that the risk-return relationship in the NEPSE is very weak and that the CAPM does not provide sufficient explanations for the risk-returns behavior in Nepal. Finally, we can conclude that our results show that the risk- return relationship is very weak in NEPSE and the two-parameter portfolio model does not provide powerful explanations for the risk returns behavior in NEPSE. Therefore, it is clear that beta and average return are simply not correlated and only beta is not sufficient to explain the relation with average return. The above findings can be taken as evidence that there must be need to applied with modified version of model such as conditional risk-return relationship (penttengill et al. (1995) and three-factor model (Fama and French (1992) in the NEPSE.

2.2.2 Review of related studies

Pandey (2000) has conducted a study on risk and return analyze of common stock investment by taking six insurance companies as sample. The researcher has used analytical tools like rate of return, standard deviation, coefficient of variance, beta coefficient and t-test has used. According to this study, the main

objectives are to calculate the risk and return of the common stocks and portfolio and also to understand and identify the problem faced by the individual investor and insurance companies. The major findings of the study are generally public have least understanding about the risk of the investments which may be due to poor education, lack of adequate information, etc., that may obstruct the development of stock market. There is no significant different between the performance of common stock of insurance companies and overall market portfolio. The study has covered five years period.

Gurung (2000) has a study on risk and return analysis in common stock investment. The main objective of the study is to analyze the risk and return of common stock in Nepalese stock market. But the study is very closely related to common stocks commercial bank.

On the findings, expected return on the common stock of Nepal bank has maximum and SBI Bank Ltd. has found minimum common stock of NBL is most risky and NSB is least risky. In the context of industries, expected return of finance and insurance industry has focused highest so that common stock of Nepal Ltd. is best for investment. Mr. Sapkota in his study has conducted that, common stock is the most risky security and lifeblood of stock market because of the higher expected return, common stock holders are the passive owners of the company.

Pandey (2000) has a study on risk and return analysis of common stock investment. The main objective of the study is to analysis the risk and return of common stock investment in banking and financial sectors. The study also related to insurance companies. In the study, she has taken six insurance companies in account. To measure the risk and return, she has used standard deviation, expected return, variance coefficient and beta. On her study, concludes that: among all the security common stock has known to be the most risky security. Higher the risk, higher will be the return. Most of the investors have attracted to common stock security because of its higher expected return.

29

As for the investor, it is important to analyze each investment, company to potential returns with the risk. On average, the potential returns from an investment should compensate for the level of risk under taken. If proper allocation of assets is performed; it can reduce risk and can even be eliminated if well diversified.

Mishra (2001) analyzed risk and return on common stock investment of commercial bank in Nepal with special reference to five listed commercial banks. The main objective of the study was to promote and distribution of the securities and purchase, sales or exchange of securities. He also tried to render contribution to the development of capital market by making securities transaction fair, healthy, efficient and responsible. In this study, the researcher has used mathematical tools that are expected return, standard deviation, coefficient of variance, dividend per share, portfolio return beta coefficient, required rate of return. The period of the study was taken six years data from (2051-2057). On his study, it was notifies that there is positive correlation between risk and return. Character of the company, Nepalese capital market being inefficient, the price index itself is not sufficient to give the whole information about the prevailing market situation and the company. It was also noticed that investors do not have any idea about the producers of securities issuance. Neither company nor the stockbrokers transmit any information to the investor about the current market situation and hence it becomes different for a common investor to invest in the securities.

Mishra also has focused that Nepalese banks and government should try to promote healthy practices so that the stockbrokers do not give false information to the investor for their personal benefit, which is a common practice in Nepal. Investors should get regular information about the systematic risk (beta), return on equity and P/E ratio of various listed companies in the same way as it has given in economies times of companies listed in Indian stock exchange.

Upadhaya (2001) conducted a research entitled risk and return on common stock investment of commercial banks in Nepal. The researcher research study is based on descriptive and analytical research design, which covers the five years period from 1994-1999. The main objective of the study was to analyze the risk and return of the common stock of commercial banks in Nepalese stock market, the study focused on the common stock of commercial banks, one of the objectives that are related to this study was to evaluate common stock of listed commercial banks in term of risk and return. The major finding of the study is that expected return on the common stock of the NGBL has maximum, which is very high rate of return. Other common stock of living higher return of NBBL and EBL with more than 59 percent expected return. Expected return of NABIL is least risky. Mr. Upadhaya has focused on changing environment of Nepalese business and economy but did not focus on relationship between closing MPS and EPS.

Bhatta's study on assessment of the performance of listed companies in Nepal (2002) has based on the data of ten listed companies from 1990 to 1995. One of the major objectives of this study is to analyze the performance of listed companies in terms of risk and return and internal rate of return, systematic risk and diversification of the risk through portfolio context. The major finding of the study is that a highly significant positive correlation has been addressed of the between risk and return character of the company. Investors expect higher return from those stocks that associates higher risk, Nepalese capital market is not sufficient one, so the information relating to market and company itself. Neither investor's analyze the overall relevant information of the stocks nor does the member of stocks exchange try to disseminate the information. Therefore, the market return and risk both may not show high priced stocks.

Shrestha (2003) has a study on risk and return on common stock investment of banking sectors in Nepal. The main objective of the study was to analysis the

systematic and unsystematic risk associated with security. The study was covered six years data from 1996-2001.

In this study, the researcher has used analytical tools i.e. return of common stock, expected return, standard deviation, beta coefficient, CAPM, coefficient of determinants and hypothesis (t-test). The major findings of his study are NBBL's common stock is yielding the highest realized rate of return with 71.80 percent where as it is the lowest 26.6 percent incase of NIB Ltd. The banking industry average 47.85 percent, the commercial banks NBBL, BOKL and EBL respectively rate of return are 71.8 percent, 67.6 percent and 65.6 percent. All the commercial banks required rate of return is less than expected rate of return which means that they are all under price therefore it will be beneficial to the investors who are going to purchase the companies' common stocks. From the study, it has found that investment in banking sectors is beneficial instead of other financial sectors.

Tamang (2003) has a study on risk and return analysis of commercial banks in Nepal. The main objectives of the study is to determine whether the share of the commercial banks are correctly priced or not by analyzing the required rate of return using the capital asset pricing model also to measure the systematic and unsystematic risk of the commercial banks. In this study, the researcher has used mathematical tools i.e. market model, single period return, expected rate of return, standard deviation, coefficient of variation, beta coefficient (B). The period of the study has taken 5 years data from 1996-2001. The major finding of the study, the systematic risk of Nepal Arab bank has the highest unsystematic risk but total risk or variance of Bangladesh is the highest i.e. 10 percent. From the study, it was also found that the shares of Nepalese commercial banks are heavily trade in NEPSE. None of the bank's shares price are correctly priced.

Joshi (2004) has conducted a research on risk and return analysis of common stock of five listed commercial banks. The main objective of the scholar's study was to assess the risk associated with return on common stock investment of the basis of selected tools. For the study, the researcher is used five years data 1998 -2002.

The researcher has used arithmetic mean to calculate the return, standard deviation and coefficient of variations, which are used to measure unsystematic risk and beta coefficient. The measurement explains sensitivity or volatility of the stock with market and individual banks. Correlation is a statistical tool i.e. is used to measure relationship between risk and return. The researcher also used t-test to calculate hypothesis. The major findings of his study are that banking sector has the expected return is 21.77 percent, risk is 36.1 percent and CV is 1.66, similarly finance and insurance sector has 21.77 percent and 1.66, hotel sectors has 10.16 percent, 72.4 percent, 7.123, trading sectors has 6.68 percent, 80.68 percent, 11.76, other sectors has -16.61 percent, 50.45 percent and 3.037. Market expected return of 10.2 percent and risk of 39.57 percent, CV of 3.88. SCB has maximum market capitalization and NBBL has the minimum market capitalization. Market capitalization as well as NEPSE index has heavily influenced by banking sector. If investors wish to generate higher return then they should bear higher risk and invest in the share of SCBL and if they are risk averters and they want to invest in single assets. They can invest in the share of NBL or HBL because these two stocks have lower risk that of portfolio risk.

Khadka (2005) has s study on analysis of risk and return on selected Nepalese commercial banks listed in NEPSE. The main objective of the study is to measure systematic and unsystematic risk of commercial banks. The study has covered 6 years period and used expected return, coefficient to calculate the risk and return of commercial banks. The major finding of the study, based on the coefficient of variation, which measures risk/unit of the stock individually,

Standard Chartered Bank Nepal Ltd. has the lowest coefficient of variation i.e. 1.89 and NABIL bank has the highest one i.e. 3.35. The total systematic risk has related due to the individual shares and correlation coefficient with the market portfolio. The residual risk or unsystematic risk is company specific is rather than market pervasive. Though the share of commercial banks in Nepal is heavily trade in NEPSE, none of the share price is correctly priced.

Shah (2006) has a study on risk and return analysis of listed companies for the analysis, among listed companies eight are taken into account. Among them two are from banking sectors, two finance companies, two insurance companies, one trading and one manufacturing and processing company. The main objectives of the study were to analyze risk, return and other relevant variables that help in making decision about investment on securities of the listed companies and to examine the movement of market price of share, also to provide suggestions on the basis of findings.

The researcher has used holding period return and expected rate or return to calculate the returns of the companies. Calculations of standard deviation, coefficient variation (CV) and beta were used to measure risk and CAPM for portfolio analysis. The expected return of Nepal investment bank is 36 percent, CV is 1.06 and risk is 38.3 percent. The beta of its share is 0.66. Expected return of Himalayan bank limited is 52.66 percent, risk is 29.3 and CV is 0.556. The beta is 1.567 so HBL is less risky than NIB. For the study, the researcher has taken 5 years period.

Karmacharya (2009) examined the cross-correlation in stock returns of South Asian stock markets,their regional intergration,and interdependence on global stock market .The findings report the autocorrelation in stock returns in all the Asian stock markets.Ti rejects the relationship between stock returns and expected volatility;however, the relationship is significant whit unexpected volatility. It brings out that investor's adjust their risk premium for expected

variations in stock prices, but they expect extra risk premium for unexpected variations. Further, Karmacharya (2010) applies GARCH (1, 1) and T-GARCH (I1 1) to investigate the conditional heteroskedasticity in time series of the US stock market returns, and the asymmetric effect of good and bad news on volatility. The study also analyzes the relationship between stock returns and conditional volatility, and standard residuals. It uses S&P 500 and NASDAQ 100 for the period January 1990 to December 2007. The results suggest the presence of the heteroskedasticity effect and the asymmetric nature of stock returns. It also reports a negative significant relationship between stock returns and conditional volatility. However, the relationship between stock returns and standardized residuals is found to be significant.

Karmacharya (2010) investigate the asymmetric nature of the US stock market returns, heteroskedasticity effect on stock return volatility and the relationship between stock returns and conditional volatility, and standard residuals. The study uses S&lP 500 for the period January 1950 to December 2007. The results suggest the presence of nonlinearity, heteroskedasticity effect and asymmetric nature of stock returns. It also finds no correlation between stock returns and conditional volatility, however, the relationship between stock returns and standardized residuals is found to be positively significant. These findings bring out the essential elements of the modem investment theory that investors adjust their investment decisions with respect to expected volatility; however, they tend to earn extra risk premium for the unexpected volatility.

2.3. Research Gap

Commercial Bank invests its deposit in different profitable sector according to the directives and circulars of the Nepal Rastra Bank and guidelines and policy of their own bank. Financial analysis statement has to prepare according to direction of NRB. Nepal Rastra Bank's policy and guidance are changing according time. So, the up to dated study over the change of time frame is major concern for the researcher and concerned organization as well as

industry as a whole. This study covers the more recent financial data and analysis is done with in the latest guidelines and curriculum of Nepal Rastra Bank.

No research has been undertaken regarding the risk and return analysis between the Nabil Bank, Himalayan Bank, Nepal Investment Bank and Nepal Credit and Commerce Bank. Some researcher has done the comparative studies of other joint venture bank. But with in this bank, study is not found. Risk and return study is the vital study for every stake holders. Therefore it is the major concern of stakeholders to know the situation of the bank.

NABIL and HBL are the leading joint venture commercial banks and NIBL and NCC are the non joint venture Banks of the country having the huge market share and its investment a activities and these banks has significant impact on developing the economy of the country. Every year the financial performance is changing according to the environment of the country. Hence, this study fulfills the prevailing research gap about the in depth of risk and return analysis which is the major concern of the shareholders.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology refers to the overall research process, which a researcher conducts during his/her study. It includes all the procedures from theoretical underpinning to the collection and analysis of the data. Research can be conducted based on primary and secondary data. Here in the study all the data are secondary data is analyzed with using appropriate Financial and statistical tools.

In his research the research design, data collection procedures and analysis are describe serially.

3.2 Research design

The present study is based on descriptive and analytical research design. Descriptive research design is used to describe the relationship between risk and return from tables, graphs, trend lines, and figures with basic calculation of present collected data. Similarly analytical research design is used to analyze the standard deviation, correlation coefficient, coefficient of variation, beta coefficient, risk premium, expected return, and average rate of return, of sampled banks. Analytical research design evaluates the present data clearly. The study has been carried out from 1st July 2001 to 1st July 2008.

3.3 Population and sample of survry Design

A small portion chosen from the population for studying its properties is called a sample & the number of unites in the sample is known as the sample size.The method of selecting for study a small portion of the population to draw conclusion about characteristics of the population is known as

sampling.Sampling may be defined as the selection of part of the population on the basis of which a judgement or inference about the universe is made.(Sharma & Chaudhary,2058:173)

Here only 4 sample commercial banks are taken out of 32 commercial banks .For selecting the samples , randam sampling method is used here among the different methods. The samples are taken only from the commercial banks,which are listed befor 15th july 1998A.D.in NEPSE . Organiztion under study is as follows, whose general introduction &major objections are presented in chapter one. The sample Organizations are as follows:

NABIL BANK LTd

HIMALAYAN BANK LTD

NEPAL INVESTMENT BANK LTD

NEPAL CREDET & COMMERCE BANK LTD

Likewise, financial statements of seven years (beginning from 2060/61 to 2066/67)are selected as samples for the purpose of it.and the total population & sample size has been shown in the Appendices 1.

3.4 Sources of Data

The data for the study depends up on the primary as well as secondary sources of data. The main source of data is the reports of NEPESE, reports of the SEBON, Websites &published financial statement (i.e. annual report)of concerned banks, & the periodicals published data of NRB. Annual report of NEPSE has been used to taken financial statement & trading report of listed commercial bank. The data has been taken from NEPSE to with draw the opening & closing prices. Similarly, SEBON has been visited to collect annual report of sampled banks. Websites have been clicked to tale the operational data of commercial bank. The researcher has carefully designed questionnaire by considering visions influencing factor of industry environment &management of respondents are 20 who respond the questionnaire properly.

3.5 Data collection Procedure

Almost the necessary data for the research is collected from secondary source. However, opinion has also been taken with individual investors, related organizational officials, SEBON and NEPSE staffs and other related personalities. Data related to market prices of share, market capitalization and movement of NEPSE index etc is taken from the trading report published by NEPSE. Other data of related companies are taken from the companies as well as their web sites.

The collection procedure is summarized below

• Financial documents provided by companies.
• Trading Manual published by Nepal stock Exchanged limited.
• Telephone inquires.
• Personal interview.
• Related web sites.
• Materials published in papers and magazines.
• Other related books and booklets.

3.6. Methods of data analysis

The collected data are analyzed using various financial tools as well as statistical tools, which are given and defined below:

3.6.1. Financial Tools

Following factors and formulas have been studied under financial tools for analysis of risk and return.

3.6.1.1. Market price of stock (p)

One of the major data of this study is market price of stock, among high, low and closing price. Each year closing price has been taken as market price of the stock, which has specific time span of one year and the study, has focused in annual basis. Closing Price is used as market price of stock.

Market value in the Secondary market is determined by the supply and demand factors and reflects the opinion of investors and traders concerning the Value of the stock.

3.6.1.2 Dividend (D)

Dividend is that part of earnings that distributed to the shareholders as a part of their investment. Dividend is return to Equity capital that consists price of time and price of risk taking by the investor. The total amount of dividend out of earning available to the shareholders, if distributed the common stock's portion is said dividend per share (Dps). Symbolically expressing of DPS is given bellow.

$$Dps = \frac{\text{The total Amount of dividend paid}}{\text{Number of common stock outstanding}}$$

Dividend is relevant during computation of rate of return, which is a reward to the shareholders for their investment which can be given in different from. For instance cash dividend and stock dividend etc. if company declares only cash dividend, there is no problem while taking the exact amount of dividend that is relevant. But Bonus share is issued shareholders will receive extra number of share. Consequently the price dividend following model has been used throughout.

That dividend Amount= Cash div+% stock div × Next year Mps

3.6.1.3 Earnings (E)

Earnings refers to the net income after takes of the company Earning per share (EPS) is the result of Net income after taxes if divided the outstanding number of common stocks. Symbolically, EPS can be expressed as follows.

$$E = \frac{\text{Net Income after Taxed}}{\text{Number of common stock outstanding}}$$

3.6.1.4 Return of common stock Investment (R)

The return is the total gain or loss experienced on an investment over a given period of time. It is commonly measures as the change in va1ue plus only cash distributions during the period expressed as a percentage of beginning of period investment value. Symbolically, return (R) can he expressed as follows:

$$R_p = \frac{(p_t + p_{t-1}) + D_t}{P_{t-1}}$$

Where,

R = Actual rate of return on common stock at time t

P= price of a stock at time t

D = Cash dividend received at time t

P_{t-1}= price of a stock time (t-1)

3.6.1.5 Expected Return of common stock

The study also aims to find out the expected return on the investment in common stock. Usually this rate is obtained by Arithmetic Mean of the past year's return. Symbolically, R can be expressed as follows.

$$R_j = \frac{\sum R}{n}$$

where,

R_j = Expected rate of return on stock j

n= Number of year that the return is taken

Σ=Sign of summation

3.6.1.6 Standard deviation (σ)

This is a measure of the dispersion of forecast returns when such returns approximate a normal probability distribution. It is a statistical concept and is widely used to measures risk from holding a single asset. The standard deviation is derived so that a high standard deviation presents a large dispersion of return and is a high risk and vice-versa.

It is a statistical measure of the variability of return around its mean. It is the square root of the variance and measures the unsystematic risk of stock investment. Symbolically, 'σ' can be expressed as follows :

$$\sigma = \sqrt{\frac{\sum (Rj - R_{j-1})^2}{n-1}}$$

Where,

σ =Standard deviation of returns on stock 'j' during the time period n

3.6.1.7 Coefficient of variation (CV)

The coefficient of variation, (CV), is a measure of relative dispersion that is useful in comparing the risk of assets with differing expected returns. The higher the coefficient of variation, the greater the risk, symbolically, CV can be expressed as follows:

$$CV = \frac{\sigma_j}{\overline{R}_j}$$

Where,

CV =Coefficient of variation

σ =Standard deviation of returns on stock 'j'

$\overline{R}_j$=Expected rate of returns on stock

3.6.1.8 Portfolio Return (Rp)

Portfolio is a combination of two or more than two securities. In other words, the return on a portfolio is a weighted average of the returns on the individual asset from which is formed. Symbolically, R can express as follows:

$$\overline{R}p = \sum_{j=1}^{n} w_i \overline{R}_i$$

Where,

W= Proportion of the portfolio's total Rupees Value represented by asset. 'j'

$\overline{R}$ = Return on asset 'j'

$\sum_{j=1}^{n}$ = means that 100 percent of the portfolios assets must be included in this computation.

3.6.1.9 Portfolio Risk.

Portfolio risk is the measure of combined standard deviation of stocks held in portfolio with reference to individual stock corresponding correlation contribution symbolically, portfolio risk can be expressed as follows:

$$\sigma_p = \sqrt{w_A{}^2 \sigma_A{}^2 + w_B{}^2 \sigma_B{}^2 + 2w_A w_B r_{AB} \sigma_A \sigma_B}$$

Where,

σ_p = Portfolio Risk

WA = Proportion of stock 'A' Held in the portfolio

WB = portion of stock 'B' Held in the portfolio

r_{AB} = Correlation between stocks.

3.6.1.10   Risk minimizing portfolio(W_A)

It is the portfolio of stock A that minimize the possible unsystematic risk. Symbolically, Risk minimizing portfolio can be expressed as follows:

$$W_{A=} \frac{\sigma_B^2 - \text{cov}(r_A r_B)}{\sigma_A^2 + \sigma_B^2 - 2\text{cov}(r_A r_B)}$$

Where,

W_A = Weight or proportion of stock A that minimize the portfolio risk of A and B.

3.6.1.11   Required rate of return (K_i)

Required rate of return is minimum expected rate of return needed to induce an investor to invest his/her fund. It is always more then risk less rate of return. Normally, when an individual investment is giving higher return, i.e. realized rate of return then its required rate of return, this type of investment is known as under-priced investment. Such under-priced assets should be purchased. On the other hand, if the realized rate of return is less then required rate of return of a particular asset, it is said to be over-priced assets. Such assets should not be purchased, instead, if one is holding such asset, it should be sold immediately symbolically, required rate of return can expressed as follows:

$K_i = R_f + [R_m - R_f] \beta_i$

Where,

K_i = Required rate of return on i security

R_m = Expected return on Market

R_f = Risk free rate of return

β_i = beta coefficient

3.6.1.12   Beta coefficient (βi)

The beta coefficient, β, measures no diversifiable risk. It is an index of the degree of movement of an assets return in response to a change in the market return. An asset's historical returns are used in finding the asset's beta coefficient. The "Market return" is the return on the market portfolio of all traded securities. The NEPSE stock composite index or some similar stock index is used as the market return. Although betas for actively traded stocks can be obtained from a variety of sources.

Market sensitivity of stock is explained in terms of beta coefficient. Higher the beta greater the sensitivity and reaction to the market movement. Market beta serves as a benchmark or a measuring scale for the evaluation of risk of individual stocks. For an individual stock, the beta could be less than, equal to or more than 1 depending upon the volatility of the stocks return relative to market returns. Symbolically, beta coefficient can be expressed as follow:

$$\beta = \frac{COV\ (R_j R_m)}{\sigma_{m^2}}$$

Where,

$COV(R_j R_m)$ = Covariance of the return on assets i, and the market portfolio

σ_m^2 = Variance of the return on the market portfolio

R_m = Required rate of return on the market portfolio of securities.

3.6.1.13 Portfolio Beta (β_p)

The beta of a portfolio can be easily estimated using the beta of the individual assets it includes. Symbolically, portfolio beta Coefficient can be expressed as follows:

$$\beta_p = \sum_{i=1}^{n} w_i \beta_i$$

Where,

W_j =Proportion of the portfolio's total value represented by assets 'j'

β_i = Beta coefficient of assets i

β_p = Portfolio beta coefficient

Portfolio betas are interpreted in the same way as individual asset betas. They indicate the degree of responsiveness of the portfolio's return to change in the market return.

3.6.1.14 Correction coefficient (r_{xy})

Correlation is a statistical measure of the relationship, if any, between series of numbers representing data of any kind, from returns to test scores. If two series move in the same direction, they are positively correlated: if the series move in opposite direction. They are negatively correlated. The degree of correlation is measured by the correlation coefficient which ranges from + 1 for perfectly correlated series to -1 for perfectly negatively corrected series.

Symbolically, correlation coefficient can be expressed as follows:

$$r_{xy} = \frac{COV\ (r_x r_y)}{\sigma_x\ \sigma_y}$$

3.6.1.15 Unsystematic risk

Unsystematic risk is the portion of total risk that can be diversified away. It is also called non-market risk avoidable risk or diversifiable risk. $(\sigma_{ei}) = \sigma_i - \sigma_{ij}$

3.6.1.16 Systematic risk

Systematic risk is the portion of the total risk of an individual security caused by market factor that simultaneously affect the prices of all securities. It is also called market risk or unavoidable risk or beta risk.

3.6.1.17 Single index model

The single index model provides that the desirability of any stock is directly related to its excess return to beta ratio. The number of stocks selected depends on a unique cut of rate such that all stocks with higher ratios will he included and all stocks with lower ratios excluded. Symbolically express as C*.

$$\text{Cut off rate } (C_i) = \frac{\sigma_m^2 \sum_{i=1}^{i} \frac{(\overline{R}_i - R_f)\beta_i}{\sigma_{ei}^2}}{1 + \sigma_m^2 \sum_{i=1}^{i} \frac{\beta_i^2}{\sigma_{ei}^2}}$$

Where,

(σ_m^2) = Variance of the market index

(σ_{ei}^2) = Unsystematic risk of securities

3.6.2 Statistical Tools

Following Statistical tools have been used for analysis or interpret the data collected.

3.6.2.1 Tools for testing Hypothesis

A. <u>Test of significance for a single mean</u>

It is applied for hypothesis testing to test whether there is any significant difference between average mean of companies with market portfolio or not. If the test is test of significance for a single mean the test statistic (t) is given by:

$$t = \frac{\overline{X} - \mu}{\dfrac{s}{\sqrt{n}}}$$

Where,

t = students test statistics

x = Arithmetic mean of sample statistics

μ= Arithmetic mean of population parameter

s = Estimated standard deviation of population parameter with is given as :

$$s = \sqrt{\frac{\sum (x - \overline{x})^2}{n-1}}$$

n= Sample size

3.7 Limitation of the Methodology

The data collection for analysis is based on the secondary data. There are only 4 commercial banks listed on NEPSE index are taken as sample. For the analysis of the return financial tools like holding period return, capital assets pricing model are used. For analyzing risk statistical tools of standard deviation, coefficient of variation are used. Beta coefficient is also analyzed by using covariance. The test of hypothesis is conducted using the t-test

CHAPTER 4
DATA PRESENTATION AND ANALYSIS

4. Presentation and Analysis of data:

Presentation and anlaysis of data is very important stage of resource study. Its main purpose is to change the unprocessed data into understandable form. This chapter includes all the collected data and their interpretation. In the study the data of the market price of the shares of selected companies, cash and stock dividend paid, market return, NEPSE index and many other related terms are presented and analyzed. Tables and diagrams are used to make the result more simple and clear.

4.1 Analysis of Individual Companies

Here below analysis of all the selected companies are made. Eight companies listed in NEPSE are taken as sample. Their MPS, DPS and other related data are presented in table and analysis is made accordingly, using appropriate tools. Data are sorted in fiscal year 060/61, 061/62, 062/63, 063/64, 064/65, 065/66 and 066/67.

4.1.1 Nabil Bank Limited

The data of market price per share and dividend per share of Nabil Bank is presented in following table.

Table 4.1

MPS and DPS of NABIL

Fiscal Year	Market Price Per Share in Rs.			Dividend Per Share			Remarks
	High	Low	Closing	Cash	Stock	Total	
060/61			1000	65	-	65	
061/62	1800	1160	1750	70	-	70	
062/63	2300	1500	2240	70	-	70	
063/64	5050	2025	5050	85	-	85	
064/65	6700	3410	5275	100	2.5:1	2060	40%div Share
065/66	6400	3050	4899	60	2.5:1	1180	40%div Share
066/67	5120	2230	2384	30	2.5:1	1024	40%div Share

Source: NEPSE, NABIL Bank and Nepal share market

Total Dividend Calculation:

Total Dividend = Cash dividend + Stock dividend% × next year's market price

2064/65 Total Div= 100+.4×4899=2060

65/66 Total div= 60+0.4×2800=1180   (price for next year is 12th November 2009=2800)

2066/67 Total Dividend = 30+0.4x 2485=1024

This is the table which helps to show market price per share & divident per share of Nabil by using the NEPSE, annual report of NABIL in Nepal share market as the sources of data collection. In this above table remarks helps to show the declared stock dividend percentage by the bank, which provided to the respective shareholders in different time period.

On the basic of above table, the annual market price movement of common stock can be shown by the following Figure.

Figure 4.1

Annual market price movement of the common stock of NABIL
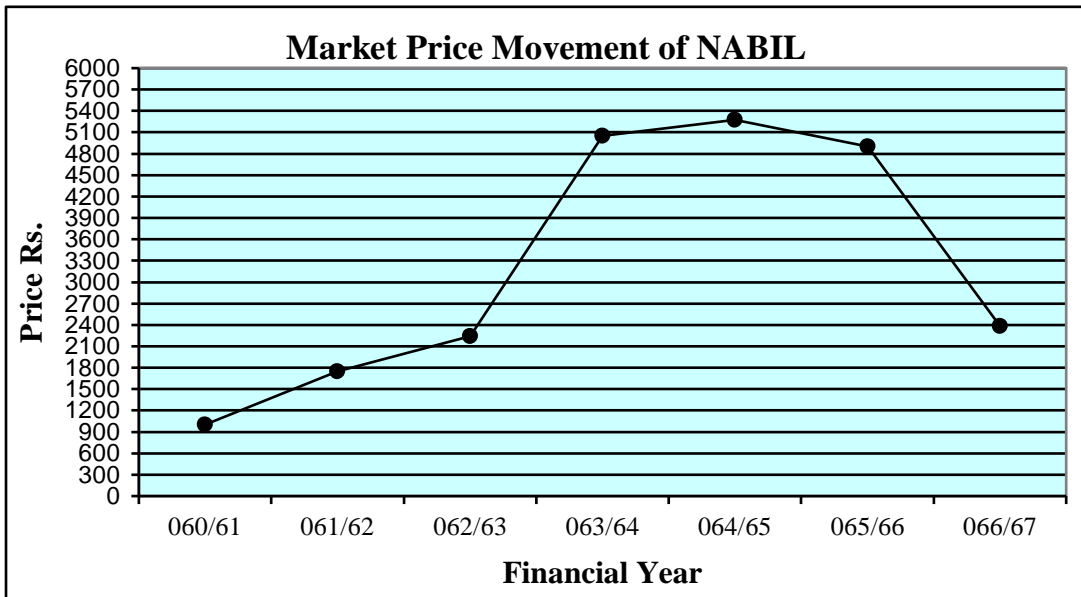
From the figure 4.2 shows that the share price is maximum at the year 2064/65 and minimum in the year 2060/61. The trend line shows that the share price movement is inclining 2064/65, slightly decreased in the year 065/66 and it decreased more in 2066/67. It is assumed that the growth of share market after the peace process in the year 062/63 makes the vertical growth of the share price of NABIL but the world economic crisis decline more in 066/67 and the bonus share is said to be the cause of declining the share price in the year 066/67.

Calculation of Realized rate of return (R), Expected rate of return ($\bar{R}$), Standard Deviation (σ) and coefficient of Variation (CV) of NABIL.

The realized rate of return is calculated on the basis of the year end price movement of shares, including the dividend paid by the company. Here is the table showing all the figures.

Table 4.2

Realized Return (R), Expected Return ($\bar{R}$) Standard Deviation (σ) and Coefficient of variation (CV) of NABIL.

Fiscal Year	Year end Price	Dividend (D)	$R=\dfrac{P_1-P_0+D_1}{P_0}$	R-$\bar{R}$	(R-$\bar{R}$)²	Remarks
060/61	1000	65	-	-		
061/62	1750	70	0.82	0.3650	0.133	
062/63	2240	70	0.32	-0.1350	0.018	
063/64	5050	85	1.29	0.835	0.697	
064/65	5275	2060	0.4525	-0.0025	0.0001	
065/66	4899	1180	0.154	-0.303	0.0917	
066/67	2384	1024	-0.3023	0.759	0.0576	
Total			ΣR=2.7302		Σ(R-$\bar{R}$)²=0.9974	

Expected Return = $\bar{R} = \dfrac{\sum R}{n} = \dfrac{2.7302}{6} = 0.455$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum (R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{0.9974}{7-1}} = 0.4077$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R} = \dfrac{0.4077}{0.455} = 0.8961$

Here, the calculation shows that the expected rate of return of the stocks of NABIL is 45.5% and the risk i.e. standard deviation is 40.77%. The coefficient of Variation is 0.8961, which means for earning 1 unit of return the investors have to bear 0.8961 unit of risk.

Annual rate of return of CS of NABIL.

Annual rate of return of CS of NABIL
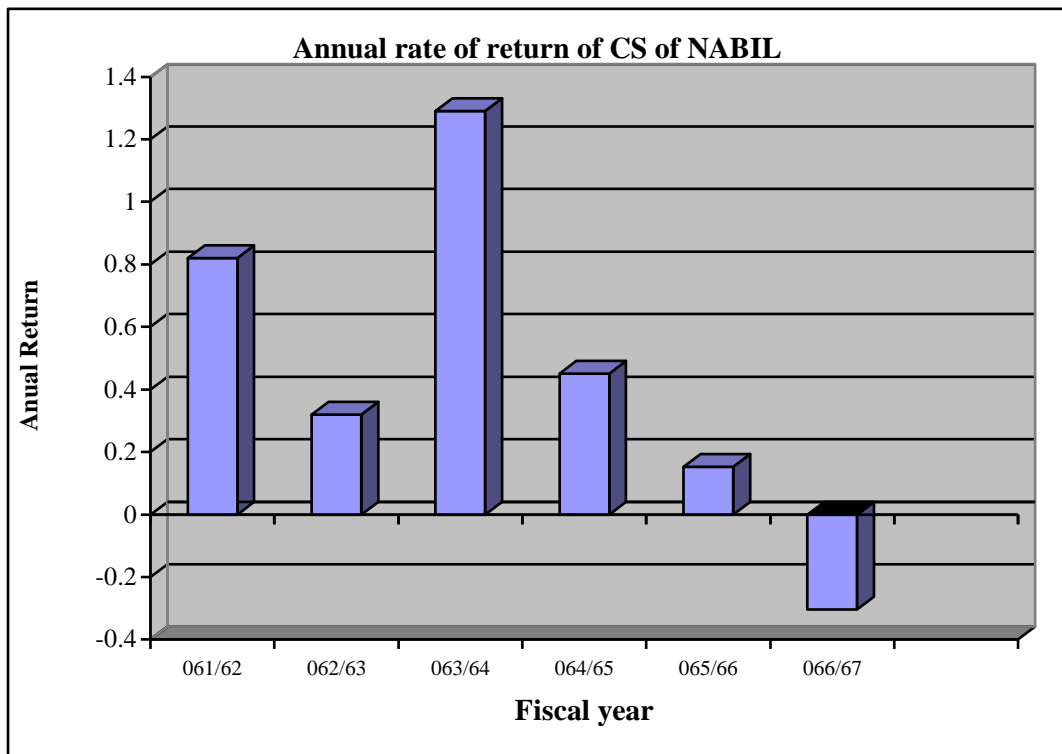
It is found that annual rate of return in the year, 2066/67 is negative while the annual return in the year 2063/64 is maximum.

4.1.2 Himalayan Bank

The data of market price per share and dividend per share of Himalayan Bank is presented in following table.

Table 4.3

MPS & DPS of HBL

Fiscal Year	Market Price Per Share in Rs.			Dividend Per Share			Remarks
	High	Low	Closing	Cash	Stock	Total	
060/61	1010	600	840	0	5:1	184	20%div Share
061/62	1181	855	920	11.58	5:1	231.5	20%div Share
062/63	1200	900	1100	30	20:1	118.1	5%div Share
063/64	1760	850	1762	15	4:1	510	25%div Share
064/65	2856	134	1980	25	5:1	377	20%div Share
065/66	2730	111	1760	12	1:0.31	264.9	31%div Share
066/67	1750	750	816	12	1:0.3155	267.5	31.55%div Share

Source: NEPSE, Himalayan Bank and Nepal share market

Total Dividend Calculation:

Total Dividend = Cash dividend + Stock dividend%× next year's market price

060/61 Total Div= 0+0.2×920=184.00

061/62 Total Div= 11.58+0.2×1100=231.00

062/63 Total div= 30+0.05×1762=118.10

063/64 Total div= 15+0.25×1980 = 510.00

064/65 Total div= 25+0.2×1760=377.00

065/66 Total div= 12+0.31×816=264.96

066/67 Total div=12+0.3155x810=267.55

The table 4.3 helps to show market price per share & divident per share of HBL by using the NEPSE, annual report of HIMILAYAN BANK &Nepal share market as the sources of data collection. In this above table remarks helps to show the declared stock dividend percentage by the bank, which provided to the respective shareholders in different time period.

On the basic of this table, the annual market price movement of common stock can be shown by the following Figure.

Figure 4.3

Annual market price movement of common stock of HBL.
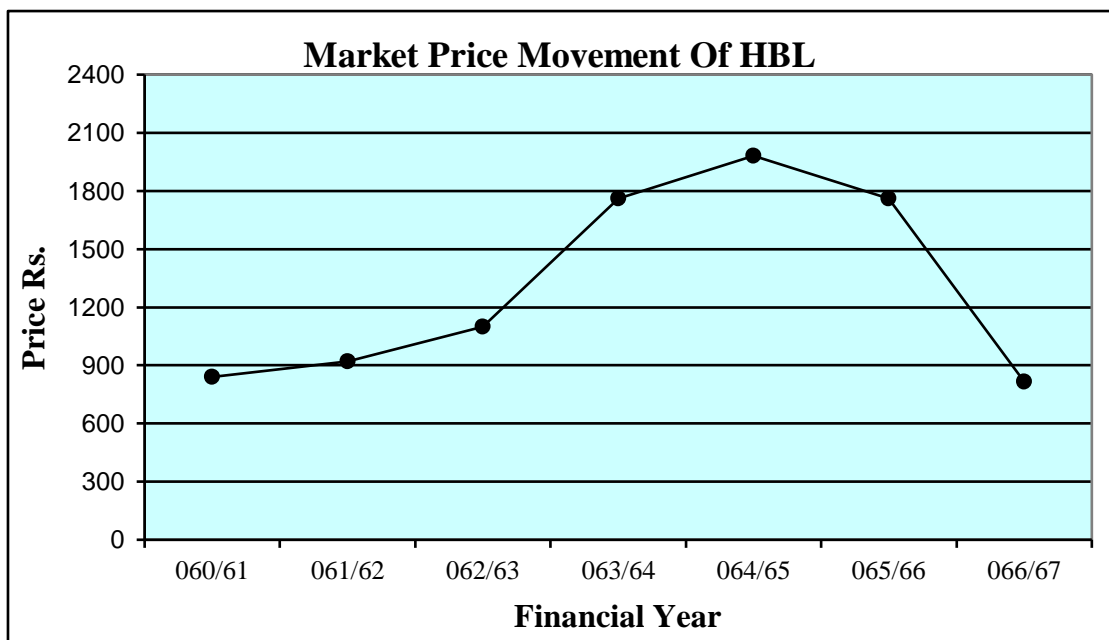
Figure 4.3 helps to show the share price goes on increasing up to 064/65 and it is decreasing in the year 066/67 as effect of world economic crisis. The peace process and also effects in the share price of HBL. The maximum price is in 064/65 and minimum in year 066/67.

Table 4.4

Realized Return (R), Expected Return ($\overline{R}$) Standard Deviation (σ) and Coefficient of variation (CV) of HBL.

Fiscal Year	Year end Price	Dividend (D)	$R=\dfrac{P_1-P_0+D_1}{P_0}$	R-$\overline{R}$	(R-$\overline{R}$)^2	Remarks
060/61	840	184.00	-	-	-	
061/62	920	231.58	0.371	0.0667	0.0044	
062/63	1100	118.10	0.324	0.0197	0.0004	
063/64	1762	510	1.065	0.7607	0.5787	
064/65	1980	337	0.315	0.0107	0.0001	
065/66	1760	486.30	0.134	-0.1693	0.0287	
066/67	816	267.5	-0.384	-0.6883	0.4738	
Total			ΣR=1.826		Σ(R-$\overline{R}$)^2=1.0861	

Sources: NPESE, Himalayan Bank & Nepal share market

Expected Return = $\overline{R}$ = $\dfrac{\sum R}{n}$ = $\dfrac{1.826}{6}$ = 0.3043

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum(R-\overline{R})^2}{n-1}}$ = $\sqrt{\dfrac{1.0861}{7-1}}$ = 0.1810

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R}$ = $\dfrac{0.1810}{0.3043}$ = 0.5949

It is found that the expected return and expected risk is 30.43% and 18.10%. CV is 0.59 so investors have to bear risk of 0.59 units of risk for earning the return of 1 extra unit.

Figure 4.4
Annual rate of return of CS of HBL.
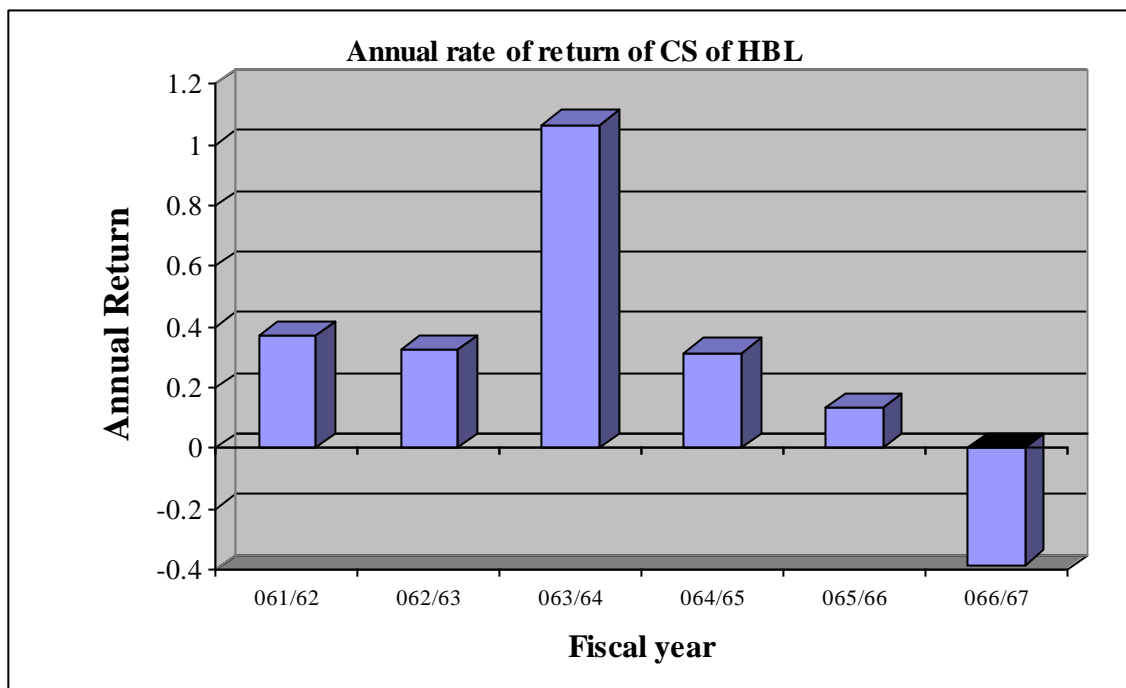
It is found that the rate of return in the year 063/64 is maximum and 066/67 is negative

4.1.3 Nepal Investment Bank

The data of market price per share and dividend per share are presented in following table.

Table 4.5
MPS and DPS of NIB

Fiscal Year	Market Price Per Share in Rs.			Dividend Per Share			Remarks
	High	**Low**	**Closing**	**Cash**	**Stock**	**Total(Rs)**	
060/61	942	745	940	15	-	15	
061/62	1430	760	800	20	-	20	
062/63	1265	762	1260	20	4:1	633	35.46%div Share
063/64	1729	1000	1729	5	4:1	617.5	25%div Share
064/65	3101	1305	2450	7.5	3:1	397.5	33.33%div Share
065/66	3670	990	1388	20	-	20	
066/67	1460	675	705	25	-	25	

Source: NEPSE, Nepal investment bank and Nepal share market

Total Dividend Calculation:

Total Dividend = Cash dividend + Stock dividend%× next year's market price

062/63 Total div= 20+0.3546×1729=633

063/64 Total div= 5+0.25×2450 = 617.5

0064/65 Total div=7.5+0.3333×1388=397. 5

Table 4.5 helps to show market price per share & divident per share of NIB by using the NEPSE, annual report of NIB &Nepal share market as the sources of data collection. In this above table remarks helps to show the declared stock dividend percentage by the bank, which provided to the respective shareholders in different time period.

On the basis of this table, the annual market price movement of common stock can be shown by the following figure.

Figure 4.5
**Yearend Market price movement of the common stock of NIB**
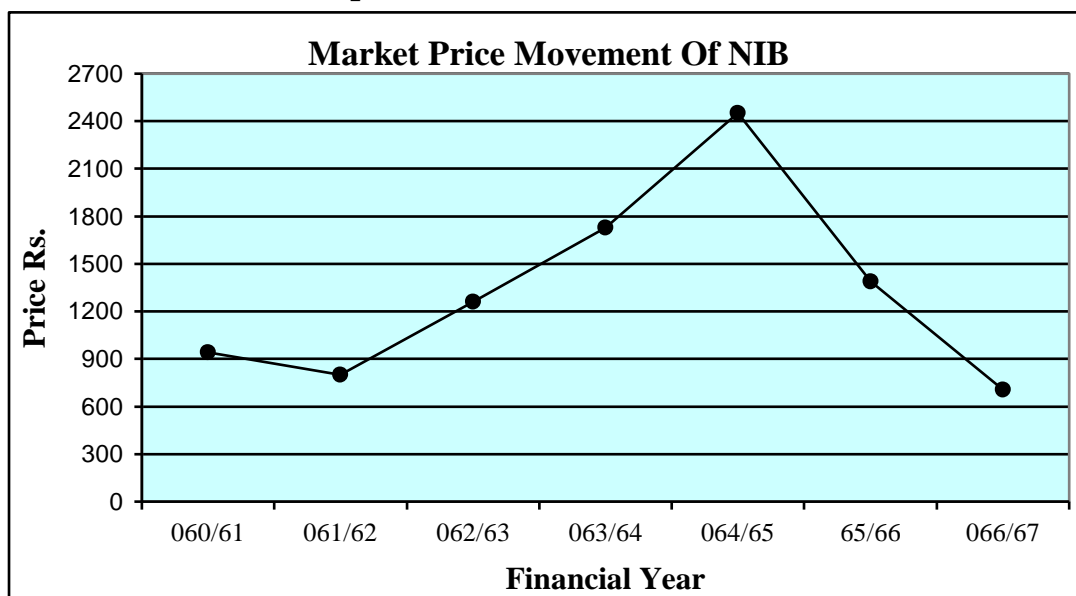
Figure 4.5 helps to show the share price is maximum at the year 064/65 and minimum in the year 066/67 as effect of world economic crisis. The trend line

shows that the share price movement is in increasing trend up to 064/65 and it is declining in the from year 065/66. The inclining is said to be the cause of improve in the political situation.

Calculation of Realized rate of return (R), Expected rate of return ($\bar{R}$), Standard Deviation (σ) and coefficient of Variation (CV) of NIB.

The realized rate of return is calculated on the basis of the year end price movement of shares, including the dividend paid by the company. Here is the table showing all the figures.

Table 4.6

Realized Return (R), Expected Return ($\bar{R}$) Standard Deviation (σ) and Coefficient of variation (CV) of NIB.

Fiscal Year	Year end Price	Dividend (D)	$R=\dfrac{P_1 - P_0 + D_1}{P_0}$	R-$\bar{R}$	(R-$\bar{R}$)²	Remarks
060/61	940	15	-	-	-	
061/62	800	20	-0.1277	-0.5208	0.2712	
062/63	1260	633	1.3662	0.9731	0.9469	
063/64	1729	617.5	103726	0.9795	0.9594	
064/65	2450	397.5	0.6469	0.2538	0.0644	
065/66	1388	20	-0.4253	-0.8184	0.6698	
066/67	705	25	-0.4741	-0.8672	0.7520	
Total			ΣR=2.3586		Σ(R-$\bar{R}$)²=2.9939	

SOURCE:NEPSE,NIB,NEPAL SHARE MARKET

Expected Return = $\bar{R} = \dfrac{\sum R}{n} = \dfrac{2.3586}{6} = 0.3931$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{2.9939}{7-1}} = 0.4989$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R} = \dfrac{0.4989}{0.3931} = 1.27$

Here, the calculation shows that the expected rate of return of the stocks of NIB is 39.31% and the risk i.e. standard deviation is 49.89%. The coefficient of Variation is 1.27, which means for earning 1 unit of return the investors have to bear 1.27unit of risk.

Figure 4.6
Annual rate of return of CS of NIB
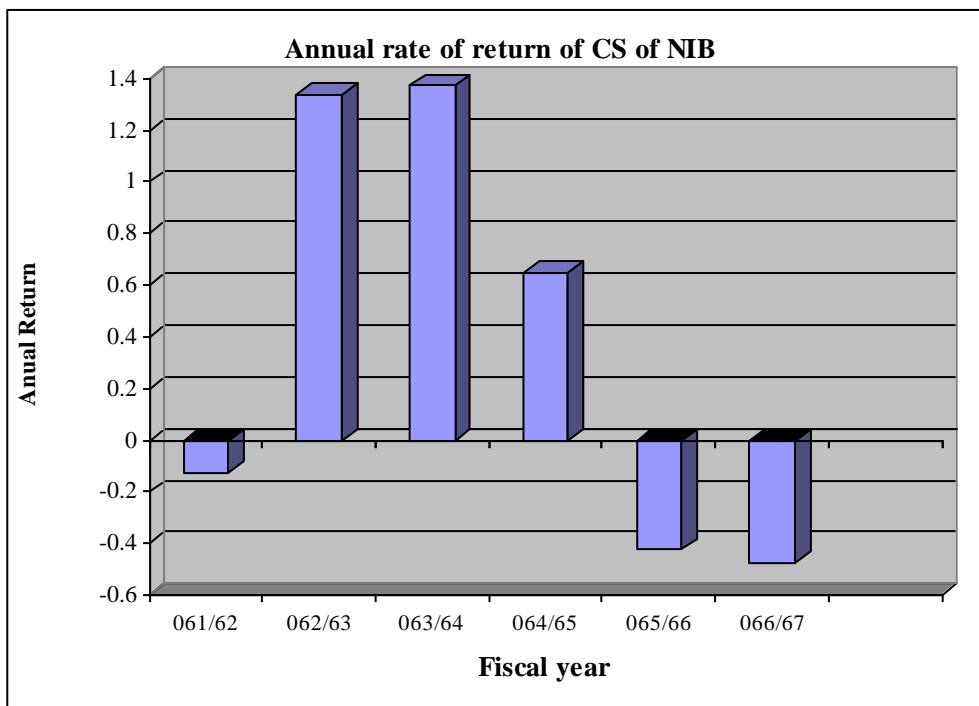
It is found that annual rate of return in the year 061/62, 065/66 and 066/67 is negative while the annual return in the year 063/64 is maximum.

4.1.4   Nepal Credit and Commerce Bank

Table : 4.7
MPS & DPS of shares of NCC

Fiscal Year	Market Price Per Share in Rs.			Dividend Per Share			Remarks
	High	Low	Closing	Cash	Stock	Total	
060/61	-	-	-	-	-	-	
061/62	155	110	111	-	-	-	
062/63	135	88	94	-	-	-	
063/64	336	94	316	-	-	-	
064/65	711	222	457	16	-	16	
065/66	577	262	335	-	-	-	-
066/67	275	220	257	-	-	-	-

Source:NEPSE,NCCBank and Nepalsharemarket

Table 4.7 helps to show market price per share & divident per share of NCC by using the NEPSE, annual report of NCC &Nepal share market as the sources of data collection. In this above table remarks helps to show the declared stock dividend percentage by the bank, which provided to the respective shareholders in different time period.

On the basis of this table, the annual market price movement of common stock can be shown by the following Figure.

Figure 4.7
Annual market price movement of common stock of NCC.
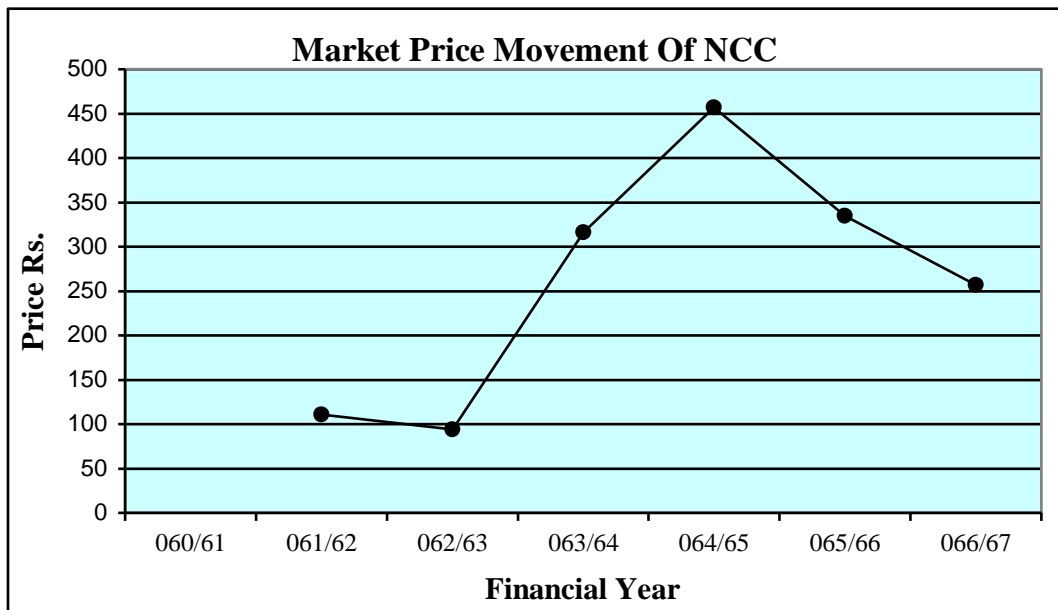
Figure 4.7 helps to show the NCC Bank's security trading was nil in the year 060/61. The share price increased vertically up to 064/65 and it decreased from the year 065/66 .The political improvement here positively effect the share price movement of NCC bank too.

Table 4.8

Realized Return (R), Expected Return ($\overline{R}$) Standard Deviation (σ) and Coefficient of variation (CV) of NCC.

Fiscal Year	Year end Price	Dividend (D)	$R=\dfrac{P_1 - P_0 + D_1}{P_0}$	R-$\overline{R}$	(R-$\overline{R}$)²	Remarks
060/61	-	-	-	-	-	
061/62	111	-	-	-	-	
062/63	94	-	-0.1532	-0.5943	0.3532	
063/64	316	-	2.3617	1.921	3.6887	
064/65	457	16	0.4968	0.0557	0.0031	
065/66	335	-	-0.2670	-0.7081	0.5014	
066/67	257	-	-0.2328	-0.6739	0.4541	
Total			ΣR=2.2055		Σ(R-$\overline{R}$)²=5.0005	

Expected Return = $\overline{R}$ = $\dfrac{\sum R}{n} = \dfrac{2.2055}{5} = 0.4411$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum (R-\overline{R})^2}{n-1}} = \sqrt{\dfrac{5.0005}{6-1}} = 1.0001$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R} = \dfrac{1.0001}{0.4411} = 2.2672$

The expected return is 44.11% and risk is 100.01% and the coefficient of variation is 2.2672 i.e. For earning 1 extra unit of return investor has to bear 2.2672 unit of risk.

Figure 4.8
Annual rate of return of CS of NCC

Annual rate of return of CS of NCC
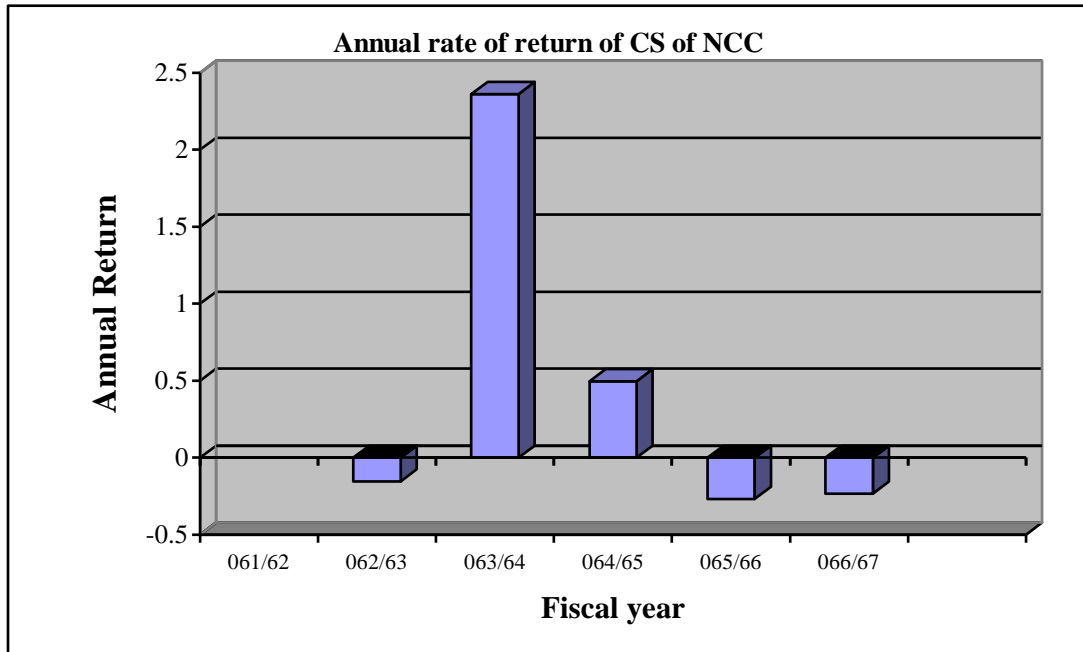
It is found that the return of NCC Bank in the year 063/64 and 064/65 is positive and 062/63, 065/66 and 066/67 is negative while the annual return in the year 063/64 is optimum.

- **Comparative analysis of the obtained result.**

Table 4.9
Companies Expected returns, standard deviations and coefficient of Variation

S. No.	Companies	Risk	Return	CV	Remarks
1	**NABIL**	40.77%	45.5%	0.8961	
2	**HBL**	18.10%	30.43%	0.5949	
3	**NIB**	49.89%	39.31%	1.2694	
4	**NCC**	100.01%	44.11%	2.2643	

Figure 4.9
Expected returns of selected Companies.
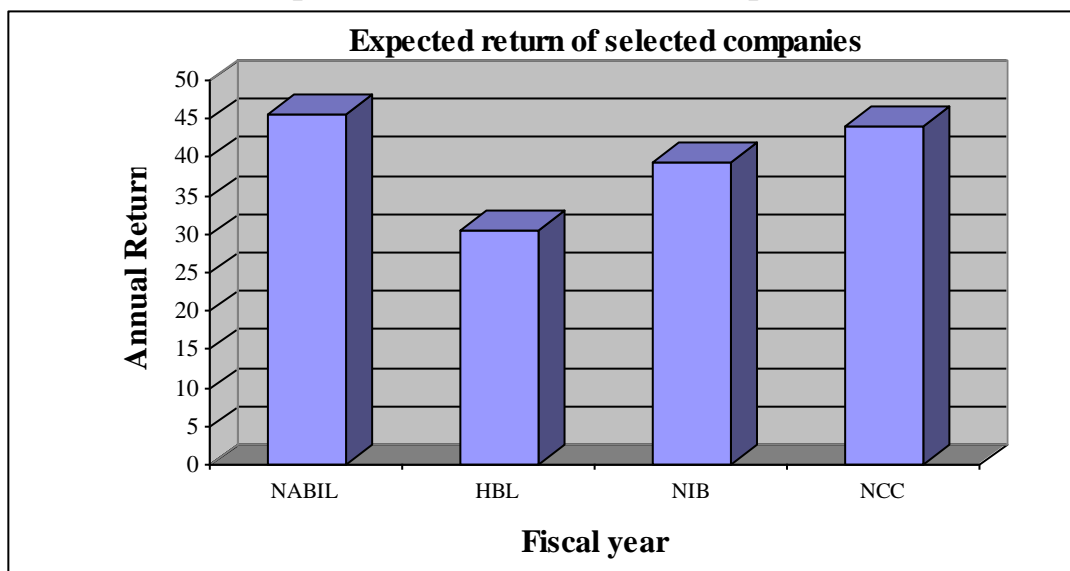
Figure 4.9 helps to show Nabil has the highest rate of return among the four selected commercial banks and HBL bank has the lowest rate of return.

4.2. Inter firm comparison

The following data shows the comparison of Selected banks.

Table 4.10
Market capitalization of selected companies: 15th July 2009

Company	Market capitalization (Rs. In million)	% of Market capitalization	Remark
NABIL	47312	44.31%	Biggest
HBL	21405	20.04%	
NIB	33410	31.29%	
NCC	4659	4.36%	Smallest
Total	**106786**	**100.00%**	

Source:NEPSE

Figure 4.10
Showing inter firm comparison of market capitalization.
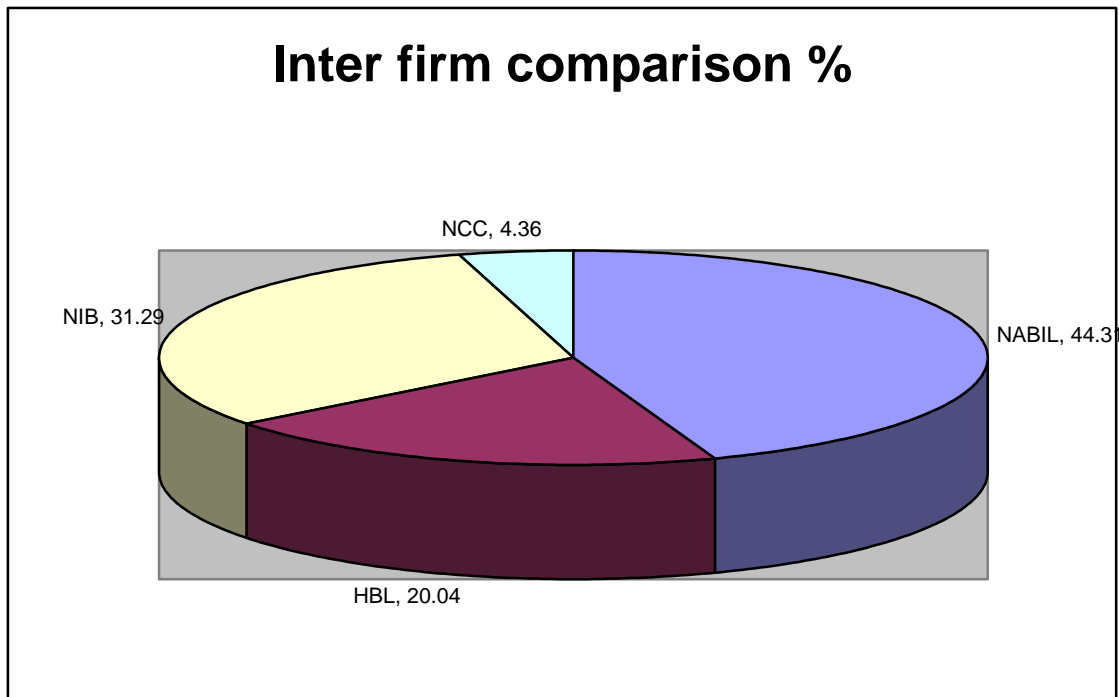
Figure 4.10 helps to show that NABIL has the biggest narket capitalization & NCC has the smallest market capitalization which refers to the nabil has the high investment power than other three selected banks.

4.3. Inter Industry Comparison

Industry is the combination or group of many more firms doing similar business. Here the comparison of industry is made on the basis of equity capitalization represents the size of industry. Here is the market capitalization of each industry at the end of 15th July 2010.

Table 4.11
Inter industry comparison of equity capitalization

Industry	Market capitalization (Rs. Million)
Commercial bank	302219.29
Manufacturing and processing	7706.09
Others	94369.16
Hotels	4851.95
Hydro power	21413.72
Trading	1696.36
Insurance	10537.49
Finance	43007.13
Development banks	27137.89
Total	**512939.08**

Sources:NEPSE & Nepal stock exchange

Figure 4.11
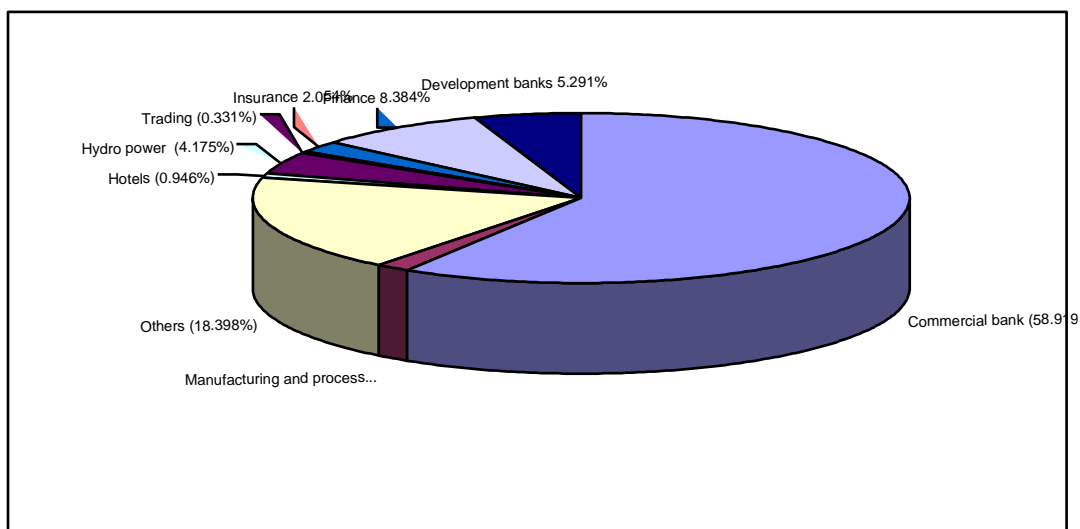
Figure 4.11 shows that commercial bank has the biggest market capitalization,comparison in the between commercial bank& manufacturing&processing,othersHotels,Hyderpower,Trading,Insurance,Finan ce&Development banks.After the commercial banks others industry has the more market capitalization power.

Table 4.12
Industry wise monthly Movement of Market Capitalization in
2009/2010 (066/67).

Year	Comm. bank	Manu& processing	Insurance	Finance	Hydro power	Dev. Bank
Shrawan 14-Aug-09	284843.83	3820.91	8379.53	39998.58	11629.82	12345.05
Bhadra 16-Sep-09	249960.37	4098.96	8186.73	39504.41	10287.36	12635.33
Ashwin 16-Oct-09	246933.06	4017.01	8383.69	39708.16	10214.40	12728.01
Kartik 13-Nov-09	199005.97	3936.91	7771.72	34185.41	8755.20	10845.67
Mangsir 15-Dec-09	180037.39	3935.99	7296.91	32845.49	8062.08	10338.45
Poush 13-Jan-10	158176.85	3866.94	6730.20	31644.55	8025.60	9279.04
Magha 11-Feb-10	160188.00	3427.77	6381.89	29255.42	7843.20	9156.29
Falgun 12-Mar-10	165405.06	3427.77	6707.51	29222.63	7660.80	10057.77
Chaitra 13-Apr-10	209842.74	3866.94	7809.80	41478.95	7879.68	16781.77
Baishakh 14-May-10	208912.78	3924.94	7317.79	42117.47	8025.60	15230.99
Jestha 14-Jun-10	231863.03	3912.98	7635.84	34441.36	8755.20	14096.48
Ashadh 15-Jul-10	270098.00	3912.98	7884.77	32396.93	9455.62	18092.87

Figure 4.12
Industry wise movement of market capitalization.
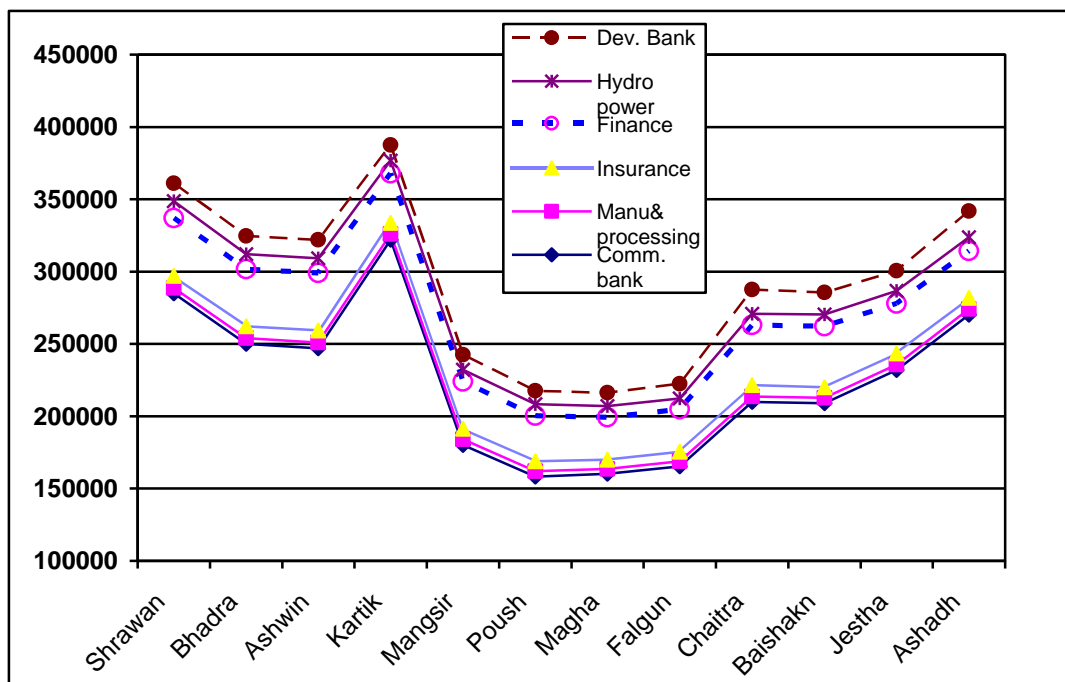
Table 4.13
Sector Wise NEPSE Index at the ending of Fiscal year.

Fiscal Year	Banking	Manf. & Processing	Hotel	Other
061/62	231.97	255.58	184.41	142.65
062/63	325.35	291.68	180.11	335.09
063/64	419.11	297.46	178.84	392.08
064/65	789.21	348.63	251.47	818.12
065/66	985.65	423.66	370.88	768.26
066/67	780.87	434.32	367.42	738.99

Source:NEPSE

Continue:

Fiscal Year	Hydro	Trading	Insurance	Finance	Dev Bank	Total
061/62		95.01	237.62	195.99	190.03	222.04
062/63		126.91	321.38	229.69	226.11	300.05
063/64		148.11	365.37	258.46	275.25	372.21
064/65	847.93	155.37	612.46	471.82	539.66	683.95
065/66	1323.99	204.08	817.25	1152.74	1285.89	963.36
066/67	1044.81	295.83	656.41	697.61	772.56	749.10

Table 4.14
Realized Return, expected return and its S.D. calculation of Banking Industry.

Fiscal Year	Average Value (BI)	$R=\dfrac{BI_t - BI_{t-1}}{BI_{t-1}}$	$R-\bar{R}$	$(R-\bar{R})^2$	Remarks
061/62	231.97				
062/63	325.35	0.403	0.080	0.0063	
063/64	419.11	0.288	-0.035	0.0012	
064/65	789.21	0.883	0.560	0.3137	
065/66	985.65	0.249	-0.074	0.0055	
066/67	780.87	-0.208	-0.531	0.2817	
	Total	$\Sigma R=1.615$		$\Sigma(R-\bar{R})^2=0.6084$	

Expected Return = $\bar{R} = \dfrac{\sum R}{n} = \dfrac{1.615}{5} = 0.323$

Standard Deviation= $(\sigma) = \sqrt{\dfrac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{0.6084}{5-1}} = 0.3900$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R} = \dfrac{0.3900}{0.323} = 1.2075$

The expected return is 32.3% and risk is 39% and the coefficient of variation is 1.2075 i.e. for earning 1 extra unit of return investor has to bear 1.2075 unit of risk.

Table 4.15
Industry Wise expected return, standard deviation and coefficient of variation. (Annex 1a- 1g)

S. No.	Industry	Expected Return	S.D.	C.V	Remark
1	Banking	38.84%	5.82%	0.1485	Best as per
2	Manufacturing and Processing	12.5%	8.30%	0.665	
3	Hotel	16.5%	22.3%	1.351	
4	Other	43.2%	62%	1.435	
5	Hydro	-	-	-	
6	Trading	22.3%	17%	0.762	
7	Insurance	23.1%	29.6%	1.280	
8	Finance	33.3%	68.3%	2.051	
9	Development Banks	34.5%	50.2%	1.455	

Figure 4.13
Industry-wise expected return.
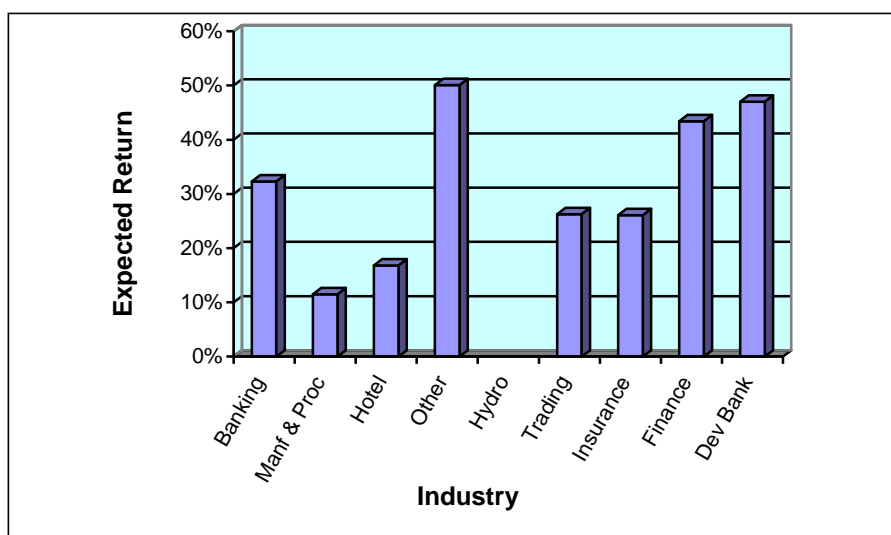
4.4 Comparison with Market

Market indicators are the best indicators to compare the above calculated individual data indicator.

4.4.1 Market risk and return

When taking about the stock market in Nepal, there is one and only stock market that is NEPSE index. Overall market is represented by a single place. The market return, its S.D and C.V. is calculated below.

Table 4.16
Market returns; its S.D and C.V.

Fiscal Year	NEPSE Index (NI)	$R_m = \dfrac{NI_t - NI_{t-1}}{NI_{t-1}}$	$R_m - \overline{R}_m$	$(R_m - \overline{R}_m)^2$	Remarks
060/61	226.59				
061/62	222.04	-0.020	-0.286	0.0818	
062/63	300.05	0.351	0.085	0.0073	
063/64	372.21	0.240	-0.026	0.0007	
064/65	683.95	0.838	0.572	0.3267	
065/66	963.36	0.409	0.143	0.0203	
066/67	749.10	-0.222	-0.488	0.2385	

		Total $\Sigma R_m = 1.595$	$\Sigma(R_m - \overline{R}_m)^2 = 0.6753$

Expected Return = $\overline{R}_m = \dfrac{\sum R_m}{n} = \dfrac{1.595}{6} = 0.266$

Standard Deviation = (σ) = $\sqrt{\dfrac{\sum(R_m - \overline{R}_m)^2}{n-1}} = \sqrt{\dfrac{0.6753}{6-1}} = 0.3675$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_m} = \dfrac{0.3675}{0.266} = 1.3821$

The expected return is 26.6%, risk is 36.75% and the coefficient of variation is 1.3821.

Figure 4.14
NEPSE index movements.
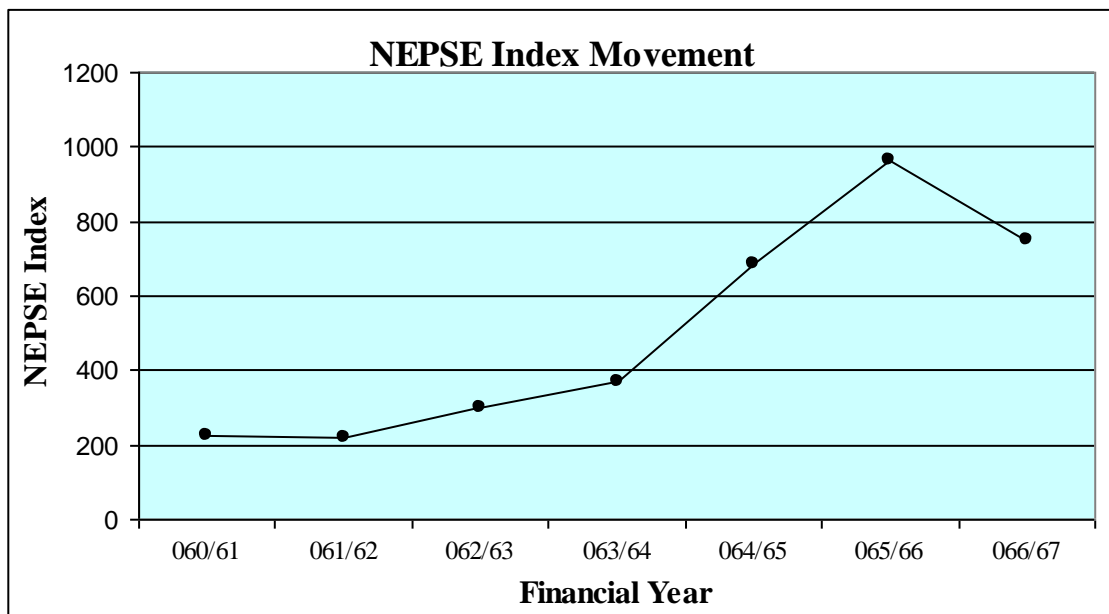
Figure 4.14 shows NEPSE is in increasing trend seems vertically increased after 062/63 and reach maximum at 065/66 and again declined in the year 066/67.

Figure 4.15
Market return movement
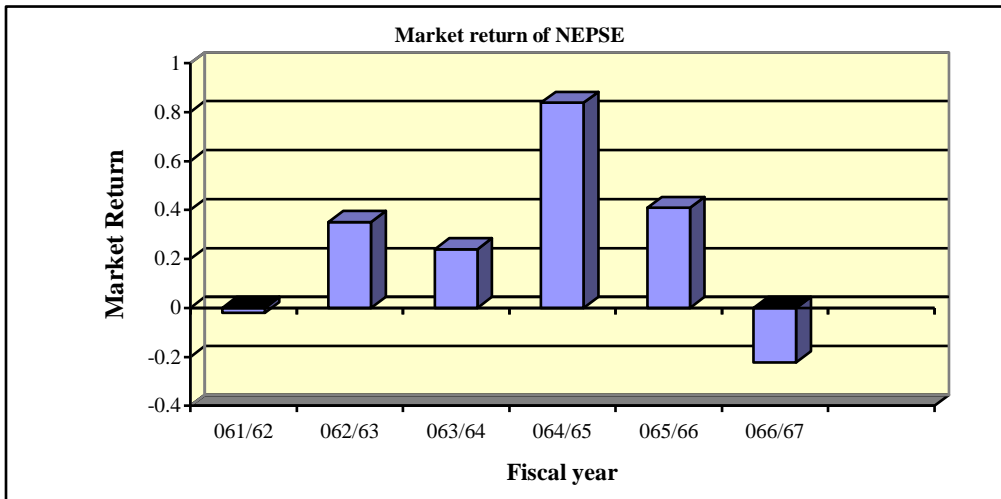
Figure 4.15 shows that the annual return in the year 2064/65 is optimum and 066/67 is highly negative.

Testing of Hypothesis (I)

The first hypothesis is based on the test of significance for the difference of mean (t test). For the expected return of selected companies are calculated in following table.

Table 4.17
Companies Expected returns, standard deviations and coefficient of Variation of Selected companies.

S. No.	Companies	Return (R_s)	$R_s - \bar{R}_s$	$(R - \bar{R}_s)^2$
1	NABIL	0.455	0.0566	0.0032
2	HBL	0.3043	-0.0941	0.0089
3	NIBL	0.3931	-0.0053	0.0001
4	NCC	0.4411	-0.0427	0.0018
		$\Sigma R_s = 1.5935$		$\Sigma(R - \bar{R}_s)^2 = 0.0140$

Expected Return = $\overline{R}_s = \dfrac{\sum R_s}{n} = \dfrac{1.5935}{4} = 0.3984$

Standard Deviation= $(\sigma) = \sqrt{\dfrac{\sum (R_s - \overline{R}_s)^2}{n}} = \sqrt{\dfrac{0.014}{4}} = 0.0592$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.0592}{0.3984} = 0.1485$

The expected return is 39.84% and risk is 5.92% and the coefficient of variation is 0.1485 i.e. for earning 1 extra unit of return investor has to bear 0.1485 unit of risk.

Null Hypothesis (H_0): $\overline{R}_s - \overline{R}_m$, i.e. there is no significance difference between the average return of selected companies and overall market return.

Under the H_0 Test statistics (t) is.

$$t = \dfrac{\overline{R}_s - \overline{R}_m}{\sqrt{S^2 \left(\dfrac{1}{n_1} + \dfrac{1}{n_2} \right)}}$$

Where,

$\overline{R}_s$ =Average return of the portfolio CS of selected companies= 0.3984

$\overline{R}_m$ = Average Return of the market =0.266

$n_1 + n_2$ = number of observation.

S^2= Estimated Standard deviation of population and

$$S^2 = \frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_1 - 2} = \frac{4 \times .0592^2 + 6 \times 0.3675^2}{4 + 6 - 2} = 0.1030$$

S_1=S.D. of returns of CS of selected companies =0.0592

S2= S.D. of market return= 0.3675

Here,

$$t = \frac{0.3984 - 0.266}{\sqrt{0.1030\left(\frac{1}{4} + \frac{1}{6}\right)}} = 0.6389$$

Degree of frequency =n_1+n_2-2 = 4+6-2 = 8

The tabulated value of t for 8 degree of frequency at 5.75 % level of significance is 1.40

Decision : Since the calculated value of t is less than the tabulated value. The null hypothesis Ho is accepted at 5.5% level of significance. There is no significant difference. In other words average return of CS of selected companies and that of market is equal.

4.4.2   Analysis of Market Sensitivity

Market Sensitivity of stock is explained by its beta coefficient. Beta is known as systematic risk measure. The beta of market is always 1. Therefore beta of any stock more than 1 is known as more risky or aggressive and beta of stock less than 1 is less risky or defensive.

Following is the proof of beta of market equals to 1:

$$\beta_j = \frac{COV(R_j R_m)}{\sigma_m^2} = \frac{\sigma_j \sigma_m r_{jm}}{\sigma_m^2}$$

Where, r_{jm} = Correlation between market return and stock say j return.

Hence,

$$\beta_m = \frac{COV(R_m R_m)}{\sigma_m^2} = \frac{\sigma_m^2 r_{mm}}{\sigma_m^2} = r_{mm} = 1$$

As, $r_{mm} = 1$

Hence, Beta of market is always 1.

Table 4.18
Calculation of beta coefficient of NABIL

Fiscal Year	$R_j - \bar{R}_j$	$R_m - \bar{R}_m$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$	Remarks
061/62	0.365	0.085	0.0310	
062/63	-0.135	-0.026	0.0035	
063/64	0.835	0.572	0.4776	
064/65	-0.005	0.143	-0.0007	
065/66	-0.303	-0.488	0.1479	
066/67	-0.759	-0.562	0.4266	
			$\Sigma(R_m - \bar{R}_m)(R_j - \bar{R}_j) = 1.0859$	

$$\text{Cov(RjRm)} = \frac{\sum\left(R_j - \bar{R}_j\right)\left(R_m - \bar{R}_m\right)}{n} = \frac{1.0859}{6} = 0.1809$$

$$\beta_j = \frac{COV(R_j R_m)}{\sigma_m^2} = \frac{0.1809}{0.1351} = 1.3396$$

Since, Beta of NABIL is 0.4649 which is less than 1 so the stock of NABIL is defensive. It is less risky. It means if the market returns increased by 1% return of NABIL increase by only 0.4649 and vice versa.

Table 4.19
Showing beta coefficient of each company the betas are calculated in
appendices from AT(2a-2c)

S.N.	Company	Beta	Remarks
1	NABIL	0.4649	
2	HBL	0.3457	Least Aggressive
3	NIB	0.8112	
4	NCC		Most Aggressive

Required Rate of return (R) Expected rate of return and price evaluation analysis.

Comparison to the required rate of return and expected rate of return gives the result. Whether the stock is under-priced or over priced. If required rate of return is less then expected rate of return, the stock is said to be under priced and investors tend to buy this type of stocks and vice versa. For this analysis risk, free rate of return is needed which assuming from the interest rate of treasury bill issued by Nepal Rastra Bank (NRB). NRB issues Treasury bill (T.B.) in each Tuesday and it has different rate set up as the bidders bid for it. NRB issued T.B. of 28, 91, 182 and 364 days duration. As suggested by the Treasury bill section of NRB, the average of the interest of all 4 T.B. is approximately 5.84%

Hence,

R_f=Risk free rate of return = 5.84% = 0.0584

R_m= Market rate of return = 26.6%= 0.266

Table 4.20
Required Rate of Return, Expected Rate of Return and Price Evaluation of stock.

Company	Beta	$R_j=R_f+(R_m-R_f)\beta_j$	Expected Rate of Return	Price Situation
NABIL	0.4649	0.2620	0.455	Under Priced
HBL	0.3102	0.2266	0.3043	Under Priced
NIB	0.4105	0.2703	0.3931	Under Priced
NCC	1.230	0.3629	0.4411	Under Priced

Here, price situation is under priced so all the shares are is highly demanded. If the shares were over priced so it will be risky and does not much prefer.

Testing of Hypothesis (H)

The hypothesis is based on the test of significance for single mean. Null Hypothesis (H_0): $X_n = \beta_m$ i.e. there is no significant difference between the portfolio beta of selected companies stocks and market beta.

Alternative Hypothesis; (H_1) : $X_n \neq \beta_m$ i.e. there is significant difference between the portfolio beta of selected companies stocks and market beta.

Under the Ho: The test statistics is

$$t = \frac{\overline{X_n} - B_m}{S/\sqrt{n}}$$

Where, Xn= Weight average of the beta of selected company's stock (weight is taken on the basis of market capitalization of the companies on 15th July 2009

And calculations are made on appendix AT-3. $X_n = 0.9804$

S= estimated population S.D. =0.575(From Appendix – AT 4)

H – number of sample=4

Hence

$$t = \frac{0.9804 - 1}{0.575 / \sqrt{4}} = -0.0682$$

Hence, $|t| = 0.682$

The tabulated value of t- statistics at (n-1 = 4-1) = 3 degree of freedom at 5% level of significance is 3.182.

Decision: Since the calculated value of t is less than the tabulated value at 5% degree of freedom. H_1 is accepted and H_0 is rejected. Hence there exist significant difference between the portfolio beta of stock of selected companies and that of market.

4.5 Portfolio analysis :

Portfolio theory proposed by Harry M. Markwoitz gives the concept of diversification of risk by investing total funds more than a single assets or single stock. In a very simple way, we can understand it as not keeping all eggs in a single basket. By diversifying total fund in different securities, the risk of individual security can be reduced without loosing considerable return. The main aim of portfolio is reduction of unsystematic risk, from which investors can take more benefit by making efficient portfolio.

The expected return of a portfolio is simply weighted average of the expected returns of the securities comparing that portfolio. The weights are equal to the proportion of total funds invested in each security.

"While the portfolio expected return is a straight forward weighted average of returns on the individual securities, the portfolio standard deviation is not the weighted average of individual security standard deviations would to ignore the relationship, or correlation between the returns of two securities, this correlation however has no effect on the portfolio's expected return. Correlation between securities returns complicates our calculations of portfolio standard deviation by forcing us to calculate the covariance between securities provides for the possibilities of eliminating some risk without reducing potential returns."

4.5.1 Analysis of risk diversification – some example

The analysis is based on two assets portfolio and the tools for analysis are presented in chapter 3 i.e. research methodology. Here the portfolio of the common stock of Nabil Bank Limited (NABIL) and Nepal Investment Bank (NIB) is made. Let return on CS of NABIL be A and that of NIB is B. Below is the table showing calculations.

Table 4.21
Covariance (R_A R_B) and weight (W) of NABIL (Stock A) and NIB (Stock B)

Fiscal Year	$R_A - \bar{R}_A$	$R_B - \bar{R}_B$	$(R_A - \bar{R}_A)(R_B - \bar{R}_B)$	Remarks
061/62	0.365	-0.5208	-0.1901	
062/63	-0.135	0.9731	-0.1314	
063/64	0.835	0.9795	0.8179	
064/65	-0.005	0.2538	-0.0013	

065/66	-0.303	-0.8184	0.2480	
066/67	-0.759	-0.8672	0.6582	
		$\Sigma(R_m - \overline{R}_m)(R_j - \overline{R}_j) = 1.4013$		

$$\text{Cov}(R_A\ R_B)= \frac{\sum\left(R_A - \overline{R}_A\right)\left(R_B - \overline{R}_B\right)}{n} = \frac{1.4013}{6} = 0.2336$$

For minimizing the risk the weight of stock A in the portfolio is given as

$$W_A= \frac{\sigma_B^2 - COV(R_A R_B)}{\sigma_A^2 + \sigma_B^2 - 2COV(R_A R_B)} = \frac{(0.4989)^2 - (0.2336)}{(0.4077)^2 + (0.4989)^2 - 2(0.2336)}$$

= -0.2937

And $W_B= 1-W_A= 1-(-0.2937)=1.2937$

As calculate above investors should diversify their fund -29.37% for Stock A i.e. Stock of NABIL and 129.37 % for Stock B i.e. Stock of NIB.

Hence the portfolio return is given as

$R_p= W_A R_A + W_B R_B =-0.2937\text{x}0.455+1.2937\text{x}0.3931$

Therefore, the return is 37.5%

And the portfolio risk is given as:

$$\sigma_p= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B COV(R_A R_B)}$$

$$= \sqrt{(-.2937)^2(.4077)^2 + (1.2937)^2(.4989)^2 + 2(-.2937)(1.2937)(0.2336)}$$

=0.6945

Therefore the risk is 69.45%

Correlation can be used whether the portfolio is beneficial or not. If the correlation is perfectly positive i.e. +1 then the portfolio can't reduce any level of risk. On the contrary if the correlation is perfectly negative i.e. -1 then the proper combination of the two securities can reduce systematic risk even to zero. So, the return of highly positive correlated securities is not beneficial and vice versa. Correlation of NABIL and NIB stock, the correlation is

$$r_{AB} = \frac{COV(R_A R_B)}{\sigma_A \sigma_B} = \frac{0.2336}{.4077x.4989} = 1.1485$$

Since the correlation is moreover positive the portfolio construction between these two securities will not be beneficial. This type of Combination cannot reduce the risk of investment

Next portfolio is between the common stock of Himalayan Bank Limited (HBL) and Nepal Credit and Commerce Bank (NCC).

Table 4.22
Covariance (R_A R_B) and weight (W) of HBL (Stock A) and NCC (Stock B)

Fiscal Year	R_A- $\overline{R}_A$	R_B- $\overline{R}_B$	(R_A- $\overline{R}_A$)(R_B- $\overline{R}_B$)	Remarks
062/63	0.0197	0.5943	0.0117	
063/64	0.7607	1.9206	1.461	
064/65	0.0107	0.0557	0.0006	
065/66	-0.1693	-0.7081	0.1199	
066/067	-0.6883	-0.6739	0.4638	
$\Sigma(R_m$- $\overline{R}_m)(R_j$- $\overline{R}_j)$ = 2.057				

$$\text{Cov}(R_A R_B) = \frac{\sum (R_A - \overline{R}_A)(R_B - \overline{R}_B)}{n} = \frac{2.057}{5} = 0.4114$$

For minimizing the risk the weight of stock A in the portfolio is given as

$$W_A = \frac{\sigma_B^2 - COV(R_A R_B)}{\sigma_A^2 + \sigma_B^2 - 2COV(R_A R_B)} = \frac{(1.0001)^2 - (0.4114)}{(0.1810)^2 + (1.0001)^2 - 2(0.4114)} = 0.3733$$

And $W_B = 1 - W_A = 1 - 0.3733 = 0.6267$

In case of HBL and NCC stock, the correlation is

$$r_{AB} = \frac{COV(R_A R_B)}{\sigma_A \sigma_B} = \frac{0.4114}{0.1810 x 1.0001} = 2.2729$$

Since the correlation is positive the portfolio construction between these two stocks will not be beneficial. In this combination risk can not be reduced.

4.5.2 Systematic and unsystematic risk

Systematic risk is the portion of the total risk of an individual security caused by market factor that simultaneously affect the price of all securities. It can't be diversified away. It is also called market risk or unavoidable risk or beta risk. Unsystematic risk is the portion of total risk that can be diversified away. It is called non-market risk or unavoidable risk or diversified risk.

Table No. 4.23
Calculation of Systematic and Unsystematic risk.

Company	Total Risk	Systematic Risk	Proportion	Unsystematic Risk	Proportion
NABIL	16.97	12.98	76.47	4.00	23.53
HBL	11.32	8.87	78.29	2.46	21.71
NIB	44.09	14.07	31.90	30.03	68.10
NCC	208.53	29.06	13.92	179.76	86.08

The systematic risk of NABIL, HBL, NIB, and NCC are 12.98, 8.87, 14.07and 29.06 and unsystematic risks of the companies are 4.00, 2.46, 30.03 and 179.76 respectively. This shows that NCC has the highest and HBL has the lowest systematic risk. HBL has the highest unsystematic risk and NCC has the lowest unsystematic risk.

The proportion of systematic risk of NABIL, HBL, NIB, and NCC are 76.47, 78.29, 31.90 and 13.92 and the proportion of unsystematic risks of the companies is 23.53, 21.71, 68.10 and 86.08 respectively. It indicates that HBL has the highest systematic risk and lowest unsystematic risk and NCC has the lowest systematic risk and highest unsystematic risk.

4.5.3. Simple Sharpe portfolio optimization.

Simple index model for optimal portfolio enable to find out the securities to be in optimal portfolios. In this case the desirability of including a stock directly related to its excess return to beta ratio. If stocks ranked by excess return to beta for highest to lowest the ranking represent the desirability of any stocks inclusion in a portfolio. The number of stocks selected depends on a unique cut off rate, such that all stocks with higher return to beta ratio will include and the entire sock with low ratio will exclude.

Table No. 4.24
Calculation of excess return to beta ratio:

Company	Mean return $\bar{R}_j$	Excess Return $\bar{R}_j$-R$_f$	Beta β	Unsystematic Risk σ_{ei}^2	Excess Return over Beta $\bar{R}_j$-R$_f$/β	Rank
NABIL	45.5	52.2600	0.4649	0.0400	112.41	1
HBL	30.43	34.6600	0.3102	0.0246	111.73	2
NIB	39.31	36.2100	0.4105	0.3003	88.21	3
NCC	44.11	33.9600	1.230	1.7976	27.61	4

Risk free rate of return is 5.84%

Table 4.24 shows that the entire betas are positive it denotes that all the securities is linear to market. If any security of beta is negative investors have to eliminate these securities from the investment alternatives. Since securities are ranked from highest excess return to beta to lowest, we know that if a particular security belongs in the optimal portfolio. The ranking represents the desirability of any securities inclusion on a portfolio. The number of securities selected depends on a unique cut off rate such that all securities with higher (R$_j$-R$_f$) will be included all securities with lower ratio excluded. The value of cut off rate (C$_j$) computed from risk and return characteristics of securities determines the security of optimum portfolio. After getting the C$_j$ value of all

securities, investors select highest C_j value that is C^*. Among all securities only those securities were selected having greater value than C^*.

$$\sigma_m{}^2 = 13.5\ \%$$

<div style="text-align:center">

Table 4.25
Calculation of C_j

</div>

Co.	Unsystematic Risk $\sigma_{ei}{}^2$	Beta	Excess Return over Beta	1 $(R_i-R_f)\beta_i)$ / $\sigma_{ei}{}^2$	2 $\beta_i{}^2/$ $\sigma_{ei}{}^2$	Cum 1	Cum 2	Cut off C^*	$Z = \dfrac{\beta}{\sigma_{ei}^2}\left(\dfrac{R_i - R_f}{\beta_i} - C^*\right)$
NABIL	0.0400	0.4649	53.299	1282.380	24.060	1282.380	24.060	**39.838**	330.326
HBL	0.0246	0.3102	42.774	1141.986	26.698	2424.366	50.758	**41.169**	52.888
NIB	0.3003	0.4105	35.479	123.073	3.469	2547.439	54.227	**40.853**	-18.264
NCC	1.7976	1.230	23.152	27.711	1.197	2575.150	55.424	**40.519**	-14.171

C^* is the highest Cj value (i.e.) 41.169 and respective HBL cut off rate is possible cut off Rates C^*. The find available is needed to invest in the stock of NABIL and HBL only.

$$\text{In this case, } C_i \ = \ \frac{\sigma_m{}^2 \sum_{i=1}^{i} \dfrac{(\overline{R}_i - R_f)\beta_i}{\sigma_{ei}^2}}{1 + \sigma_m{}^2 \sum_{i=1}^{i} \dfrac{\beta_i^2}{\sigma_{ei}^2}}$$

To construct the optimum portfolio the percentage invested for each security in the optimum portfolio is to be calculated. To find the weight of selected

securities in portfolio Z value is calculated. Weight is proportion of z value on the base of that z value of portfolio.

Table No. 4.26
Calculation of z value and weight.

Company	Z value	Weight
NABIL	330.326	0.86
HBL	52.888	0.14
Total	383.214	1.00

Optimum portfolio composition.

Optimum portfolio composition is shown by pie chart.

Figure 4.16
Optimum Portfolio composition.

Portfolio Composition

HBL 14.00%

NABIL 86.00%
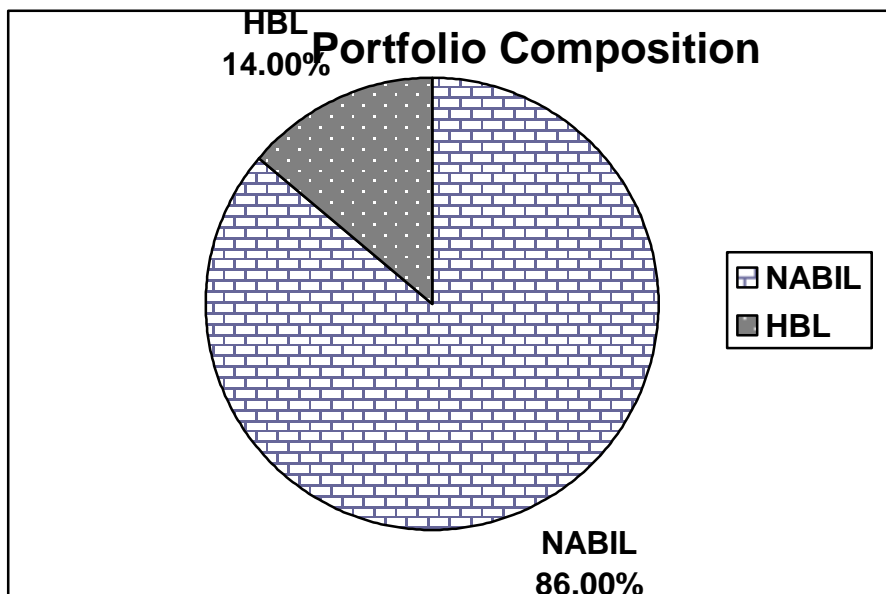
NABIL
HBL

Now expected return in the portfolio

Table 4.27
Expected return in Portfolio

SN	Company	Expected return (E)	% invested (W)	E×W
1	NABIL	58.1	0.86	50.08
2	HBL	40.56	0.14	5.60
				ΣEW=55.68

Here the cut off rate suggests to invest 86% fund available in the stock of NBIL and 14% in the stock of HBL so the portfolio combination will give the expected return of 55.68%.

4.6. Major findings of the study.

Finding of the study is brief in the following 3 parts.

4.6.1   Findings regarding the individual companies and their shares.

The movement of the price of NABIL is increasing till 064/65. Price is minimum in the year 059/60 and maximum in the year 064/65. The expected return is 58.1% and risk is 41.20%. The CV is 0.7091. The annual return is negative in the year 060/61 and 063/64 and maximum in the year 064/65. The Beta Coefficient of NIB is 0.9805.

The trend of annual price movement of the Share of HBL is as like as NABIL. It is increasing till 064/65 slightly decreased in 065/66. Share price is maximum in the year 064/65 and minimum in 060/61. The realized is

maximum in year 063/64. The expected return is 40.5% , Risk is 33.65% and CV is 0.83. The Beta is 0.8103.

The share price movement of NIB is increasing after 061/62 till 064/65 and decreased in 065/66. Price is minimum in the year 059/60 and maximum in the year 064/65. The realized return in the year 061/62 and 065/66 is negative and maximum in the year 062/63. The expected return is 42.05%, risk is 66.40% and CV is 1.58. Beta of NIB is 1.0206.

Annual share price movement of NCC was also decreased in 062/63, increased up to 064/65 and again decreased in 056/66. The maximum closing price is found in the year 064/65 and minimum in 062/63. The realized return in four year 064/65 and 065/66 is found negative and the maximum in the year 062/6364. The expected return is 39.80%, risk is 144.50% and CV is 3.63. The Beta is 1.4668.

4.6.2 Finding regarding the Industries.

The banking sector has the expected return of 32.3% standard deviation is 39.00% and CV is 1.2075.

Manufacturing and processing sector has the expected return of 11.5% risk is 8.82% and CV is 0.769.

The expected return of hotel industries is 16.80% with the risk of 25.00% and CV of 1.485.

Other sector has the Expected return of 50.1% risk is 66.7% and CV is 1.33.

Trading sector has the expected return of 26.3% risk is 15.6% and CV is 0.594.

Like wise Insurance sector bears the risk of 26.1% with standard deviation 32.10% and CV is 1.230.

Finance sector makes the expected return of 43.4% risk of 71.1% and CV of 1.638.

Finally Development Banks sector has the highest expected return of 47.00%, its risk is 70.20% and CV is 1.493.

4.6.3 Findings regarding the market:

One and only share market of Nepal is NEPSE so data analysis of NEPSE determined the expected return of 26.6% market risk is 36.75% and CV is 1.3821.

Among the selected companies NABIL has the largest market capitalization and NCC has the smallest market capitalization.

Sector wise grading of market capitalization shows that Commercial bank has the largest market capitalization of 58.919% and Trading sector has the lowest market capitalization around 0.331%.

The return of market was in decreasing trend till 060/61 and is moving vertically after the year. So, it reaches minimum in 060/61, maximum in 064/65 and again decreased in the year 065/66.

CHAPTER 5

SUMMARY,CONCLUSIONS AND RECOMMENDATION

5.1 Summary:

However, Nepalese capital market has a very long history it is not smoothly developed and grown. We have very small market, single stock exchange and limited investment opportunities. Main focus of this study is to analyze the risks and return of commercial banks listed in NEPSE index. Almost the investors are risk averters. Analyzing risk and return gives the idea to the investors for the proper investment of their fund to get maximum return bearing minimum risk.For the analysis, among listed company are taken into account. Among them 2 are joint venture commercial banks and 2 are non-joint venture commercial banks or said to be joint venture release commercial banks. The data necessary for analysis are secondary data and they are collected from NRB, NEPSE and different web sites related to the field of study. Telephone enquiry, personal interviews are also made for data collection. However the data from web of related companies are supposed to be authentic. Common equity shares dominate our capital market. There are bond, preferred stocks etc also available for investment but investors have been interested on common stock.Nepalese stock market is small and growing very slowly. Because of lack of information and knowledge of investment, investors are making investment blindly. Market is also not efficient.Because of limited industries, there is limitation for investment. People have no many alternatives for investment. Most of people think stock market is the best place for investment. Where there is more return. For the data analysis proper analytical tools are used. Financial as well as statistical tools are used properly in the needed places.As the market is analyzed, market capitalization as well as NEPSE index is heavily influenced by baking sector. Even in banking sector joint venture commercial banks have heavy influence on NEPSE.

5.2 Conclusions

Following conclusions from study has been drawn.

1. While considering the systematic (un-diversified) risk of commercial banks, HBL has the least systematic risk and NCC has the highest one among the selected banks.

2. When unsystematic (diversifiable) risk is considered it is be found that HBL has lowest risk and NCC has the highest one.

3. At the same time when total risk is considered, HBL is considered lowest risky and NCC has the highest risk.

4. Beta coefficient of NCC has the highest and HBL has the lowest. It shows HBL is least risky and NCC is top most one among the selected banks.

5. If relative risk measurement through coefficient variation is considered then, NCC has the highest per unit of risk as measured by coefficient of variation.

6. Looking at only return factors, average return of NABIL is the highest and that of NCC is the lowest rate of return.

7. According to CAPM approach, NCC has the highest required rate of return. And HBL has the lowest one. All the sampled banks are under priced. So it is concluded that it is advisable to purchase common stock of such companies by the investors.

8. The Sharpe's ratio suggests to invest in the common stocks of NABIL and HBL. That gives the good return.

9. From the study it is found that none of the banks share price is rightly determined as all the banks' average rate of return is more than the required rate of return for the investor. This brings the difference of market prices from the intrinsic value.

10. Financial statement review and friend advice are the main source of inspiration for the Nepalese investors to make their investment decision on common stocks of commercial bank in Nepal.

11. Though some of the investors tend to bear risk as being the risk seeker but the degree of risk consideration remain on average. Like wise most of the

investors also tend to avoid risk and value high to return as decisional factor. The degree of consideration on return is also on average.

12. Most of the investors conduct market analysis and financial analysis together. At the same time, a few investors conduct either of one analysis.

13. When investors conduct financial analysis, return factor and market price per share are the major inputs for further analysis.

14. When investors conduct market analysis, goodwill and image of the commercial bank as well as market performance are the major inputs for further analysis.

15. Most of the Nepalese investor is reported lack of adequate awareness on risk and return involved in share investment in commercial bank.

16. The average return of the market and the average return of common stock of selected companies is equal so return of the investment will not vary on selection..

17. The risk variable portfolio beta and market beta seems to be significant different so the risk can be diversified as per the company selection.

5.3 Recommendations

Above conclusions have prescribed following recommendations.

1. There is unrealistic relationship between required rate of return and expected rate of return of sampled banks' securities. Excess return of banks is more than 20 percent which may not be realistic. So, all the investors are recommended to conduct technical analysis as well as fundamental analysis to know the correct price of common stock. Technical analysis reveals stock's future performance based on the market price trend and investors' future expectation.

2. The common stock returns of commercial banks are highly sensitive to market. They are highly positively correlated to the market. So, market should be further analyzed by the investors to balance the risk and return properly.

3. Generally, it is believed that higher the return, higher will be the risk. Investment risks are better covered through a large and diversified portfolio. Diversifying an investment is a way of reducing the risk. Here, all the risky sampled banks are recommended to diversify their investment policy in less risky securities.

4. The result of correlation between risk and return is insignificant. The result is unsatisfactory because the sample size of the study is too small and the data for the study is used from annual report and website which may not be sufficient so it is suggested that for the further researcher will recommend including sufficient sample size.

5. If investor is risk averter, it is recommended him or her to invest in HBL and if investor is risk seeker, then suggested to invest in NCC.

6. The investment in the common stock of NABIL and HBL making portfolio is beneficial in term of risk and return.

7. Nepalese investors are requested to develop an appropriate basis for their investment on common stock as per the requirement. They are recommended to invest their fund by performing multiple analysis.

8. As risk and return are positively correlated they are requested to assess these factors as a important and recommended to analyze these factors with different financial tools and techniques.

9. All investors are recommended to put adequate consideration on risk and return factors while making investment on common stocks of commercial banks. They are requested to follow not only a few factors like market price per share, goodwill and image of commercial banks, dividend policy and market rumor etc.

REFERENCES

Allmon, D. E., Chen, H. C. K., Pritchett, T. K., & Forrest, P. (1997). A multicultural examination of business ethics perceptions. *Journal of Business Ethics, 16*(2), *1*83–188.

Boatright, J. R. (2006). *Ethics and the Conduct of Business*. New Delhi, India: Dorling Kindersley (India) Pvt. Ltd.

Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons, 34*(4), 39–48.

Shrestha, B. G. (2011). *Prospective Posture of Corporate Social Responsibility in Nepal* (Unpublished M. Phil. Thesis). Faculty of Management, Tribhuvan University, Nepal.

Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods.* New Delhi, India: Tata McGraw-Hill Publishing Company Limited.

Friedman, M. (1962). *Capitalism and Freedom.* Chicago, USA: The University of Chicago Press.

Pant, P. R. (2009). *Social Science Research and Thesis Writing.* Kathmandu, Nepal: Buddha Academic Enterprises Pvt. Ltd.

Porter, M. E., & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review, 84*(12), 78–92.

Bibliography

Akhigbe and Whytr, (2004) *The Gram-Leach-Billey Act of 1999*: Risk implications for the financial service industry have focused on rish implication of banking and private sectors.

Bhalla, V.K. (2004) *Investment Management, Security Analysis and Portfolio management* 9th Edition S,Chanda and Co. Ltd New Delhi.

Bradford, F.A. (2005) *Money and Banking* New York: Longman.

Brealey, R. and Myers, S. (2008) *Principal of Corporate finance* McGraw Hill Book company New work.

Chandra, P. (2004) *Financial Management Theory and Practices* New Delhi: Tata McGraw Hill.

Franscis, J.C. (2008) *Investment Analysis and Management* New Delhi: Tata McGraw Hill Inc.

Gurung, D.B. (2000) *Risk and Return Analysis of listed companies in Nepal* (unpublished Master Degree's Thesis). Patan Multiple College, Lalitpur.

Joshi, R.L. (2004) *Risk and Return on common stock of fine listed Commercial Bank* (unpublished Master Degree's Thesis). Shanker Dev Campus, Kathmandu.

Kothari, CR. (2004) *Research Methodology* New Delhi: Wiswa Prakashan.

Karmacharya, M.N. (2009) *The cross correlation in stock return of South Asian Stock Market, their regional integration and interdepent on global stock market.*

Karmacharya, M.N. (2010) *Investigate the Asymmetric nature of US stock market return, hetroskedasticity effect on stock return volatility and the relationship between stock returns and conditional volatility and standard residuals.*

Khadka, J.P. (2005) *Analysis of Risk and Return on selected Nepalese commercial bank Listed in NEPSE* (unpublished Master's Degree Thesis). Central Department of Management TU.

Mishra S.K. (2001) *Risk & Return on common stock Investment* (unpublished Master's Degree Thesis). Central Department of Management TU.

Lawrence, J. G. (2007) *Principal of managerial finance*." Singapore. Addison Wesley Longman.

Pradhan, R.S. (2005) Stock Market Behavior in Small Capital Market Case of Nepal *The Nepalese Management Review,* Vol. XI.

Pandey, S.P. (2000) *Risk & Return analysis of common stock Investment* (unpublished Master's Degree Thesis). Central Department of Management TU.

Pandey, H.R. (2000) *Risk & Return analysis of common stock Investment* (unpublished Master's Degree Thesis). Central Department of Management TU.

Pagano's (2001) *Finance Intermediation of Comperate Risk Management Influence Bank Risk Taking Behavior.*

Ross, S.A., Randolph, W and Jordon, B.D. (2008) *Fundamental of corporate finance* Richard D Lrwin, Boston.

Rouwenhorst, K.G. (1999). *Local Return Factors and Turnover in Emerging Market* The Journal of Finance Aug.

Sayers, R.S. (2002). *Modern Banking* India. Oxford Cleored Press.

Sharpe, W.F.A., Gorden J and Bailly, J.V. (1998). *Investment* 6th edition, USA Prentice Hall

Shah, S.K. (2006) *Risk and Return Analysis of Listed Companies in Nepal* (unpublished Master's Degree Thesis). Central Department of Management TU.

Shrestha, M.K (1992) *Shareholders Democracy and AGM feedback* Portfolio Analysis Nepal Publication, Kathmandu.

Shrestha M.P. (2003) *Risk and Return Analysis of Listed Companies in Nepal* (unpublished Master's Degree Thesis). Central Department of Management TU.

Shrestha, S and Silwal, D.P. (2009) *Statistical Methods in Management* 4nd Edition Taleju Prakhsasn Kathmandu.

Security Board Nepal (2008) *Annual Report 2007/2008*

Security Board Nepal (2009) *Annual Report 2008/2009*

Tamang, Y.B. (2003) *Risk and Return Analysis of Commercial Bank in Nepal* (unpublished Master's Degree Thesis). Central Department of Management TU.

Upadhyaya, K.K. (2001) *Risk and Return on common stock Investment of commercial Bank in Nepal* (unpublished Master's Degree Thesis). Central Department of Management TU.

Van Horne, J.C. and Wachowicz, J.M. (2007) *Fundamental of Financial Management* 7th Edition st paul: West Publishing Company.

Weston, J.F. and Thomas, H.C. (2007) *Managerial Finance* 11th Edition. Dryden Press, New Work.

Websites:

www.nepalstock.com

www.nrb.org.np

www.sebon.gov.np

www.nibil.com.np

Appendices

AT 1a

Calculation of Realized rate of return (R) Expected rate of return ($\bar{R}$) Standard deviation (σ) and coefficient of variation (CV) of Manufacturing and Processing industry.

Fiscal Year	Average Price	$R=\dfrac{P_1-P_0}{P_0}$	R-$\bar{R}$	(R-$\bar{R}$)²	Remarks
060/61	255.58				
061/62	291.68	0.141	0.016	0.0003	
062/63	297.46	0.020	-0.105	0.0110	
063/64	348.63	0.172	0.047	0.0022	
064/65	423.66	0.215	0.090	0.0081	
065/66	434.32	0.025	-0.100	0.0100	
066/67	512.23	0.179	0.054	0.0029	
		Σ R=0.752		Σ (R-$\bar{R}$)²=0.0345	

$$\text{Expected Return} = (\overline{R}) = \frac{\sum R}{n} = \frac{0.752}{6} = 0.125$$

$$\text{Standard Deviation} = (\sigma) = \sqrt{\frac{\sum (R - \overline{R})^2}{n-1}} = \sqrt{\frac{0.0345}{6-1}} = 0.083$$

$$\text{Co-efficient of Variation (CV)} = \frac{\sigma}{R_s} = \frac{0.083}{0.125} = 0.665$$

AT 1b

Calculation of Realized rate of return (R) Expected rate of return ($\bar{R}$) Standard deviation (σ) and coefficient of variation (CV) of Hotel industry.

Fiscal Year	Average Price	$R=\dfrac{P_1-P_0}{P_0}$	R-$\bar{R}$	(R-$\bar{R}$)²	Remarks
060/61	184.41				
061/62	180.11	-0.023	-0.188	0.035	
062/63	178.84	-0.007	-0.172	0.029	
063/64	251.47	0.406	0.241	0.058	
064/65	370.88	0.475	0.310	0.096	
065/66	367.42	-0.009	-0.174	0.030	
066/67	422.53	0.149	-0.016	0.001	
		Σ R=0.991		Σ (R-$\bar{R}$)²=0.249	

Expected Return = ($\bar{R}$) = $\dfrac{\sum R}{n} = \dfrac{0.991}{6} = 0.165$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{0.249}{6-1}} = 0.223$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.223}{0.165} = 1.351$

AT 1c

Calculation of Realized rate of return (R) Expected rate of return ($\bar{R}$) Standard deviation (σ) and coefficient of variation (CV) of other industry.

Fiscal Year	Average Price	$R=\dfrac{P_1-P_0}{P_0}$	R-$\bar{R}$	(R-$\bar{R}$)²	Remarks
060/61	142.65				
061/62	335.09	1.349	0.917	0.841	
062/63	392.08	0.170	-0.262	0.069	
063/64	818.12	1.087	0.655	0.429	
064/65	768.26	-0.061	-0.493	0..243	
065/66	738.99	-0.038	-0.470	0.221	
066/67	802.54	0.086	-0.346	0.120	
		Σ R=2.593		Σ (R-$\bar{R}$)²=1.923	

Expected Return = $(\bar{R}) = \dfrac{\sum R}{n} = \dfrac{2.593}{6} = 0.432$

Standard Deviation= $(\sigma) = \sqrt{\dfrac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{1.923}{6-1}} = 0.620$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.620}{0.432} = 1.435$

AT 1d

Calculation of Realized rate of return (R) Expected rate of return ($\bar{R}$) Standard deviation (σ) and coefficient of variation (CV) of Trading industry.

Fiscal Year	Average Price	$R=\dfrac{P_1-P_0}{P_0}$	R-$\bar{R}$	(R-$\bar{R}$)²	Remarks
060/61	95.01				
061/62	126.91	0.336	0.113	0.013	
062/63	148.11	0.167	-0.056	0.003	
063/64	155.37	0.049	-0.174	0.030	
064/65	204.08	0.314	0.091	0.008	
065/66	295.83	0.450	0.227	0.051	
066/67	309.09	0.025	-0.198	0.039	
		Σ R=1.340		Σ (R-$\bar{R}$)²=0.144	

Expected Return = ($\bar{R}$) = $\dfrac{\sum R}{n} = \dfrac{1.340}{6} = 0.223$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum(R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{0.144}{6-1}} = 0.170$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.170}{0.223} = 0.762$

AT 1e

Calculation of Realized rate of return (R) Expected rate of return ($\bar{R}$) Standard deviation (σ) and coefficient of variation (CV) of Insurance industry.

Fiscal Year	Average Price	$R = \dfrac{P_1 - P_0}{P_0}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remarks
060/61	237.62				
061/62	321.38	0.352	0.121	0.015	
062/63	365.37	0.137	-0.094	0.009	
063/64	612.46	0.676	0.445	0.198	
064/65	817.25	0.334	0.103	0.011	
065/66	656.41	-0.197	-0.428	0.183	
066/67	712.62	0.086	-0.145	0.021	
		$\Sigma R = 1.388$		$\Sigma (R - \bar{R})^2 = 0.437$	

Expected Return = $(\bar{R}) = \dfrac{\sum R}{n} = \dfrac{1.388}{6} = 0.231$

Standard Deviation = $(\sigma) = \sqrt{\dfrac{\sum (R - \bar{R})^2}{n-1}} = \sqrt{\dfrac{0.437}{6-1}} = 0.296$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.296}{0.231} = 1.280$

AT 1f

Calculation of Realized rate of return (R) Expected rate of return ($\overline{R}$) Standard deviation (σ) and coefficient of variation (CV) of Finance industry.

Fiscal Year	Average Price	$R=\dfrac{P_1 - P_0}{P_0}$	R-$\overline{R}$	(R-$\overline{R}$)²	Remarks
060/61	195.99				
061/62	229.69	0.172	-0.161	0.026	
062/63	258.46	0.125	-0.208	0.043	
063/64	471.82	0.826	0.493	0.243	
064/65	1152.7	1.443	1.110	1.232	
065/66	697.61	-0.395	-0.728	0.530	
066/67	575.25	-0.175	-0.508	0.258	
		Σ R=1.996		Σ (R-$\overline{R}$)²=2.332	

Expected Return = ($\overline{R}$) = $\dfrac{\sum R}{n} = \dfrac{1.996}{6} = 0.333$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum (R-\overline{R})^2}{n-1}} = \sqrt{\dfrac{2.332}{6-1}} = 0.683$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.683}{0.333} = 2.051$

AT 1g

Calculation of Realized rate of return (R) Expected rate of return ($\bar{R}$) Standard deviation (σ) and coefficient of variation (CV) of Development banks.

Fiscal Year	Average Price	$R=\dfrac{P_1 - P_0}{P_0}$	$R-\bar{R}$	$(R-\bar{R})^2$	Remarks
060/61	190.03				
061/62	226.11	0.190	-0.155	0.024	
062/63	275.25	0.217	-0.128	0.016	
063/64	539.66	0.961	0.616	0.379	
064/65	1285.9	1.383	1.038	0.833	
065/66	772.56	-0.399	-0.054	0.003	
066/67	554.65	-0.282	-0.063	0.004	
		Σ R=2.069		$\Sigma (R-\bar{R})^2$=1.259	

Expected Return = ($\bar{R}$) = $\dfrac{\sum R}{n} = \dfrac{2.069}{6} = 0.345$

Standard Deviation= (σ) = $\sqrt{\dfrac{\sum (R-\bar{R})^2}{n-1}} = \sqrt{\dfrac{1.259}{6-1}} = 0.502$

Co-efficient of Variation (CV) = $\dfrac{\sigma}{R_s} = \dfrac{0.502}{0.345} = 1.455$

AT 2

Calculation of Beta coefficients of selected companies:

AT 2a

Calculation of beta coefficient of the CS of Himalayan Bank Limited (HBL)

Fiscal Year	$R_j - \bar{R}_j$	$R_m - \bar{R}_m$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$	Remarks
060/61	-	-	-	$(R_m - \bar{R}_m)$ from table 4.16 and $(R_j - \bar{R}_j)$ from table 4.4
061/62	0.068	-0.286	-0.0194	
062/63	0.020	0.085	0.0017	
063/64	0.761	-0.026	-0.0198	
064/65	0.011	0.572	0.0063	
065/66	-0.169	0.143	-0.0242	
066/67	-0.688	-0.488	0.3357	
			$\Sigma(R_m - \bar{R}_m)(R_j - \bar{R}_j) = 0.2803$	

$$\text{Cov(R}_j\text{R}_m) = \frac{\sum \left(R_j - \bar{R}_j \right)\left(R_m - \bar{R}_m \right)}{n} = \frac{0.2803}{6} = 0.0467$$

$$\beta_j = \frac{COV(R_j R_m)}{\sigma_m^2} = \frac{0.0467}{0.1351} = 0.3457$$

where, n = number of observation

σ_m^2 = variance of market return

R_j = Return of stock j (i.e. HBL)

AT 2b

Calculation of beta coefficient of the CS of National Finance Company (NIB)

Fiscal Year	$R_j - \bar{R}_j$	$R_m - \bar{R}_m$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$	Remarks
060/61	-	-	-	$(R_m - \bar{R}_m)$ from table 4.16 and $(R_j - \bar{R}_j)$ from table 4.6
061/62	-0.521	-0.286	0.1490	
062/63	0.973	0.085	0.0827	
063/64	0.979	-0.026	-0.0254	
064/65	0.254	0.572	0.1453	
065/66	-0.818	0.143	-0.1169	
066/67	-0.867	-0.488	0.4230	
			$\Sigma(R_m - \bar{R}_m)(R_j - \bar{R}_j) = 0.6577$	

$$\text{Cov}(R_jR_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n} = \frac{0.6577}{6} = 0.1096$$

$$\beta_j = \frac{COV(R_jR_m)}{\sigma_m^2} = \frac{0.1096}{0.1351} = 0.8112$$

where, n = number of observation

σ_m^2 = variance of market return

R_j = Return of stock j (i.e. NIB)

AT 2c

Calculation of beta coefficient of the CS of Nepal Finance and Saving company (NCC)

Fiscal Year	$R_j\text{-}\bar{R}_j$	$R_m\text{-}\bar{R}_m$	$(R_m\text{-}\bar{R}_m)(R_j\text{-}\bar{R}_j)$	Remarks
062/63	-0.594	0.085	-0.0505	$(R_m\text{-}\bar{R}_m)$ from table 4.16 and $(R_j\text{-}\bar{R}_j)$ from table 4.8
063/64	1.921	-0.026	-0.0499	
064/65	0.056	0.572	0.0320	
065/66	-0.708	0.143	-0.1012	
066/67	-0.374	-0.488	0.1825	
			$\Sigma(R_m\text{-}\bar{R}_m)(R_j\text{-}\bar{R}_j) = 0.0129$	

$$\text{Cov}(R_jR_m) = \frac{\sum\left(R_j - \bar{R}_j\right)\left(R_m - \bar{R}_m\right)}{n} = \frac{0.0129}{5} = 0.0026$$

$$\beta_j = \frac{COV(R_jR_m)}{\sigma_m^2} = \frac{0.0026}{0.1351} = 0.0192$$

where, n = number of observation

σ_m^2 = variance of market return

R_j = Return of stock j (i.e. NCC)

AT 3

Calculation of weighted beta of selected companies

Company	Beta (β_j)	Market capitalization in mil. (Rs.)	Weight (W_i)	$\beta_j \times W_j$	remark
NABIL	0.1809	47312	0.4430	0.0801	
HBL	0.0467	21405	0.2004	0.0094	
NIB	0.8112	33410	0.3129	0.2538	
NCC	0.0192	4659	0.0436	0.0008	
	Total = 106786		$\Sigma\beta_j \times W_j$ =.3441		

Weighted average Beta $\Sigma\beta_j \times W_j$ =0.3441

Hence, the weighted average beta of the shares of the selected companies = 0.3441

AT 4

Calculate of estimation population S.D. (S) of Beta.

Company	Beta (β_j)	$(\beta_j - \overline{\beta_j})$	$(\beta_j - \overline{\beta_j})^2$	remark
NABIL	0.0801	-0.2640	0..0697	
HBL	0.0094	-0.3347	0.1120	
NIB	0.2538	-0.0903	0.0081	
NCC	0.0008	-0.3433	0.1178	
			$\Sigma(\beta_j - \overline{\beta_j})^2 = 0.3076$	

Variance of Beta $(S)^2 = \dfrac{\sum \left(\beta_j - \overline{\beta_j}\right)^2}{n} = \dfrac{0.3076}{4} = 0.0769$

Estimated variance of the population $= S^2 = \dfrac{n}{n-1} s^2$

$= \dfrac{4}{4-1} \times 0.0769 = 0.1025$

Hence, $S^2 = 0.1025$

$S = \sqrt{0.1025} = 0.3201$

AT 4

Calculation of systematic and unsystematic Risk

1) Nabil Bank Limited (NABIL)

Unsystematic Risk $(\sigma_{ei}^2) = \sigma_i^2 - \beta_i^2 \, \sigma_m^2$
$$= (0.4077)^2 - (0.1809)^2 \times (0.3675)^2$$
$$= 0.1618$$

Systematic Risk $= \beta_i^2 \, \sigma_m^2$
$$= (0.1809)^2 \times 0.1351$$
$$= 0.0044$$

Portion of Systematic Risk $= \dfrac{systematic \quad risk}{total \quad risk}$

$$= \dfrac{0.0044}{0.1662} = 0.0265 = 2.65\%$$

Proportion of Unsystematic Risk $= \dfrac{Unsystematic \quad risk}{total \quad risk}$

$$= \dfrac{0.1618}{0.1662} = 0.9735 = 97.35\%$$

2) Himalayan Bank Limited (HBL)

Unsystematic Risk $(\sigma_{ei}^2) \quad = \sigma_i^2 - \beta_i^2 \, \sigma_m^2$
$$= (0.1810)^2 - (0.0467)^2 \times 0.1351$$
$$= 0.0325$$

Systematic Risk $= \beta_i^2 \, \sigma_m^2$
$$= (0.0467)^2 \times 0.1351$$
$$= 0.0003$$

Portion of Systematic Risk $= \dfrac{systematic \quad risk}{total \quad risk}$

$$= \dfrac{0.0003}{0.0328} = 0.0092 = 0.92\%$$

Proportion of Unsystematic Risk $= \dfrac{Unsystematic \quad risk}{total \quad risk}$

$$= \dfrac{0.0325}{0.0328} = 0.9908 = 99.08\%$$

3) Nepal Investment Bank (NIB)

Unsystematic Risk $(\sigma_{ei}{}^2) = \sigma_i{}^2 - \beta_i{}^2 \sigma_m{}^2$
$$= (0.4989)^2 - (0.8112)^2 \times 0.1351$$
$$= 0.1600$$

Systematic Risk $= \beta_i{}^2 \sigma_m{}^2$
$$= (0.8112)^2 \times 0.1351$$
$$= 0.0889$$

Portion of Systematic Risk $= \dfrac{systematic \quad risk}{total \quad risk}$

$$= \dfrac{0.0889}{0.2489} = 0.3572 = 35.72\%$$

Proportion of Unsystematic Risk $= \dfrac{Unsystematic \quad risk}{total \quad risk}$

$$= \dfrac{0.1600}{0.2489} = 0.6428 = 64.28\%$$

4) Nepal Credit and Commerce Bank (NCC)

Unsystematic Risk $(\sigma_{ei}{}^2) = \sigma_i{}^2 - \beta_i{}^2 \sigma_m{}^2$
$$= (1.0001)^2 - (0.0192)^2 \times 0.1351$$
$$= 1.0001$$

Systematic Risk $= \beta_i{}^2 \sigma_m{}^2$
$$= (0.0192)^2 \times 0.1351$$
$$= 0.0001$$

Portion of Systematic Risk $= \dfrac{systematic \quad risk}{total \quad risk}$

$$= \dfrac{0.0001}{1.0002} = 0.0001 = 0.010\%$$

Proportion of Unsystematic Risk $= \dfrac{Unsystematic \quad risk}{total \quad risk}$

$$= \dfrac{1.0001}{1.0002} = 0.9999 = 99.99\%$$

**A Survey on the risk and return on common stock from the investors'
perspective**

Dear respondents,

          I am collecting the data concerned with risk and return on
common stock from the investors' perspective for the project work in partial
fulfillment of the requirements for the degree of MBS and it would be grant value of
your help in this project work, if you help by filling up the following questionnaires.

Name (optional); ………………………………
Position: …………………………..
Experience: ……… years.
Institution: ……………………………….
Address: ……………………….

1. Have you invested in the common stock of commercial banks in Nepal? (Tick one)
          a. Yes   b. No
2. On what basis, you have made investment on common stocks of commercial
banks? (Tick one)
a. Friends advice   ( )
b. Market survey   ( )
c. Financial statement review   ( )
d. Whim and rumor   ( )

3. What kind of investor are you?
a. Risk seeker   ( )
b. Risk averter   ( )
c. Neither risk seeker nor risk averter   ( )
d. Don't know   ( )

4. Do you consider return on common stocks of commercial banks while making
investment? (Tick one)
a. Yes   b. No   c. Don't know

5. To what extent do you consider the return involved in investing on common stocks
of commercial banks? Please indicate on the following scale:

6. Do you consider risk on common stock of commercial banks while making
investment? (Tick one)
a. Yes   b. No   c. Don't know

7. To what extent do you consider the risk involved in investing on common stocks of
commercial banks? Please indicate on the following scale:
a. High   b. Medium   c. Low

8.What kind of analysis do you conduct for your investment decision? (Tick one)
a. Financial analysis   b. Market analysis   c. Both

9. If you conduct financial analysis which of following factors do you prioritize?
(Rank the following factor according to priority given) I for high priority ….. IV for low priority.
a. Return factor   (   )
b. Risk factor   (   )
c. Dividend policy   (   )
d. Market price per share   (   )

10. If you conduct market analysis which of following factors do you prioritize?
(Rank the following factor according to priority given) I for high priority……. IV for low priority.
a. Market rumor   (   )
b. Future expectation   (   )
c. Goodwill and image of the commercial bank (   )
d. Share market performance   (   )

11. Do you think that Nepalese investors are aware adequately about the risk and return factors? (Tick one)
a. Yes   b. No   c. Don't know

Thank you

Appendix 12

RESPONSE OBTAINED ON QUESTION NO.2

Options offered	Response obtained	Share on total response
Friends advice	16	26.67%
Market survey	12	20%
Financial statement review	18	30%
Whim and rumor	14	23.33%
Total	60	100%

RESPONSE OBTAINED ON QUESTION NO.3

Options offered	Response obtained	Share on total response
Risk seeker	18	30%
Risk averter	16	26.67%
Neither risk seeker nor risk averter	14	23.33%
Don't know	12	20%
Total	60	100%

RESPONSE OBTAINED ON QUESTION NO.4

Options offered	Response obtained	Share on total response
Yes	44	73.33%
No	14	23.33%
Don't know	2	3.34%
Total	60	100%

RESPONSE OBTAINED ON QUESTION NO.5

Options offered	Response obtained	Share on total response
High	16	36.36%
Medium	22	50%
Low	6	13.64%
Total	44	100%

RESPONSE OBTAINED ON QUESTION NO.6

Options offered	Response obtained	Share on total response
Yes	40	66.67%
No	14	23.33%
Don't know	6	10%
Total	60	100%

RESPONSE OBTAINED ON QUESTION NO.7

Options offered	Response obtained	Share on total response
High	16	33.34%
Medium	22	45.83%
Low	10	20.83%
Total	48	100%

RESPONSE OBTAINED ON QUESTION NO.8

Options offered	Response obtained	Share on total response
Financial analysis	16	26.67%
Market analysis	18	30%
Both	26	43.33%
Total	60	100%

RESPONSE OBTAINED ON QUESTION NO.9

Research variable	Ranking			
	I	II	III	IV
Return factor	22	10	6	
Risk factor	16	17	4	12
Dividend policy		6	10	18
Market price per share	12	19	11	10

RESPONSE OBTAINED ON QUESTION NO.10

Research variable	Ranking			
	I	II	III	IV
Market rumor	12	4	8	24
Future expectation	8	16	20	8
Goodwill and image of the Commercial bank	16	8	12	8
Share market performance	12	18	4	4

RESPONSE OBTAINED ON QUESTION NO.11

Options offered	Response obtained	Share on total response
Yes	18	30%
No	30	50%
Don't know	12	20%
Total	60	100%