CHAPTER - I
INTRODUCTION

1.1 Background of the Study

The present world has become a global village. The rapid globalization of economy and market has changed the economy and market more competitive and complicated. The trend of changing market, economy and investment effect the thought of investors, individuals firm. |So, a healthy economy is dependent on efficient transfer of funds from people who are net savers to firm and individuals who need capital.

Development in the financial term is the efficient flow and generation of the funds in the most productive sectors. The nation which wants to have effective fund collection from books and corners of the country and arrange to invest in the productive areas is the economic tycoon at the present scenario. European and American economies are the best examples for this argument. Besides it, security against risk is also vital concern while making investment. Thus the very basic and important elements for an investment are funds as well as security.

Development of any country cannot be imagined without the development of economy. As the world's economy is slowly shifted its dependency from traditional agriculture upon industrial development, Nepal is also in move make industrial development in the country. Due to this, different industries are coming in the Nepalese market. Funds are requires for the operation of the business. So concept of the capital market is developing in Nepal.

Funds can be collected through the several ways like issue of debenture, shares and plugging back of profits, but the equity capital i.e. share capital is the foremost

taken as the primary source of the funds for the organization. Financial sectors play crucial role in the development of the country. They collect the immobilized funds from the market and invest them into productive sectors. Nowadays, people are more attracted in investing their funds in shares rather than in any other investments. For the organized trading of the shares, securities market plays a crucial role for gathering the unused small savings from the public and investing them to the productive sectors.

It has been fully established that economic development of any country can be active only through a balance growth in the fields of industry, trade, commerce and agriculture. It has equally self-evident that development in these fields cannot be made possible without the existence of a sound and effective capital market in the country. Capital market investment in this present context plays the major role in the economic development of the any country. For the development of economy, adequate amount of capital must be invested and mobilized into the productive sectors like trade and industries. In order to boost up the economy of any country, it is extremely essential to have a mechanism through which small amounts of savings can be collected and transferred into efficient uses. Hence the securities market plays such roles and thus contributes to the nation's economic development.

The smooth continuity of development activities widely depends on the adequate supply of medium as well as long-term capital funds in productive investment projects, which is concerned with finance. The finance is directly concerned with conversion or accumulation of capital funds to meet the financial needs of various institutions. For the efficient mobilization of financial resources, the financial market has an intermediary role to bring funds from surplus units to deficit units. "Financial markets provide a forum in which suppliers and demanders of funds can transact business funds directly. Financial market constitute money market

and capital market. The money market is created by a financial relationship between suppliers and demanders of short-term funds, which have maturity of one year or less. Most of the money market transactions are made in marketable securities, which are short-term debt instruments, such as Treasury bills, commercial papers and negotiable certificates of deposits issued by government, business, and financial institutions. The money market exists because certain individuals, business government and financial institutions have temporary idle funds that they wish to place in some type of liquid assets or short-term interest bearing instrument. At the same time, other individuals, businesses, government and financial institutions find themselves in need of seasonal or temporary financing. The money market thus brings together the suppliers and demanders of short-term liquid funds" *(Gitman, 1988:0-31).*

As the Nepalese economy is in developing phase, so in order to speed up this pace of development, financial sectors have crucial roles, as they can pool scattered savings for capital formation. The public investors are interested to invest their savings in the common stock of the financial institutions. As a result, such institution's shares are being traded among the investors in the secondary market in larger volume every day. In Nepal, Nepal Stock Exchange (NEPSE) is the only one secondary market for trading of shares of the companies. As a recent days in NEPSE the trading of shares is increasing day by day and the prices are also fixed in the floor each and every day. The prices of shares of the listed companies have been affected on everyday as major or minor. The basis of change in price of shares could be the financial position of the company and other signaling effect due to the major events occurred in the country.

Capital market facilitates the allocation of funds between saver and borrowers. The allocation will be optimum if the capital market has efficient pricing mechanism. If the capital market is efficient then current share prices of

companies fully reflect available information and there is no question of share being under prices or overpriced. Capital market is mainly concerned with those private saving, individuals as well as corporate, those are turned into investments through new capital issues and also new public loans floated by government and semi government bodies. In the capital market demand comes from agriculture, industry, trade and government while supply comes from the individual or corporate savings institutional investors and surplus of governments. The saving institutions like banks, investment companies, specialized financial corporations and stock exchanges are some of the important constituents of capital market.

Nepal aspires for a rapid economic growth that needs additional capital formation and investment. An efficient capital market is an essential pre-requisite of economic development and the development of capital market in an economy is dependent upon the availability of savings, proper organization of intermediary institutions to bring the investors and business ability together for mutual interest, regulation of investment etc.

Capital market plays a vital role in the national economy. It mobilizes savings from surplus units and organized the funds for the productive investment. It renders very valuable services to the community by increasing the productive capacity of the country and thereby accelerating the pace of economic development. In short, the growth of economy is tied with the growth of capital market in the country. The capital market facilities the allocation of funds between savers and borrowers. This allocation will be optimum if the capital market has efficient pricing mechanism. If the capital market is efficient, the current share prices of companies fully reflect available information and there is no question of share price being underpriced and overpriced. The phenomenon of under or over valuation of shares is possible only is an efficient market. “Capital markets are the exchange systems designed to transfer ownership of long-term (over one year)

debt and equity securities, corporate bonds, treasury bonds and common stock" *(Edmister, 1990:4).*

The capital market in Nepal has been passing through a transitory phase over past few decades. Only after the inception of democracy in the country, a network of financial institutions was created through legislative measure to induce the growth of capital market. Securities Board (SEBO) and Nepal Stock Exchange (NEPSE) are the main bodies to make the stock market as competent and efficient as possible. Actual efforts have been made to develop the Nepalese stock market with the promulgation of securities Transaction Act in 1983, which was subjected to frequent amendments. Nepal Stock Exchange Limited is the only organized stock market facilitation the trading of corporate securities, mainly common stocks.

Securities Board, Nepal was established in May 26, 1993 A.D. under the provision of Securities Exchange Act 1983 A.D. (first amendment). Since its establishment, SEBO/N has been concentrating its effort to improve the legal and statutory framework, which one the bans for the healthy development of capital market. As a part of its continuous effort to build a sound system, the Securities Exchange Act 1983 was amended for the second time on January 30 1997 A.D. This amendment paved the way for establishing SEBON as an apex regulatory body as it livened the horizon of SEBON by bringing market intermediaries directly under its jurisdiction and also made it a mandatory for the corporate bodies to report to SEBON annually and semiannually. Although the second amendment in the Act established to make direct relationship of SEBON with market intermediaries and the listed companies, supremacy in its jurisdiction is yet to be established and clearly recognized.

NEPSE is a nonprofit organization, is operated under securities exchange act, 1983. The basic objectives of NEPSE is to impart free marketability and liquidity to the Government bonds and corporate securities by facilitating transactions in its trading floor through financial intermediaries such as broker, market maker etc. NEPSE appointed eleven issue managers and twenty-seven brokers to avail the daily transaction of buying and selling of securities under its restructure program in 1993 (2050 BS). NEPSE opened its trading floor on 13th January 1994 for its newly appointed brokers and market makers. NEPSE has adopted and "Open Cut-Cry" system. It means transactions of securities are conducted on the open auction principle on the trading floor. The buying broker with the highest bid will post the price and his code number on the selling column on the quotation board. The market makers quote their bid and offer price on their own board before the floor starts. Once the bid and offer price match, contacts between the buying and selling brokers and market makers are concluded on the floor.

NEPSE is the stock exchange in the country owned by the government (58.67%), Nepal Rastra Bank (34.60%), Nepal Industrial Development Corporation (6.13%) and the Security businesspersons (0.60%). [Annual Report SEBO, 2010 (2058/59): p 4] The securities businesspersons such as stockbrokers, market makers and securities dealers registered with SEBO have to get membership of the stock exchange for conducting security business. Similarly, the managers who are engaged in the primary issuing activities also have to get membership of the stock exchange to conduct business. According to The Securities Bylaws, 1996 and the membership of The Stock Exchange and Transactions Bylaws, 1998, it is mandatory for the issuing companies to have their securities listed in the stock exchange within three months of the closure of offering. The stock exchange provides its floor for the trading of shares of the listed companies. Hence, it creates liquidity on shares of the listed companies.

After the restoration of democracy in 1991, the government has adopted liberalization and open market policy. As a result, there have been continued financial reforms and frequent amendments bylaws related to the financial market to create a conductive environment for the development of competitive and efficient stock market. Accordingly, the Nepalese stock market is taking its pace for the development. However, here a question arises whether the Nepalese stock market is efficient enough to maintain the MPS according to financial position of a company. The highly fluctuating stock market prices at NEPSE may not be the symptom of the efficient market. In the recent stock market turmoil, most of the investors complain that they are suffering from unexpected fluctuations of share prices at NEPSE. Therefore, this study attempts to relate the share price with major financial indicators and the risk and return analysis for providing suitable bases for investment in common stocks of the sampled companies.

Standard Chartered Bank Nepal Limited, Nabil Bank Limited and Himalayan Bank Limited are the three joint venture banks out of twenty one joint venture banks operating within tertiary of Nepal. These banks are established in different time period. So, I think these sample banks with difference service can cover all information for the thesis and make meaningful. Such banks are studied to identify and to analyze statement of the problems.

1.2 Statement of the Problem

People invest their hard earned money for satisfactory and expected return. To these objectives, firms distribute the earnings to their shareholders. Earning is that amount which remains after deducting or submitting all operational and non-operational expenses. Stockholders expectations may vary with their investment priorities. So capital market investment in this present context plays the major role in the economic development of the country. The public limited companies are increasing tremendously in response to the economic liberalization and

globalization policies adopted by the Nepalese government. Such institutions provide banking, insurance and financing services as well as participating in developmental works, manufacturing and processing and other various areas. After the emergency of NEPSE in 1997, the concept of capital market has been developed and growing rapidly within a short span of time.

The recent trend of investment shows that the general people are interested to invest their small money on the common stock of financial institutions like commercial banks. But due to the lack of proper information about market status and situation and poor knowledge, market intermediaries exploit investors. Sometimes they think that investing in common stocks is intolerably hazardous.

Due to this, many investors afraid to invest onto stocks. This is the main problem that does not allow gearing up the capital market of the nation. The main problem for the individual investors are lack of proper information about market whereas the problem for financial sector to enhance the goodwill among the public due to frequent collapse of some finance companies being unable to utilize public funds properly. The investors are responsible to make rational investment decision. For this rational analytical knowledge is essential. The investors' attitude and perception also plays a vital role in rational decision regarding whether the investment should be made or not.

Due to lack of investment opportunities due to the country's prevailing situation, public are attracted towards the shares purchasing. People are unknowingly purchasing their shares to utilize their unused funds i.e. especially of commercial banks, which seems to be the blue chips to the potential investors. Market price of shares fluctuates with different factors. The market rumors play a significant role in the fluctuation of share price of the companies. So we can say that the Nepalese stock market is weak form of the market. The policy makers are unable to make

the appropriate policy for the development of the stock market. There is poor contribution of government efforts for the development of the stock market in Nepal. Due to the lack of proper implementation of the policy adopted by government under the extended structural adjustment program (ESSP), the stock market has not achieved sustainable development.

Most of the investors are not aware of the financial position of the companies in terms of their financial indicators, in which they are investing their funds through secondary market – NEPSE. The market price of common stock (share) does not seem to be in accordance with the financial indicators – Earning per Share (EPS), Dividend per share (DPS) and Net worth per share (NWPS). Instead, in determination of the market price of share, there has been major influence of rumors rather than strength of the companies.

Generally, the trend is that the MPS of public quoted companies is above their book value. The market value is determined by the supply and demand functions. However, in an efficient market MPS fully reflects all the historical information publicly available.

Here raises the question of efficiency of the Nepalese stock market. The high movement of share prices may be the outcome of the efficient behavior. Our stock market is not efficient enough since all the listed companies do not make past information available to shareholders. Many listed companies do not produce timely financial statements or annual reports. The Security Exchange Act strictly prohibits the misuse of inside information but the regulating authorities can make no advance notice of how there is use of inside information. It denotes that every investor should be well aware of the degree of risks in which they are investing or going to invest their saving funds. There are very few practices of analyzing this aspect in the Nepalese context. Most of the investors are investing their funds

haphazardly without considering risk involved in their investment. That's why the major issues might be whether the MPS of listed companies, especially for selected companies, are really representing the financial indicators, i.e. EPS, DPS and NWPS.

1.3 Significance of the Study

The people's participation in security investment and stock trading is increasing unexpectedly. The recent trend and people's attitude towards common stock investment shows that there is a high potentiality in stock investment, which results an increase in economic activity. It is important to increase financial and economic activities of the nation. Thus this study has tried to fulfill the need in this aspect. The study may also help for interested management. A part from above, this study will be a matter of interest for academicians, student and practitioners.

The focus of the study is on the analysis of investment in shares of Nepalese Commercial Banks with risk and return perspective, which will enable all the related persons to guide the investment related activities. Benefits of the study will receive primarily by potential investors. Security business persons, issue manager, broker and marketing managers will also be benefited by this study. Daily we go through news regarding the fluctuation of price of share of the companies based on which we confer to the fact. Whether the business is having weak days or enjoys great days. General public is accustomed to read the news over these in the newspaper everyday and that takes the matters as a part of news and nothing else. General people are not so much aware about the fact of this news that by which the prices of shares are being changes every day. What are the major reasons behind the fluctuation of price of the shares of the companies, which they hold? The cause of price change may be signaling or informational effect, low return, high risk, lack of knowledge, low income of the investors and high price of the stock. Since the market price of the share is the function of information, this

research will be focused on how well the shares prices absorb information in the Nepalese Capital Market. In other words, this study is focused on to know how Nepalese investors react to the information disseminated to capital market.

1.4 Objective of the Study

The main objective of the study is to analyze the performance of the stock market and the behavior of share price of listed commercial banks. However, the specific objectives of the study are as follows:

- To provide a brief view of the present to Nepalese stock market.
- To ascertain the share price behavior of the commercial banks listed in NEPSE.
- To analyze the risk involved in the common stock investment of the sampled commercial banks.
- To evaluate return and risk proportion of investments on the stock of sampled commercial banks.
- To provide suggestions, some practical ideas and recommendations based on the analysis of the data.

1.5 Limitation of the Study

Due to various reasons this research work is not able to study the whole Nepalese capital market in details. For the sake of ease this tries to study its subject matter by concentrating on some important variables and ignoring others. That is why this research is also not free from limitations. The major limitation of the study is presented below:

- The core of this study is based on the secondary sources of information. Hence any incorrectness in the key information like NEPSE index gathered from the secondary sources might affect the accuracy of the outcome of the study.

- The study has been designed (to concentrate on some of the banking sector, which is a part of total capital market). So the conclusion cannot be generalized on the total capital market.
- For the purpose of study only common stocks or ordinary stocks are taken.
- There might be various techniques and method to perform the study on stock price movement, but the study is focused only on the run test, risk and return analysis and some ratios analysis.
- This study has been conducted to fulfill the requirement of the MBS programs of T.U. for a prescribed time, not for generalization purpose.
- As a research student the study will be unbiased but resources and time period is limited.

1.6 Organization of the Study

The study is divided into five chapters as follows:

Chapter I: Introduction

This chapter contains the introductory part of the study. As already mentioned, this chapter describes the background of the study, capital market, statement of the problem, objective of the study, significance of the study, limitation of the study and organization of the study.

Chapter II: Review of Literature

This chapter is devoted for the brief review of literature available. Review from books, journals (articles), thesis etc. are included in this chapter. Conceptual framework about risk and return is briefly reviewed.

Chapter III: Research Methodology

This unit presents methodology used in the study. This chapter describes the Research Design, Population and Sample, Sources of Data, Tools for Analysis and Methods of Presentation of Analysis etc.

Chapter IV: Data Presentation and Analysis

In this chapter, data collected from various relevant sources is presented and analyzed using various statistical and non-statistical methods.

Chapter V: Summary, Conclusion and Recommendation

This chapter states summary, findings, conclusion and recommendations, this chapter presents the major findings and compares them with other empirical evidence to the extent possible and provides some suggestions. The bibliography and appendix are incorporated in the end of the study.

CHAPTER - II
REVIEW OF LITERATURE

The primary concern of this study is to focus on Risk and Return characteristics of common stock of commercial banks. Theoretical aspects of Return and Risk are explained in this chapter. Furthermore, books and journals related to financial management and other related studies have been reviewed. Some selected Master's Degree Thesis have also been reviewed.

2.1 Conceptual Framework

The objective of this section is to know how various writers have described about risk and return. This study is focused on the common stock investment. It is may be defined as a share in the ownership of the firm. Common stockholders are real owners of business firm. Common stocks are more risky than both preferred stock and bond but it has also benefit like voting right, right in participation in profit and may be purchase and sold immediately.

2.1.1 Meaning 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 anybody of the individuals, whether incorporated or not, constituted for the purpose of regulating controlling the business of selling of dealing securities. According to Brigham and Eharadt, 10th edition, "capital markets are 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 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 nonfinancial resources.

"Capital Market is concerned with long-term finance; widely consists of series of channels which the saving of the community is made available for industrial and commercial enterprises and authorities. It is concerned with that private saving; individual as well as corporate that is turned into investment through the new capital issue and also new public loan floated by government and semi government bodies. Capital market means any body or individuals, whether incorporated or not, constitute for the purpose of regulating or controlling the business of buying selling or dealing in securities" *(Bhalla; 1995:21).*

Capital market consists of securities market and non-securities market. Securities markets imply mobilization of the funds through issuance of the securities like shares, bonds and debenture by corporate sector and bond, bills and debentures by government. These securities traded in the secondary market are generally negotiable and hence can be traded in the secondary markets. Non-securities market refers to the mobilization of the financial resources by the financial institutions in the form of deposits and loans.

2.1.2 Types of Capital Market

(a) Primary Market

Primary market is the market through which the funds are transferred from saver to demander. Hence, securities available for the first time are offered through the primary securities markets. The issue may be a brand new company or one that

has been in business for many years. The key is that securities absorb new funds for the coffers of the issuer. It is also known as New Issue Market.

(b) Secondary Market

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

(c) Money Market

Money Market is also called short term financial market which is the set of supplying short term debt or working capital needed for industries, business or incorporated etc.

2.1.3 Meaning of Common Stock

"Common stock represents equity or an ownership position in a corporation. It is a residual claim, in the sense that creditors and preference shareholders must be paid as scheduled before common stock holders can receive any payments. In bankruptcy, common stock holders are in the principle entitled only to any value remaining after all other claimants have been satisfied" *(Sharp; 1996:457).*

Common Stock holders are entitled certain rights, which are as follows:

- Control through voting right
- Preemptive right
- Residual liability
- Limited Liability
- Right to income and distribution of additional shares

(a) Common Stock Values

Common stock holders are either denoted by par value, book value or market value. These three terms are different and their rupee amount differs.

Par Value: The face value of one stock established at the time the stock is initially issued is known as par value. The par value of a common stock remains unchanged unless and until the stock split or reverse split exists. Generally common stocks carry Rs. 100 par value.

Book Value: the sum of the cumulative retained earnings and other entries such as common stock and capital contribution in excess of par value under stock holder's equity is the book value of the equity.

Book Value of Equity = Cumulative Retained earnings + capital contribution in excess of part + Common Stock.

The book value per share is obtained by dividing the book value of the equity by the number of shares outstanding. Higher profit indicated that higher book value of stock.

Market Value: The value of the share in secondary market traded between investors and traders is the market value. Market value is the consequence of demand and supply. It is influenced by various factors such as economic and industry conditions, expected earnings and dividends, and market and company risk considerations.

2.1.4 Meaning of Risk and Return

a) Meanings of Risk

In the basic sense, risk can be defined as the chance of loss. Assets having greater chances of loss are viewed as more risky than those with lesser chances of loss.

More formally, the term risk is used interchangeably with uncertainty to refer to the variability of expected returns associated with a given asset.

Risk is a complicated subject and needs to be properly analyzed. The relationship between risk and return is described by investor perception about risk and their demand for compensation. Generally, investors are mostly interested in the project yielding higher returns in less risk. Therefore, it is the investors required risk premium that establishes a link between risk and return. In a market dominated by rational investor higher risk will command by rational investor's higher risk will be commanded by rational premium and the trade off between the two assumed linear relationships between risk and risk premium. "The observe difference in both the levels and variability of the rates of return across. Securities are indicative of the underlying risk and return relation in the market" *(Loric, Dodd and Kimpton; 1985:87).*

"Risk defines most generally is the probability of the occurrence of unfavorable outcomes. But risk had different meaning in the different context in our context; two measure developments from the probability distribution have been used as initial measures of return and risk. There are the mean and the standard deviation of the probability distribution" *(Weston and Brigham; 1982:557).*

Beta Coefficient

This is mathematical value that measures the risk of one asset in term of its effects on the risk of a group of assets, as would be the concern for an investor holding stocks and bonds. It is derived mathematically so that high beta indicated a high level of risk whereas a low beta represents a low level of risk. Mathematically, "β_j" denotes it.

Standard Deviation

This is a measurement 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 single assets. The standard deviation is derives so that a high standard deviation represents a large dispersion of return and is a high risk and vice versa. Mathematically, it is denoted by δ_j.

Subjected Estimates

A subjective risk measures occurs when qualitative rather than quantitative estimates are used to measure dispersion. As an example: an analyst may estimate that a proposal offers a "low" level of risk. This means that, in the analyst's view – the dispersion of return will not be very wide, Similarly, a "high" risk level will accompany a project whose forecast return may very a great deal.

With the overall definition of risk as dispersion of return, there are two components of risk may be identified.

(i) Business Risk

Business risk may be defined as the chance that the firm will not have ability to complete successfully with the assets that it purchases. For an example: the firm may acquire a machine that may not operate properly, that may not produce stable products or that may face other operating or marker difficulties that causes losses. Any operational problems are grouped as business risk.

(ii) Financial Risk

This is the chance that an investment will not generate sufficient cash flows either to cover interest payment on money borrowed to finance it or principal repayment on debt or to provide profits to the firm.

b) Meanings of Return

The concept of return has different meaning to different investors. Some investors seek near term cash flows and five less value to more distant return. Such an investor might purchase the stock of other from that pays a large cash dividend.

Return better known or reward from an investment includes both current income and capital gain or loss that arises by the increase or decrease of the security price. Return is the income received on an investment plus any change in market price. Usually expressed as a percent of beginning price of the investment, the overall rate of return can be decomposed into two parts as capital appreciation and dividend. Capital appreciation is the difference between ending value and beginning value of an investment. Return is defined as the dividend yield plus the gain or loss. The relationship between different levels if return on their relative frequencies is called a probability distribution. We could formulate a probability return over the previous period but we know that history never repeats itself exactly. Hence after analyzing relative frequencies of historical data plus the analysis for the outlook for the economy and the outlook for the industry, the outlook for the firm in its industry and other factors.

For investors, return is considered as the main attraction to invest in a risky security as a stock (equity) accepting a varying degree of risk tolerance. "the return from holding an investment over some period says a year is simply and cash payments received due to ownership plus the change in market price divided by the beginning price. Thus the return comes from source, income and price appreciation.

For common stock, we can define, one period (single period) return as:

$$\text{HPR or Simple 'R'} = \frac{(P_t - P_{t-1}) - D_t}{P_{t-1}}$$

Where,

R = Annual rate of return

P_t = Price of a stock at time t

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

D_t = Cash dividend received at time

Above formula can be used to determine both actual one period return (when based on historical figure) as well as expected one period return (when based on expected dividends and prices). The return in the parenthesis is the number of the above equation represents the capital gain or loss during the period.

Holding period return measures mentioned above is useful with an investment horizon of one year or less. For longer periods, it is better to calculated rate of return as investments yields. The yield calculated is present value based and this considers the time value of money.

Annualized rate of return over several periods can be calculated in two ways. The first one is simply to take the arithmetic average of the annual holding period returns over a given period and the second one, which also takes account the compounding effects of cash receipts over different time intervals is the geometric mean rate of return.

The simple arithmetic mean:

$$\overline{HPR} = \sum_{t=1}^{n} \frac{HPR_t}{n}$$

The Geometric mean:

$$\overline{HPR}\, g = \sum_{t=1}^{n} (1 + HPR_t)^{\frac{1}{2}} - 1$$

Where, HPRt is the individual period return, is the number of period and $\sum$ represents the product (or the result of multiplication).

2.1.5 Theories and Approaches of Stock Price Behavior

There are two theories of stock price behavior i.e. classical approach and efficient market theory approach. Classical or conventional approach includes Fundamental Analysis and Technical Analysis Theory. Under efficient market theories, there are three forms of efficient market hypothesis. Classical approach assumes market as inefficient whereas the efficient market theory; investors were generally divided into two groups, fundamentalist and technicians.

a. Classical Approach

The classical approach includes fundamental analysis and technical analysis theories. One of the major divisions in the ranks of financial analysis is between those using fundamental analysis (known as fundamental analysis or fundamentalists) and those using technical analysis (known as technical analyst or technicians). Fundamental approach forecast stock price on the basis of earnings and dividends of the company whereas technical analysis forecast stock prices on the basis of past price behavior of the company.

(i) Fundamental Analysis

Fundamental analysis theory claims that at any point of time an individual stock has an intrinsic value, which is equal to the present value of the future cash flow from the security discounted at appropriate risk, adjusted discount rate. “The value of the common stock is simply the present value of all the future income, which the owner of the share will receive” *(J. Clarks; 1991:398).*

“In the simplest form, fundamental analysis begins with the assertion that the true value of any financial asset equals the present value of all cash flows the owner of

the assets expects to forecast the timing and the size of these cash flows and then converts the cash flows to their equivalent present value using an appropriate discount rate" *(Gordon; 2000:12).*

In the fundamental approach, the security analyst or prospective investors is primarily interested in analyzing factors such as economic influence industry factors and pertinent company information such as product demand, earnings, dividends and management in order to calculate an intrinsic value for the firm's securities. "The fundamentalist reaches an investment decision by comparing this value with the current market price of the security. He tends to look forward and is concerned with such matters like future earnings and dividends. It is sometimes said that the fundamental analysis is designed to answer the question 'what'". *(Gordon; 1999:844)* Fundamental analysis approach is not possible if capital markets are semi strong form efficient, since securities prices will already fully and fairly reflect all publicly available information.

Fundamental analysis approach involves working to analyze various factors like economic influences, industry factors, firm's financial statement and pertinent company information such as product demand, earnings, dividends and management in order to calculate an intrinsic value for the firm's securities. The theory assumes that knowledge about the future companies is not perfect, some stocks are under priced and others are over priced. "The investor's task to study certain fundamental factors that may enable them to select undervalued stock for purchase and sell overvalued stocks. After extensive analysis, the investor derives an estimate of the 'intrinsic' value of the security, which is then compared to its market price. If the value exceeds the market price, the security should be acquired and vice versa" *(Reily; 1986:347).*

The objective of the fundamental analysis is to appraise the intrinsic value of the security. The intrinsic value is the true economic work of the financial assets. Therefore, fundamental analysts work to find new information before other investors, so they can get into the position of profit from the price changes they anticipate. Fundamental analyst use different models like Top-Down versus Bottom up forecasting, probabilistic forecasting, econometric models, financial statements analysis etc to estimate the value of security in an appropriate manner for making investment decision.

Some limitations of the fundamental analysis approach are as follows:
The approach, though sound and based financial figures does not suffer from the drawbacks and to make this approach work effectively, one must be aware of them. The fundamental approach is based on rational scientific analysis of data, but the market is rarely rational.

The information and analysis may itself be incorrect many companies with the help of creative and innovative accounting and accounting cosmetic disguise the real earnings.

The fundamentalists' estimate of intrinsic value may be incorrect. This is not only possible but also probable that he often forecast growth, profit and other factors without grasping all the facts.

The fundamentalists may not fully understand the economy or the industry, as there are several external factors.

Therefore, fundamental analysis is a never ending process because values change overtime. Ideally, revision in analysis should occur whenever new information affecting the future benefits to security holders become available.

(ii) Technical Analysis

"In its simplest form, technical analysis involves the study of stock market prices in an attempt to predict future price movements. Past prices are examined to identify recurring trend or patterns in price movements. Then more recent stock prices are analyzed to identify emerging trends or pattern, the analyst hopes to predict accurately future price movements for a particular stock" *(Gordon; 1999:12).*

"Technical analysis is based on the widely accepted premise that security prices are determined by the supply of and the demand for securities. The tools of technical analysis are therefore designed to measure certain aspects of supply and demand" *(J. Francis; 1991:521-522).*

"Technical analysis can be defined as the use of published market data for the analysis of both the aggregate stock market and individual stocks. It sometimes called market or internal analysis". *(Charles; 1988:396)* Technical analysis is based on some assumption that the past information of prices and trading of stock provides some pictures of the future price of stocks. Technicians seek to forecast security prices rather than security value especially trends in the price changes. Price and volume are the primary tools of the technical analyst. Price and volume are the primary tools of the technical analyst. "Technicians believe that the forces of supply and demand show up in patterns of price and volume. Volume data are used to gauge the general condition in the market and to help assess its trend. The evidence seems to suggest that rising (falling) stock prices are usually associated with rising (falling) volume. If the stock prices but volume activity does not keep pace, technical analyst would be skeptical about the upward trend. A downside movement forms some pattern or holding point, accomplished by heavy volume, would be taken as a bearish sign" *(Charles; 1988:396).*

“The technical analyst usually attempts to predict short-term price movements and thus makes recommendations concerning the timing of purchase and sales of either specific stocks or group of stock (such as industries) or stock in general. It is sometimes said that fundamental analysis is designed to answer the question 'what' and technical analyst seems to trying to forecast 'when'” *(Gordon; 2000:844).* The technical analyst tries to forecast short run shifts in supply and demand that will affect the market prices of one or more securities.

“Typically, technical analyst records historical, financial data on charts, study these charts in search of patterns that they find meaningful and endeavor to use the pattern to predict future prices. Some charts are used to predict movements of market index and still others are use to predict the action of both individual assets and the market” *(Francis; 1991:521-522).*

“Technical analysis however may be useful in timing a buy or sell order that may be implied by the forecasts of return and risk. For example, the technical analysis may reveal that a drop in price is warranted. Postponement of purchase, then if the technical analysis is correct, will raise the forecast holding period yield (HPY). Conversely, a sale order might be postponed because the charts reveal a raise in the price of the security in question” *(Fischer; 1995:510).*

The basic assumptions of technical analysis are as follows:
“Market value is determined by interaction of supply and demands. Supply and demand is governed by numerous factors, both rational and irrational. Security prices tend to move in trends that persist for an appreciable length of time, despite minor fluctuations in the market. Changes in trend are caused by the shifts in supply and demand. Shifts in supply and demand, no matter why they occur, can be detected sooner or later in charts of market transaction. Some chart patterns tends to repeat themselves” *(Francis, 1985:86).* Thus the technical analyst believe

in the changes in the pattern or tend of security price take place in account of changes in the demand and supply of the securities, and that crucial insights into these patterns can be obtained by keeping track of price chart. The technical analyst can tell whether the price of a share is on upswing or on the downswing in the future. Technical analysis involves the examination of past market data, such as prices and the volume of trading, which lead to an estimate of future piece trends and therefore, an investments decision. Whereas fundamental analysts use economic data that are usually separate from the stock or bond market, the technical analyst believes that using data from the market itself is a good idea because 'market is its own best predictor'. Technical analysts base trading decision on examination of prior price and volume data to determine past market trends form which they predict future behavior for the market as a whole and for individual security.

Technical Tools

Dow Theory

This tool is originated by Charles Dow, the founder of the Dow Jones Company, one of the oldest and famous technical methods of analyzing security prices. The objective of the Dow Theory is to identify long-term trends in stock market prices. "According to this theory, it is believed that the market is always considered as having three movements, all going at the same time. The first is narrow movement from day to day. The second is the short swing, running from two weeks to a month or more; third is the main movement covering at least four years duration" *(Francis; 1900:19).*

So we can say that there are three forces simultaneously affecting the stock prices, basically called the primary or major trend, secondary or intermediate trend and finally tertiary or bullish trends. The primary prices movements are held to constitute the bearish or bullish trends, whereas the secondary movements are

regarded as passing phases. Tertiary price movements are daily price fluctuations, which to Dow attribute to no significance or ignore the role of this trend. “The Dow Theory employs two indicators called Dow Jones Industrial Average (DIJA) and Dow Jones Transpiration Average (DJTA). The DJIA is a key indicator of underlying trends while DJTA usually serves as a check to inform or reject that signal” *(Bodie; 2002:344).*

The Dow Theory is built upon the as certain that stock prices tend to move together. If the DJIA is rising then the DJTA should also be rising. Such a simultaneous price movements suggests a strong bull market. Conversely, a decline in both the averages suggests a strong bear market. However, if the averages are moving in opposite direction, then the stock market is uncertain regarding to direction of future stock prices. The forecasting of Dow Theory is less accurate. It might work only when a long, wide, upward or downward, movement is registered in the market. It is mostly unsuitable as a market predictor when the market trend frequently reserves itself in the short or intermediate term. This theory fails to explain a consistent pattern of the short price movements.

Barron's Confidence Index

“In the literal sense, the confidence index is defined as the ratio of high-grade bond yields divided by low-grade bond yields. The ratio is supposed to reveal how willing investors are to take investment risks. Barron's confidence index is constructed by using Barron's index of yields on the high-grade bonds to low grade bonds. The confidence index is usually, but not always, a leading indication. Like most of other technical indicators, the confidence index may sometimes issue erroneous signals and should therefore not be used without confirming evidence from other indicator” *(Francis; 1991:531).*

Odd Lot Theory

This theory concerns the purchase and sales of securities by small investors. These investors do transactions of less than 100 shares. Some technicians take ratio of these odd lot purchases to odd lot sales as an indicator of the direction of the future prices. An increase in the index suggests relatively more buying, a decrease indicates relatively more selling. During most of the market cycle, off lots are selling the advances and buying the declines. "Odd lotters try to do the right thing most of the time; that is they tend to buy the stocks as the market retreats and sells stocks as the market advances. However, the technicians feel that odd lotters are inclined to so the wrong thing at critical turns in the market". *(Fischer; 1995:515)*

b. Efficient Market Theory

In a competitive market, the equilibrium price of any good or services at a particular movement of time is such that the available supply is equated with the aggregate demand. This is the true worth of the goods or services, based on all publicly available information. The new equilibrium price will hold until another bit of information is available for analysis and interpretation. An efficient market is one were shares are always correctly priced and where it is not possible to outperform the market consistently except by luck. "In an efficient capital market, current market prices fully reflect available information" *(Eugene; 1196:133).* Therefore, if the market is efficient, it uses all the available information to it setting price. When security prices at all times rationally reflect all available, relevant information, the market in which they traded is said to be efficient. This implies that any new information coming to light, which bears on particular firm, will be incorporated into the market price of the security. An efficient capital market is one in which security prices adjust rapidly to the arrival of new information and therefore the current prices of securities reflect all information about the security.

“An efficient market is define as market where there are large numbers of rational profit maximizes actively competing with each other trying to predict the future market values of individual securities, and where importation current information is almost freely available to all participants. In an efficient market, competition among the many intelligent participants lead to a situation where at any point in time, actual prices of individual security already reflect the effects of information based on both events that have already occurred and on events which are of row, the market expect to take place in the future. In other words, in an efficient market any point in time the actual price of a security will be a good estimate to its intrinsic values” *(Eugene; 1970:384-85).*

There are several concepts of market efficiency and there are many degrees of efficiency, depending on the market. Markets in general are efficient when prices adjust rapidly to new information. There is a continuous market, in which each successive trade is made at a price close to the previous price (the faster that the price responds to new information and the smaller the difference in price changes, the more efficient the market. The market absorb large amount of securities without destabilizing the prices.

“In an efficient market, a security's price would correctly reflect the important variables for that security and would represent and unbiased estimate of its investment value” *(Cheney & Mosses; 1972:745).* The efficient hypothesis suggests that investors cannot expect to outperform the market consistently on a risk-adjusted basis over an extended period of time. This hypothesis is based on the premise that security prices reflect all available information concerning a firm and that security prices changes rapidly in response to new information. Market efficiency also implies that as new information becomes available, the market quickly analyses it, and any necessary price adjustment occur rapidly.

The Requirements for an Effective Securities Market

"A large numbers of rational profit maximizing investors exist who actively participate in the market by analyzing valuing and trading stocks. Information is free of cost and widely available to market participants at approximately at same time. Information is generated in a random fashion such that announcements are basically independent to one another; Investors react quickly and accurately to the new information, causing stock prices to adjust accordingly" *(Charles; 1988:425).*

In an efficient market all prices are correctly stated and there are no bargains in the stock market. Efficiency in this context means that ability of the capital markets to function so that prices of securities react rapidly to information. Such efficiency will product prices that are appropriate in terms of current knowledge and investors will be less likely to discover great bargains and thereby earn extraordinary high rates of return. The degree of market efficiency has important implication for the economy and for investment decision makers. In an economic sense, it is important that security prices provide accurate signals would result in incorrect allocation of capital *(Cheney & Mosses; 1972:746).* Although efficient market may be vital and pleasing form an economic perspective, it presents complexity to investors in terms of an appropriate investment strategy.

If a market is efficient then there is a very important implication for market participants: all investments in the market are zero NPV investments. The reason is not complicated. If the prices are neither too low nor too high, then the difference between the market value of an investment and its cost is zero; hence the NPV is zero. As a result, in an efficient market, investors get exactly what they pay to when they buy securities and firms receive exactly what their stocks and bonds are worth and sell them.

In an efficient market, liquid capital will channel quickly and accurately where it will do the community the most good, efficient market will provide ready financing for worthwhile business venture and drain capital away from corporations that are poorly managed or producing obsolete products. One of the main reason that some underdeveloped countries do not advance is that have inefficient capital markets, where prices may be fixed or manipulated rather than determined by supply and demand. An efficient market is assumed perfect market in which there are many small investors, each having the same information and expectations with respect to securities; there are no restrictions on investment, no taxes, and no transaction costs and all investors are rational, view securities and are risk averse, preferring higher returns and lower risks.

"In an efficient market, there are neither free lunches nor expensive dinners. It is possible to systematically gain or lose abnormal profits from trading on the basis of available information" *(Weston & Copeland; 9th edition: 93-94).* Not all market participants are believers in the efficient market hypothesis. Some feel that it is worthwhile to search for undervalued or overvalued securities and to trade them to gain profit from market inefficiencies. Others argue that it is mere luck that would allow market participants to correctly anticipate new information. The security prices have been observed to move randomly and unpredictably. This randomness of security prices may be interrupted to imply that the security prices quickly adjust to such information. Therefore, the capital market efficiency can also be defined as the ability of securities to reflect and incorporate all relevant information of its prices. So there is no question of the share price being under of overvalued.

Although it may not literally be true that all relevant information will be covered, it is virtually certain the there are many investigators hot on trial of most leads that seem likely to improve investment performance. Competition among these may be

well backed; highly paid, aggressive analysts ensure that, as a general rule, stock prices ought to reflect available information regarding their proper levels.

"If new information becomes known about a particular company, how quickly do markets participants find out about the information and buy or sell securities of the company on the basis of the information? How quickly do the prices of the securities adjust to reflect the new information? If prices respond to all new information in rapid fashion, can we say the market is relatively efficient? If instead the information disseminates rather slowly throughout the market, and if investors take time in analyzing the information and reacting, and possibly overreacting to prices may deviate from values based on a careful analysis of all available relevant information. Such market could be characterized as being relatively inefficient" *(Haugen; 2001:573).*

(I) Forms of Efficient Market Hypothesis

- Weak form efficiency
- Semi-strong form efficiency
- Strong form efficiency

"The difference between these forms elates to what extent information is reflected in the stock prices. Under the weak form, stock prices are assumed to reflect any information that may be contained in the past history of the stock price itself" *(Haugen; 2001:575).* This hypothesis holds that no investor can earn excess returns by developing trading rules based in historical prices or return information. Weak form efficiency, suggests that, at a minimum, the current price of a stock reflects the stocks own prices. In other words, studying past prices in an attempt to identify misplaced securities is futile if market is weak form efficient. Although this form of inefficiency might seem rather mild, it implies that searching for

patterns in historical prices that will be useful in identifying mispriced stocks will bit work.

“Under semi strong form, all publicly available information is pre assumed to reflect in securities' prices. This includes information in the stock price series as well as information in the firm's accounting reports, the reports of competing firms announced information relating to the state of the economy and any other publicly available information relevant to the valuation of the firm” *(Haugen; 2002:575).* This form of efficiency is most controversial. The reason this form is controversial is that if implies that a security analysts who try to identify mispriced using, for example, financial statement information is wasting time because that information is already reflected in the current price.

“The strong form takes the notion of market efficiency to the ultimate extreme. This form includes private of inside information as well as that which is publicly available. Under this form, those who acquire inside information act on it, buying or selling the stock. Their action affect the price of the stock and the price quickly adjust to reflect the inside information”. *(Haugen; 2001:575)* One obvious way to check the validity of the strong efficient market hypothesis is to examine the probability of traders in securities made by insiders to see if the insider's access to valuable information allows them to earn statistically significant trading profits *(Francis; 1991:5).* Thus the strong form of the efficient market correctly prices securities adjusting quickly to new information either public or private.

(i) The Random Walk Theory or Theory of Weakly Efficient Market

The weakly firm of efficient market hypothesis state that current prices fully reflect the information contained in the historical price movements. “According to Kean, the market is efficient in weak sense if share prices fully reflect the information implied by all prior price movements. Price movements in effects are

totally independent of previous movements, implying the absence of any price patterns with prophetic significance"*(Francis; 1991:10).* So, the past prices have no meaningful information to predict future course of price fluctuations, which can be used to earn above average return. "The movement of future prices is independent form previous prices or the series of price change are random phenomenon. Actually, the weak form of efficient market hypothesis is referred to as random walk theory of share price behavior. Weak form of market hypothesis is popularly known as random walk theory"*(Fischer; 1995:540).* Random work theory implies the future path of the price level of a security is no more predictable than the path of a series of cumulated random numbers. The series of price changes has no memory; i.e., the past cannot be used to predict the future in any meaningful way. It means that current size and direction of price changes is independent and unbiased outcome of previous price changes. "The random walk model in pristine from includes two main hypothesis state that successive price change are independent and the price changes confirm to some probability distribution" *(Eugene; 1965:35).*

"Statistically, independence means probability of distribution for the price change during time periods. More precisely in algebraic term,

Pr (Xt=X/Xt-1,Xt-2) = pr(xt=X)

Where the term on the left side of equation is the conditional probability that the price change during time t will take the value of X, conditional on the knowledge, the previous price changes the value xt-1, xt-2 etc. but the term on the right of the equation is unconditional probability that the price change during t will take value X. The expression means the conditional and marginal probability distribution of an independent random variable are identical" *(Gupta; 1989:31).*

"Out of the two hypotheses of the random walk theory, the independence of successive price changes is strong and most important one to make the theory valid. The second one is price changes conform to some probability distribution but its shape or form of distribution need not to be specified i.e. any distribution is consistent with theory as long as it correctly characterizes the process generating the price changes" *(Eugene; 1965:36).*

"However the parameter of the distribution should be stationary but not so strongly imposed of independence hypotheses is hold true. However, still the form of distribution of price changes is important form investment decision, academic and research point of view" *(Eugene; 1965:41)*.

"Proponents of random walk theory recognize that in general perfect independence assumption does not exist in real world. So they argue that for practical purposes, it cannot be used to forecast future to earn more than average market return. Random walk model is valid as long as knowledge of the past behavior as the series of price change can be used to increase expected gains" *(Eugene; 1965:35).* That is, for practical purposes, independence hypothesis is accepted as long as the degree of dependence considered in the series of price changes is not sufficient to forecast the future from the historical price movements in away that makes higher profit that they would be under the naïve buy-and-hold policy. Actually market mechanism establishes the existence of random walk theory that the successive price changes to be independent. The stock market poses steady inflow of information that have a whole market-wide impact such as change in monetary and fiscal policy on security prices and another information have an effect on industry-wide impact such as change in government's tax policy on specific industry. There are information such as announcement of earning and dividend that affect price of the particular security. "The change in the set of anticipations resulted from either of the above information is unique to ach individual and may

be caused by psychological or whimsical and other factors, which impinge then to bid on prices of the securities of the market. There are other groups of participants who estimate the intrinsic value of the individual securities from the receive information. The existence of intrinsic value or the individual is not consistent with random walk hypothesis" *(Eugene; 1965:36)*. At any point in time, there exist implicitly an intrinsic value of each share but in the world of uncertainty the intrinsic value are not known exactly. Therefore, there can be disagreement among the participants about the estimated intrinsic value of the shares and actual price differ from its intrinsic values. Over the time, the intrinsic value itself changes as new information appears, that affect the prospects of company. New information may be about deregulation in the quota system on the efficiency licensing, a change in management, success in resource and development and tariff imposed in raw material etc. If steady inflows in various types of information (i.e. pessimistic, optimistic and so on) arise independently across time and if participants do not so dependent tendency about intrinsic value, the subsequent price changes in stocks will be independent. However the real world, this condition always do not hold true. There may be dependencies in the reaction of participants towards the estimation of new intrinsic value or whimsical tendency. For example certain individual's or institution's action on new anticipation of value may induce many people. This reinforcing behavior lead to deviate the anticipation values for below or above form its true value' which result unhindered dependencies in subsequent price changes. In this situation, we can assume that there exist many sophisticated traders of two types.

Traders having much better capacity to predict the appearance of new information and estimate of its effects on intrinsic values than others generally named superior intrinsic value analysts, traders having much better skills at doing statistical analysis of price behavior named technical analysts. The sophisticated traders can recognize the situation where the price of the stock is beginning to run up or down

from the intrinsic value because of inappropriately under or over discounting or information and its adjustment in the security prices. This situation provides them incentive for speculation in the market because the price is expected to move eventually to its intrinsic value. Thus, the existences of profit maximization strategy of these sophisticated traders lead to neutralize the dependence in the price changes and price changes follow to independence of successive price changes.

Of course in the certain world, sophisticated traders cannot always estimate intrinsic value exactly and their efforts towards erasing the dependencies may not be sufficient. In this case, sophisticate chartists can reinforce the neutralizing mechanism, because as long as there are important dependencies they can easily discern the ‘trends’ and ‘patterns’ and initiate value maximization strategy.

Over the time, the infusion of the new information in the market may move dependently which will tend to create dependence in the successive price changes of security. For examples optimistic information tends to be followed mote often by optimistic information than pessimistic news than good news. In case also, the sophisticated traders eventually learn that it is profitable for them to estimate price changes of current new information and subsequent dependence of the same information, Though their active speculation on the opportunity to erase the subsequent dependence in price series and establish independence assumption in the random walk theory of stock market price behavior. The random walk theory says nothing more than that successive price changes are independent. This independence implies that prices at may time on the average reflect the intrinsic value of the security. If a stock’s price deviates from its intrinsic value because, among other things, different investors evaluate the available information differently or have different insights into future prospects if the firm, professional investors and smart non professionals will seize upon the short term or random

deviations from the intrinsic value, and though their active buying and selling of the stock in question will force the price back to it equilibrium position" *(Fischer; 1995:553).*

"If the random walk hypothesis holds, the weak form of efficient market hypothesis must hold (though not vice versa). Thus evidence supporting the random walk model is evidence supporting weak form of efficiency" *(Elton; 1991:404).* If the prices follow a random walk, price changes overtime are random (independent). The price change for today is unrelated to the price change of previous days. Any new information arrived randomly in the market results in the random changes in the prices. Random walks theory that involves selection of securities is represented as the modern approach to investment decisions.

2.1.6 Stock Exchange

The stock exchange is an institution where quoted securities are exchanged between buyers and sellers. The stock exchange provides market a wide range of traded securities, generally of medium to long-term maturities, issued by companies, government and public organization.

Most are the investors are attracted to the equity shares because of its marketability and liquidity. One may like to buy more shares or selling existing shares from time to time when he is in need of money or when he wants to shuffle his portfolio. Since the stock exchange is a place where a large number of buyers and sellers congregate, once can by and large, easily find his counterpart for sale or purchase of shares. The investors can convert his shares into cash at the prevailing market prices readily. The existence of stock exchange facilities all these functions without which it is almost impossible to do so.

"The key function of securities exchange is to create a continuous market for securities at a price that is not very different from the price at which they were previously sold. The continuity of securities market provides the liquidity necessary to attract investor's funds. Without exchanges, investors might have to hold debt securities to maturity and equity securities indefinitely. It is doubtful that many people would be willing to invest under such conditions. A continuous market also reduces the volatility of securities prices further enhancing liquidity" *(Gitman; 1992:458).*

The securities exchanges help us to allocate scare funds to the best uses. That is by disclosing the price behavior of securities and requiring the disclosure of certain corporate financial data; they allow investors to access the securities risk and return and to move their fund into the promising investments. An efficient market is one that allocates fund to the most productive uses. Along with this, there is lot of functions of security exchange such as ready market and continuous market, evaluation of securities, safety of transactions, and canalization of savings and widening the share ownership etc. however, besides these are three things a security exchange must do:

- Determine a fair price for the securities it trades or price discovery function.
- Enable transaction to be made at as low cost as possible or minimization of transaction cost.
- Enable transaction to be made at this price quickly and easily or provision for liquidity.

2.1.7 Security Market

Security Market is interchangeably known as the integral part of capital market is in fact basis of the economy of the country. "The most effective use of idle and surplus resources can be brought into practice only by means of market mechanism which mobilized the fund of savers to the user and thus this

financialization boosts the industrialization and trading activities, which will bring the positive result to the economy as a whole" *(Sharma; 2002:16).*

"There are two important functions of securities market, namely the raising of funds in form of shares and debentures and trading the securities already issued by companies. While the first aspect is obviously much more important form the point of view of economic growth, the second aspects is also considerably important. In fact, if facilities for transferring of existing securities are abundant, the raising of new capital is considered assisted as the buyer of a new issue of security become confident that whenever he wants to get cash he can find buyer of the security without much difficulty. This aspect is called the liquidity of the stock market. Thus the liquidity of the stock market affects the raising of new capital form the market" *(Levine; 1992:33).*

Security market sets a price for the securities it trades and makes it easy for people to trade them. Securities market facilitates the sale and resale of transferable securities. The security market can be defined as mechanism for bringing together buyer and sellers of financial assets to facilitate trading. "Securities market is classified into two: the market in which new securities are sold is called the primary market and the market in which the existing securities are resold is called the secondary market. Securities market is created by brokers, dealers and market makers. Brokers bring buyers and sellers together with themselves actually buying or selling; dealers set price at which they themselves are ready to buy and sell (bid and ask price respectively). Broker and dealer come together organized market or in stock exchange" *(Gitman; 1992:457).*

(i) Security market in Nepal

The history of securities market began with the floatation of shares by Biratnagar Jute Mills Limited and Nepal Bank Limited in 1937. Introduction of the company

Act in 1964, the first issuance of the Government Bond in 1964 and the establishment of the Security exchange Center Ltd. In 1976 were other significant development relating to other capital markets. Security Exchange Center was established with an objective of facilitating and promoting the growth of the capital markets. Before conversion into stock exchange it was the only capital markets institution undertaking the job of brokering, underwriting, managing public issue, market making for government bonds and other financial services. Nepal government, under a program initiated to reform capital market converted Securities Exchange Center into Nepal Stock Exchange in 1993. Nepal Stock Exchange, in short NEPSE, is a nonprofit organization, operating under Security Exchange act, 1983.

The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transitions in its trading floor through member, market intermediaries, such as broker, market makers etc. NEPSE opened its trading floor on 13th January 1994. Nepal Industrial Development Corporation and members are the shareholders of the NEPSE.

(ii) Trading System

NEPSE has adopted an" Open out-cry" system. It means transaction of the securities is conducted on the open auction principle on the trading floor. The buying broker with the highest bid will post the price and his code number on the buying column, while the selling broker with the lowest offer will post the price and code number on the selling column on the quotation board. The market makers quote their bid and offer price on their own board before the first floor starts. Once the bid and offer price match, contact between the buying and selling broker or between the broker and market makers are concluded on the floor.

2.1.8 Security Board of Nepal

Securities Board, Nepal(SEBO) was established as an apex regulator of the securities market in Nepal by the Government of Nepal on June 7, 1993 under the Security Exchange Act, 1983 (first amendment). The main objective of SEBO is to regulate and promote the securities market and protect the investors' interests. As per the Securities Act and regulation, following are the major function of SEBO. Developed and implement policies and programs for the development of the securities market and advice Nepal Government in this regard. Register securities and grant issue approval. Provide the license to corporate bodies to operate stock exchange business. Supervise and monitor stock exchange and securities business persons. Conducted research, study and awareness program regarding securities market.

The Governing Board of SEBO is composed of seven members including one full time chairman appointed by the HMG/N for the tenure of four years. Other members of the Board include representative one each from Ministry of Finance, Minister of Law, Justice and Parliamentary Affairs, Ministry of Industry, Commerce and Supplies, Nepal Rastrya Bank (the central bank), Federation of Nepalese chamber of commerce and industries and the Association of Chartered Accountants of Nepal.

There are two departments, six division and ten sections in the organization of SEBO. Under the Corporate Finance and an Administration Department, there are three divisions namely Corporate Finance Report Review Division, Account and Administration Division and HRD and Education Division. There are also there divisions under the Security Market Regulation Department, which are Legal, and Enforcement Division, Market Regulation and Compliance Division and Market Analysis and Planning Development Division.

The major source of financing of SEBO is basically the government grant. Other financing sources include registration of corporate securities, registration and renewal of stock exchange and market intermediaries and the income from mobilization of its revolving fund.

2.2 Review of Journal and Articles

Vasistha (2004) in his article *"Investing in Public Markets"* has expressed the following views:

Company listed on the stock market offer the avenue to the retail and intuitional investor to invest their capital into prospering business. This is known as the Secondary market and is open to invest from general public. Usually a host of market participant including broker, sub-brokers and other intermediaries, general investing public, funds banks and investing institutions (public and private), fund's managers and analysts who typically track listed companies, among others are the key players of this market.

Before these companies can actually list their stock exchanges, they need to follow the process of listing of listing their company's shares on the stock exchange in their respective countries. For these they must get follow other listing norms, meet government regulations and host of other local laws.

In this pre-listing process, host of players are involved apart from the above, which include institutions like the local stock exchange (where the stock will eventually be listed) and the depositories banks and financial institutions (who provide funds for such transactions), merchant bankers, underwriters and registers to the issue, who collectively are responsible for preparing the draft prospectus, conducting road shows for investors awareness and ultimately take care of the

back office processing of the public issue application process, including the allotment process as well.

Before one starts to invest into IPO's read the offer document or the draft prospectus carefully to understand the company better and assess the associated risk factors. A detailed draft prospectus usually contains historic information on the company and its business operations, detailed industry analysis and competitive scenario, financial statements including the balance sheet, profit and loss accounts along with other selected financial data, and information on the promoters, current management team and their track records, government approvals in place, along with highlights of any outstanding litigations, contingent liabilities and material developments etc.

Last but not the least, the IPO or public issue is done with a particular purpose in the mind for example undertaking a capital expenditure plan for capacity up gradation, increase spending on marketing and sales, opening new offices in new geographies, increase spending on research and development etc. Usually this is highlighted in the prospectus/offer document as part of the object of the issue and the capital structure, and should be read carefully along with the term of the issue, the issue structure and procedure. Companies usually go to the investors to raise money when the markets are bullish and participants are optimistic about the company and the economy in general. Although these and other market factors help a company to positions its IPO and sell it to the investing public at the highest possible prince, the retail investor should be cautious and do their homework on the company, the lead managers, merchant bankers to the issue, before getting sucked into the general frenzied activity during a bullish phase in the markets.

Usually it is seen in bullish market, all kind so companies tend to flick the market to raise money from the unsuspecting public, with relative ease, for all kind of

business and fancied plans. Retail investors should be careful and avoid such issues and shady promoters with lousy track records of implementing projects. Just as a large wave tends to lift both big and small boats in the ocean, a bull market also lifts both good and penny stocks to list during a bullish phase in the stock markets. And penny stocks with little or no fundamental value should be avoided.

Rabindra Bhattarai (2005) *"Define Your Objective before Buying Stocks*." People invest in the share market for different purposes. If someone if not clear about his/her purpose, the strategy followed can be wrong and the benefits are not satisfactory, or there she/he may even occur a loss. So, define your objectives first and then start paling with the market. Some possible objectives would be to maximize divided income, to maximize capital gain in the short run, to maximize total gain and to minimize the risk. A proper setting of objectives helps to identify the category of shares that help to accomplish the set objectives. If we observe stock market regularly, we find various patterns of movement in different stocks. Thus setting clearly defined objectives will help to gain from such movements.

People invest in the share market for different purposes. If someone if not clear about his/her purpose, the strategy followed can be wrong and the benefits are not satisfactory, or there she/he may even occur a loss. So define your objectives first and then start paling with the market. Some possible objectives would beta maximize dividend income, to maximize capital gain in the short run, to maximize total gain and to minimize the risk. A proper setting of objectives helps to identify the category of shares that help to accomplish the set objectives. If we observe stock market regularly, we find various patterns of movement in different stocks. Thus setting clearly defined objectives will help to gain from such movements. But for those investors, who want to maximize their return by capital gain in the short run, it is better to avoid investing in shares of finance companies and insurance companies because their share price is found to fluctuate less as

compared to the banks. In the case of stocks that do not fluctuate much, it will be difficult to cover the transaction costs. Capturing a capital gain in a short run requires a selection of highly fluctuating companies or newly listed companies. The present examples of such companies are BOK, Lumbini Bank Ltd. (LBL), Machhapuchre Bank Ltd. (MBL), Nepal Bangladesh Bank Ltd. (NBBL) and Nepal Commerce and Credit Bank Ltd (NCCBL).

The next fundamental objective of buying shares is for the purposes of borrowing. Investors can borrow money by using shares as collateral. Banks and finance companies provide loans up to 50 percent of the market price of the shares. To borrow in this way, you should have those securities that promise more certain return as well as growth. Such stocks are those of Standard Chartered Bank Nepal Ltd., Nabil Bank Ltd., Bishal Bazaar Company Ltd, Unilever Nepal Ltd. and Nepal Investment Bank Ltd. Therefore, it is better to buy these high priced stocks if you intend to borrow by pleading them. Such borrowings can be used to buy more stocks and the selection of such stock will again depend on the purpose for which you want to buy them. It the objective is to minimize the risk, investors require selecting stocks that remain less fluctuating in the market. For example, Bishal Bazaar Company Ltd., Bottlers Nepal Ltd., Rastriya Beema Sansthan and Unilever Nepal Ltd. are found to be such stocks.

Bijay Nath Gautam (2008) *"How to Start in Stock Market"* Nowadays people are interested in buying shares from the secondary market (Nepal Stock Exchange) as they are searching for good investment avenues when the interest rates offered by the commercial banks on the deposits have fallen to record low. Here is some advice to buyers who are new to it, are not investing a huge amount and whose motive is to make some monetary gains out of the shares only (as dividend and capital gain) rather than holding in influential stake in the company. In this issue the advice is for decisions while buying stocks. Making a decision before buying a

share without proper knowledge about the particular company is like plunging head on into an unknown pond. Before diving into a pond, one should have sufficient information about its depth, the contents at the bottom and some other related matter. Similarly, a person wanting to buy shares of any company must have sufficient knowledge about different aspects of that company and among those, the financial aspects is most important. If a decision is made without proper knowledge of various facts affecting the market value and profitability of the stock concerned, it may result in heavy loss.

These advices are especially for those buyers who do not intend to hold the shares for long period or buy shares in huge quality with motive of influencing future decisions of that company. The main interest of such people is to maximize their profits in a reasonably short period. Such interest may be to take advantage from rising market price, to add the stock of shares on holds incurring minimum extra costs, to gain maximum in terms of dividend and so on. Similarly, minimizing the probable financial loss from the stock purchased should always be given top priority. For this, the financial statements, especially annual report submitted in the annual general meeting of the company, should be studied and analyzed seriously. Apart from this report, the future programs of the management and the history of the company should also be studied. If possible the buyers should develop the habit of studying the quarterly financial reports too and compare such reports of one company with that of another similar company. Finance companies or banks publish their financial reports very three or six months in the national dailies. Such reports can also be obtained from the company's corporate office.

Looking at the trend of our share market, it is recommended that new investors choose shares only from the banking or finance sectors initially because such shares can be more easily sold and involve less risk compared to shares from manufacturing or other sectors. When one has gained some experience in buying

and selling such shares and does a lot of homework, he/she can gain sufficient knack for future transactions. If possible, it is advisable to record the homework before deciding to choose a particular stock, such as why it was chose what the estimated profit from that choice was and what the actual result was periodically. If the estimate is nearer to the actual result, congratulate yourself, and if it very far from the actual result, try to find out what may have been the cause behind it. In this way, one will gradually gain experience, and will not be easily fooled in future.

Generally it is safe to purchase shares when the price is going up gradually. But one should be very careful as no one knows when this trend stops. Furthermore, there are always some players who try to mislead the general public and manipulate the price of shares for their personal benefit. One should be careful about such possibilities and try to find out if this is the case with the stock in which the market price is steadily increasing or decreasing. Choosing a bank or finance company to invest is however a tough job, it demands a lot of homework and an analysis of various facts affecting the probability and market price of share concerned. For this, the interested persons should be quite familiar with some frequently used terminology in financial reports and the way to analyze them properly and to interpret what the results indicate and where those reports are found.

2.3 Review of Thesis

There are many masters degree thesis prepared by various researchers. Among them some thesis are reviewed here for analysis of literature.

Shrestha (1999) has conducted a study on *"Stock Price Behavior in Nepal"*. This study aims to examine the efficiency of stock market in Nepal. The objective of the study was:

- To examine the serial correlation of successive daily price changes of the individual stocks.
- To determine whether the sequence of price changes is consistent with changes of the series of random numbers expected under the dependent Bernoulli process.
- To determine the efficiency of the stock market through the theoretical model of efficient market hypothesis in Nepalese stock market.
- To provide feedback policy towards institutional development of efficient market.

He used the data considering the daily closing price of 30 listed companies' shares (ordinary) in the NEPSE. His study period was consists of almost hour and half years. He used the as serial correlation test and run test as Test Methodology. Serial correlation Test: He applied serial correlation to test the stock price behavior of Nepal Stock Exchange by giving sight in whether the price changes of shares are independent to each other. For this purpose he computed the serial correlation of 1-15 days applying the natural logarithm model for daily price changes.

Run Test: he also, in order to test independence of stock prices, applied runs test. He analyzed runs by total numbers of expected runs and runs signs.

Following are his major study results:

After applying the required models and methodologies he found average correlation coefficient of 0.2055, 0.0825, and 0.0704 for 1, 2, and 3 lag days respectively. And for lags 5 to 15 days were less than 0.007 in overall, large number of serial correlation coefficients of the log price changes of the 30 stocks for the sample periods are significantly departed from zero. In addition runs analysis also followed the serial correlation results that mean there has significant

difference between actual numbers of runs for series of daily closing prices changes of market. By the result of his applied models and methodologies he concluded, the successive price changes are not independent random variable for the 30 sample stocks listed in the NEPSE. Therefore, the random walk theory is not suitable description for the stock market behavior in Nepal.

By the study of Shrestha, large number of serial correlation coefficients of the log price changes of the 30 stocks for the sample periods is significantly departed from zero. In addition runs analysis also followed the serial correlation result that means there has significant difference between actual numbers of runs for series of daily closing prices changes of the market. In the study Mr. Shrestha has applied for technical analysis only to get the result of share price behavior and has not used any fundamental tools for analysis.

Form the above all studies conducted by various researchers, it seems that Nepalese stock market is still in developing stage and it is facing various challenges. Furthermore it also shows that there are few search works conducted about the market price behavior on the stock market. Most of the above stated studies use technical methods and statistical methods like run test, correlation coefficient, NEPSE trend etc. for the analysis purpose. Only few of the studies use fundamental analysis tools for the research work. More than that of none of the studies uses fundamental analysis tool for the research work. More than that none of the studies are concerned about the financial indicators like EPS, DPS and NWPS which are the most influencing factors for the MPS. So, this study tries to analyze the relationship of these factors with the pricing behavior of the stock of the selected companies as well as it also tries to show the influence of the important events happened in the country on market price of the stock.

Ojha (2000) has conducted a study on *"Financial Performance and Common stock pricing"* has the following objectives:

- To study and examine the difference of financial performance and stock price.
- To examine the relationship of dividend and stock price.
- To explore the signaling effect on stock price,

Following are his major study results:

- Nepalese stock market is in infancy stage. In general it is very new and just started to develop.
- Dominance of banking sector is prevalent in the market due to other industries including finance companies, insurance and manufacturing is not encouraging.
- Due to the lack of proper investment opportunity most of the investors have directed their savings towards the secondary market.
- Corporate firm with long history have a relatively stable profitability parameters than the firm established after the economize liberation of 1990.
- Older firms have been issuing bonus share more times than the new one.
- Dividend per share is relatively more stable than dividend payout ration. That's why pay out ration and dividend yield has been highly fluctuating.
- There is significant positive correlation between the dividend the dividend paid and stock prices of banking and manufacturing industries. All other industries have not the perfect correlation between the dividends paid and stock prices.

Ojha conducted a study on Nepalese stock market is in developing stage. Corporate firms with long history have relatively stable profitable parameters than that of newly established firms. Similarly dividend payout ration and dividend

yield is more fluctuating and there is positive relationship between dividend and stock price of the firms. However, it may be affected due to the change in time period and other constraints at present.

Dahal *(2002)* has conducted a research paper on *"Stock Market Behavior of listed Joint Venture Company"* in Nepal describes the Nepalese Stock Market as follows:

The main objective of his research study is to study, examine and analyze the stock market behavior. The specific objectives are:

- To study and analyze the stock price trend and volume of the stock traded on the secondary market.
- To study and analyze the rate of listing of new companies and maintenance of listed company in Nepal Stock Exchange Limited.
- To study and analyze the investors views regarding the decision on stock investment.
- To study and examine the signaling factors' impact on stock price with the help of NEPSE index.
- To suggest the abstract to the interested parties related to stock market.

In his conclusion, Mr. Dahal says that stock market is the backbone of investment sector of the country. So by promoting the stock market in sizeable economic sector raise the economic development by mobilizing swing into productive sectors making suitable investment environment different elements like price trend NEPSE index, volume of stock traded, rate of listing. Signaling factors should be analyzed. Stock market was not properly analyzed for smooth operation of secondary market. It shows gap between theory and practice of investment. In Nepalese stock market the study of market behavior is very useful subject matter if properly analyzes for the development of stock market.

Nepal stock exchange limited is analyzing stock market behavior in very little area regarding the stock market. So experts should be recruited and analyzed market behavior in efficient way so that all parties interested with stock market can get benefit from this. The data analysis showed that Nepal Stock Exchange is not providing facilities for investors such as general awareness about investment, investment procedure for general public and movement of stock trend in different periods and their cause are not explained. Most of the investors are complaining that the market makers brokers and NEPSE's staffs are making coalition for fraudulent activities towards investors. So NEPSE should clear this type of charge for the development of stock market.

The role of market players in the market should be made effective in promoting capital market in the country by giving proper training and adopting changes environment with modern tools and technique. Investment is lifeblood of economic development. It is evident that stock exchange will continue to fulfill their vital functions in the national economy. So long as private enterprises exists, we know that the stock exchange is the place where stock and shares are bought and sold. The substantial completion in innumerable buyer and seller determines the prices with a measure of precision that cannot be obtained in other unorganized market. So, stock market is the proper market for the development of national economy. The development of stock market in Nepal is both challenging and difficult. Though the viewpoint of share transition, public interest towards stock market, the trend of the price movement, information system etc. indicates the low performance of the stock market. The problem like lack of strong professional analysis, independent buyer and seller, well trained manpower and management delay in transfer of shares, rational investor exist form the Nepalese stock market. Moreover, there is much other attraction that stock market able to attract the new generation towards it. Stock market will be strong market for the unemployed young generation to build their career in capital market; i.e. it has lots

of prospects of development. From Dahal's study if seems that no comprehensive research has been conducted in relation to the development of stock market in Nepal, major problems facing by Nepalese stock market and expectation of future growth. Thus, the stock market further requires timely research to explore details of the problems and prospects of stock market in Nepal.

Manandhar (2003) has conducted a study on *"Analysis of Risk and Return Analysis on Common Stock Investment"* with special reference to five listed commercial banks. The main objective of the study is to examine risk and return of common stock in Nepalese stock market, the study is focused on the common stock of commercial banks.

In her findings "Banking industry is the biggest one in F/Y 2057/058 in terms of capital market capitalization and turnover expected return of the common stock of BOKL is maximum (i.e. 1.1267) due to effect of unrealistic annual return and capital structure of NIBL is found minimum. In the context of industries, expected return on banking sector (i.e. 67.39) is highest and other sector is the least (0.65%). Expected NIBL, other banks common stocks are more volatile (aggressive with market stocks). All banks in the study are said to be under priced. Capital structure of BOKL is mostly risky and capital structure is least risky.

Following are her major study results**:**

- Stocks have greater volatility risk than other investment, which take a random and unpredictable path. Stock market is risky in the short term and it is necessary to prepare the investors for it.
- One of the most important things to consider when choosing investment strength is the balance between risk and return that you are comfortable with.
- Investors should diversify their funds to reduce risk with the help of optimal portfolio concept.

- It is better to say something that is going up and sell something that is going down.
- Investor's attitude, perception and risk handling capacity also play essential role is rational investment decision.

Khadka (2004) has conducted a study on *"Analysis of Risk and Return on Selected Nepalese Commercial Banks listed on NEPSE"* with special reference to 7 listed commercial banks is also relevant to this study. The main objective of the study is to analyze the risk, return and other relevant variables that help in making decision about investment on securities of the listed commercial banks. This study will also target to determine whether the share of commercial banks are correctly priced or not by analyzing the required rate of return using the CAPM. Khadka addressed the following findings in the risk return behavior from the analysis of different stock.

The share of Bangladesh Bank offered highest realized rate of return. Amongst them NABIL bank is the lowest having 5.23% which is less than required rate of return. NBL, which is hard hit by the events (Return = -0.8809), the ranking of the bank is placed as the highest return earner. The study showed that the realized rate of returns of the samples banks do not have the some features being with in the range of 5.23% to 16.12% Return on the average stock is 5.51% over the period. All the shares under review generated higher rate of return the market portfolio except NABIL Bank Ltd. The price of shares of banks under review except NABIL Bank Ltd. are under priced. The systematic risk of NBL is the highest one amongst the shares under review which is 95.59% and SCB of Nepal has the lowest one being 45.14%. The negative correlation coefficient of NBL (-0.21) revealed that the return on the bank goes down if the market goes up. The rest of the shares moved in the direction the market moves. By observing the individual shares beta coefficient, most of the shares appear to be defensive as beta

coefficient are less than one. However, beta of the stocks NB bank SCB are greater than one indicating that the shares are more riskier than the market.

On the basis of finding, Khadka concluded that in Nepalese Capital market, the contribution of real sector is negligible. Though the shares of commercial banks of Nepal are heavily traded in NEPSE, none of the share NABIL bank will have positive trend towards the equilibrium.

He outlined following Recommendations:

- Adoption of comprehensive and Advance Regulatory framework.
- Awareness campaign for the investor.
- Regular publication of financial information.
- Improvement in the infrastructure facilities.
- Effective use of banking system.
- Deregulation of foreign exchange.

Manandhar (2005) has conducted a study on "A Study of Risk and Return Analysis on Common Stock Investment" with special reference to six listed commercial banks.

The main objective of the study is to evaluate common stock of listed commercial bank in terms of risk and return and to perform sector wise comparison on the basis of market capitalization, to identify whether the share of commercial banks are overpriced, underpriced or at equilibrium price, to identify the correlation between returns of commercial banks, and to construct optimum portfolio from listed common stock.

Following are his major study results:

- The return is the income received on a stock investment, which is usually expressed in percentage. Expected return on the common stock of EBL is

maximum (44.44%) which is very high rate of return. In reality this rate exists only due to effect of unrealistic annual return because of the issues of banks share and increase in share price. Similarly expected return of the CS of NIB is found minimum (24.21%).

- Risk is the variability of return which is measured in terms of standard deviation on the basis of S.D. common stock of NSBI is most risky since it had high S.D. and C.S. of NIBL is least risky because of its lowest S.D. on the other hand, we know that coefficient of variation is more rational basis of investment decision which measures the risk per unit of return on the basis of CV; CS of NIBL is the best among all banks. NIBL has 1.4977 unit of risk per 1 unit of return. But CS of SBI has the highest risk per unit return i.e. 3.5495.
- Diversification of fund by making a portfolio can reduce unsystematic risk of individual security significantly. If investors select the securities for investment, which have highly negative correlation of returns, the risk can be returns of two stocks in highly positive, risk reduction is not so significant. So portfolio between the C.S. of same industry cannot reduce risk properly. In this study, SBI and EBL have negative correlation between their returns, which is favorable with the viewpoint of the diversification. And all other banks have positive correlation among their returns. So the portfolio construction among their returns. So the portfolio construction of common stock of these banks will not completely reduce any risk, which is not favorable as portfolio construction is concerned.

Oli (2006) has conducted a study on entitled *"Stock Market Behavior in Nepal"* gives some important insight into the Nepalese stock market.

Following are his major study results:

- To identify the trend and development of stock market and economic growth.

- To assess the relationship of stock market indicators with different macroeconomic indicators.
- To recognize the affect of factors of macro environment (cultural and political) upon stock market with the degree and significance.

Mainly findings of this study were as follows:

- Since the ratio of market capitalization to GDP very low for the period, stock market size is not yet sufficient to show its impact on nation's economy. On the other, trend of turnover ratio and value of share traded to GDP ratio show that stock market in Nepal is very small relative to its economy, and stock market in Nepal is yet to make its presence felt in the national economy.
- Nepalese stock market is highly dominated by the largest companies in terms of turnover, as the concentration ratio is very high.
- Stock volatility as measured by twelve month rolling standard deviation and stock volatility ratio give the basis to conclude the inability of Nepalese stock market to handle risk relatively to volume of stock in Nepal. It is interesting to note that none of these indicators viz. capitalization ratio to volatility ratio reveals a consistent trend, indicating that the development of stock market in Nepal lacks a definite direction and is not guided by clear cut policies and action, due to low volume of shares traded and wide fluctuation the stock market in Nepal has been highly illiquid and volatile.
- Nepalese stock market cannot handled large volume of tracing with less price swings. As there are very week positive relationship is observed in Nepalses stock market between volatility and value of shares traded.
- Numbers of listed companies have been found to have greater impact upon NEPSE index than value of stock traded and number of stock traded. However NEPSE index is also positively influenced by number of stock traded and value of stock traded.

- NEPSE index remains unaffected by the advent of culture event like Dashain. However it is affected by the political events as the result of two different political events suggested so. On the other way NEPSE index carries the political information but fails to carry the cultural information.

Devkota (2008) has conducted a study on, *"Stock Price Determinants in Nepal Stock Exchange"*, has a major objective of identifying the prime determining factor of share price fluctuation of Nepalese Commercial Banks. The other supporting objectives of his research are:

- To examine and evaluate the relationship between MPS with the various financial indicators like EPS, BPS, DPS etc.
- To analyze the market trends of MPS with financial indicators.
- To conduct the opinion survey of potential investors regarding various aspects of share behaviors in Nepal.

Following are his major study results:

DPS of BOK is much volatile in comparison to MPS, BPS and EPS. Bank of Kathmandu has positive correlation with between their Market price per share and DPS, BPS and EPS. This indicates that they directly affected the Share price of BOK, BPS and EPS are positively correlated in the case of Everest Bank Limited whereas DPS is negatively correlated. This indicates that increase in DPS of this Bank don't contribute on the increase of Share Price rather it decrease it. But increase in BPS and EPS increase the share price and vice versa. DPS is much volatile in comparison with MPS, BPS and EPS. The correlation between MPS and other indicators are found to be insignificant for most of banks. It shows that they individually influence very less but jointly they influence a lot. There can be other factors which influence the share price of the organization.

Dividend pattern plays a great role on share price movement. Higher the DPS, more will be the share price. Most of the investors like to analyses the Dividend pattern of the company before they invest in their shares.

Research Gap

Efficient Securities market is not only the output of interaction of institutions involved and mechanism of process of trading securities. The previous researcher focused only on the risk and return aspects of selected commercial banks from investors perspectives. This research has further tried to identify the correlation among returns of the commercial banks under study which plays a significant role in risk reduction by portfolio construction and systematic and unsystematic risk has been identified for each bank which is not done by previous researchers.

CHAPTER - III
RESEARCH METHODOLOGY

Methodology is the research method to test the hypothesis. Research Methodology is a systematic way to solve the research problems. It describes the methods and process applied in the entire aspects of the study. It refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view (C.R. Kothari, 1994, Research Methodology, Methods and Techniques. New Delhi: Vikash Publication, planets-19). Thus the overall approach to the research is presented in this chapter. This chapter contains the research design, sample size, sample selection procedure, data collection procedure, data processing tool and techniques, variables etc.

The main objective of the study is to analyze the risk and return of common stock investment of listed companies i.e. commercial Banks. Thus this chapter is designed to meet the set objectives. The brief discussion of the methodology followed in the study is given below. This chapter includes the brief description of research design, population and sample, sources of data, data collection instrument and procedures and method and tools used for analyzing the data.

3.1 Research Design

A research design is a plan for the data collection and analysis of data. In other words, it is an integrated frame that guides the researcher in planning and executing the research works. It present a series of guide posts to enable the researcher to progress in the right direction in order to achieve the goal. The present study is basically related with the Nepalese stock market and share price behavior of the selected listed companies. The study will explore the collection of

data, compilation and tabulation of data, computation of compiled data and financial parameters, findings, conclusions and recommendations.

3.2 Population and Sample

The large group about which the generalization is made is called the population under study. Because of the large group size, it is fairly difficult to collect details information from each member of population. Rather than collecting detail information each number, the small portion is chosen as representation of the population is called the sample.

List of Commercial Banks

S.N.	Name of Banks	Operation Date(A.D.)	Head Office	Telephone No.
1	Nepal Bank Limited	1937/11/15	Dharmapath, Kathmandu	014221185
2	Rastriya Banijya Bank	1966/01/23	Singh Darbar, Kathmandu	014246022
3	Nabil Bank Limited	1984/07/16	Kantipath, Kathmandu	014429546
4	Nepal Investment Bank	1986/02/07	Darbarmarg, Kathmandu	044228229
5	Standard Chartered Bank Nepal Ltd.	1987/01/30	Naya Baneshwor, Kathmandu	014781469
6	Himalayan Bank Ltd.	1993/01/18	Thamel, Kathmandu	014227749
7	Nepal SBI Bank Ltd.	1993/07/07	Hattishar, Kathmandu	014435516
8	Nepal Bangladesh Bank Ltd.	1993/06/05	Naya Baneshwor, Kathmandu	014783972
9	Everest Bank Ltd.	1994/10/18	Lazimpat, Kathmandu	014443377
10	Bank of Kathmandu Ltd.	1995/03/12	Kamaladi, Kathmandu	014414541
11	Nepal Credit and Commerce Bank Ltd.	1996/10/14	Siddarthanagar, Rupandehi	071521921
12	Lumbini Bank Ltd.	1998/07/17	Narayanghadh, Chitwan	056524150
13	Nepal Industrial and Commercial Bank Ltd.	1998/07/21	Biratnagar, Morang	021521921
14	Mchhapuchhre Bank Ltd.	2000/10/03	Prithivichowk, Pokhara	061-5300900
15	Kumari Bank Ltd.	2001/04/03	Putalisadak, Kathmandu	014232112
16	Laxmi Bank Ltd.	2002/04/03	Adarshanagar, Birgung	011663425
17	Siddhartha Bank Ltd.	2002/12/24	Kamaladi, Kathmandu	014442919
18	Agriculture Development Bank	2006/03/16	Ramshahpath, Kathmandu	014252358
19	Global Bank Ltd.	2007/01/02	Birgung, Parsa	014231198
20	Citizens Bank International Ltd.	2007/06/21	Kamaladi, Kathmandu	014262699
21	Prime Commercial Bank Ltd.	2007/09/24	New Road, Kathmandu	014233388
22	Sunrise Bank Ltd.	2007/10/12	Gairidhara Crossing, Kathmandu	014420612
23	Bank of Asia Nepal Ltd.	2007/10/12	Tripureshwor, Kathmandu	014263212
24	Development Credit Bank Ltd.	2001/01/23	Kamaladi, Kathmandu	014231120
25	NMB Bank Ltd.	1996/11/26	Babarmahal, Kathmandu	014246160
26	Kist Bank Ltd.	2003/02/21	Anamnagar, Kathmandu	014232500
27	Janata Bank Nepal Ltd.	2010		
28	Mega Bank Ltd.	2010		
29	Civil Bank Ltd.	2010		
30	Commerz and Trust Bank Ltd.	2010		

Altogether 30 commercial Banks operating in Nepal are considered to be the total population of the study. Due to lack of time and resource factor, it is not possible to study all of them. Hence, the three commercial banks have been taken as sample which are listed and doing shares transaction in NEPSE from population. The sample selections for this study are:

- **Standard Chartered Bank Nepal Limited**
- **Nabil Bank Limited**
- **Himalayan Bank Limited**

a. Standard Chartered Bank Nepal Limited

The Bank was originally established as a joint venture of Grindlays Bank PLC London and Nepal Bank Limited in 1985 with the shareholding ratio of ANZ Grindlays Bank Limited 50%, Nepal Bank 33.33% and the General public 16.66%. Along with the change of ownership to Standard Chartered, the banking area of SCBNL saw the rise of a new dawn changing the general image of the bank. With this acquisition, Standard Chartered Bank now owns 50% shares of Nepal Grindlays Bank Limited (NGBL) previously owned by ANZ Grindlays. The name of the bank change to Standard Chartered Bank Nepal Limited. With the mission statement "To be the leading international bank in our principal markets", the bank operates through 11 offices, spread throughout Nepal and focuses mainly on corporate, consumer and commercial banking, providing services for international firms, as well. The bank contributed to a large extent in the development of the country by ways of loans to industrial projects, the priority and deprived sectors. Further, it's been a major contributor to the government offices as the highest private corporate taxpayer in the Nepal.

b. Nabil Bank Limited

Nabil Bank Limited was established on July 12th, 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 the kingdom of Nepal sharing 50% is owned by N.B. International Limited, Ireland, sharing by 20% from financial institution on Nepal and sharing by 30% from general people. After 11 years of active participation, Emirates Bank International Limited (EBI) divested its 50% share holding in Nabil to National Bank limited, Dhaka, Bangladesh. EBI's decision to divest this investment was influence by restructuring their own worldwide activities and strategy to concentrate only on United Arab Emirates and Pakistan with increased economic co-operation under the SAARC frame work particularly in the field of trade and commerce and induction of SAPTA agreement, the participation of National Bank Limited of Bangladesh in Nepal, Seemed to be most timely. However, the Board of Directors had decided to release the technical assistance contract with National Bank Limited, Dhaka, Bangladesh in May 2001 in a view to that the management of the Nabil Bank Limited could be handled by the Nepalese employees. Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, Nabil provides a full range of commercial banking services through its 28 points of representation across the kingdom and over 170 reputed correspondent banks across the globe. Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. Operations of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes ATMs, credit cards, state-of-art, world renowned

software from Infosys Technologies System, Banglore, India, Internet banking system and Tele-banking system.

The bank has focused to improved its operational efficiency by upgrading the information capability. Among the many 'firsts' to credit of Nabil, the business of Credit Cards Issuance and Acquiring is one. It introduced Master Card to the Nepalese Rupees and US Dollar and also issues Visa Card and Visa Electron. Nabil has been introducing and expanding a number of IT based products. During the review period, Nabil geared itself up and started to acquire smart cards. Similarly, Nabil launched 'Nabil prepaid' and 'Nabil Kool Cash', two convenient prepaid card products. Growing Network ATM facilities are available to account holders. Debit Cards with PIN numbers are issued to enable customers to available of 24 hour ATM facility. Nabil is the sole principal Agent Bank in Nepal of Western Union Financial Services and facilities transfer of funds, through an on-line computer system, instantly to or from more than 170,000 locations in 196 countries and territories.

c. Himalayan Bank Limited

Himalayan Bank limited was established in 1991 in joint venture with Habib Bank Limited of Pakistan, the fourth joint venture bank in Nepal. Unlike the banks previously mentioned, the shareholding pattern of the foreign counter part is only 20% where as the remaining part is financed by promoter group 51% Nepalese financial institute 14% and general public 15%. Himalayan Bank Limited was incorporated in 1992 by the distinguished business personalities of Nepal in partnership with employee’s provident fund and Habib Bank Limited of Pakistan. Bank operation was commenced from January 1993. It is the first commercial bank of Nepal with maximum number of share holding by the Nepalese private sector. Besides commercial activities, the bank also offers industrial and merchant banking. Product such as premium savings account, HBL proprietary card and

millionaire deposit scheme besides services such as ATMs and Tele banking where first introduce by HBL. At present, the bank has 23 branches working around the country. The bank has a very aggressive plan of establishing more branches in different parts of the kingdom in near future. The bank provides services like 'Any Branch Banking Facility', Internet Banking and SME Banking. Living up to the expectations and aspirations of the customers and other stakeholders of being innovative, HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Prepaid Visa Card, International Travel Quota credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. Himalayan Bank's policy is to extend quality and personalized services to its customers as promptly as possible. To extend more efficient services to its customers, Himalayan Bank is committed to be a "BANK WITH A DIFFERENCE".

This study will try to explore the objectives set in the previous section and it is also expected that this study will help in analyzing the stock market scenario. This study is aimed at producing tested affected of historical information on future price movements of the commercial banks' stocks.

Due to low volume of share transaction and insufficient data, other sectors like Manufacturing sector, service sector, insurance sector and other sectors have been omitted while taking the sampling companies from listed companies in NEPSE.

3.3 Sources of Data

The main source for data collection was from the office of Nepal Stock Exchange (NEPSE), Singhadurbar, Securities Board of Nepal (SEBON), Gausala as well as economic survey published by Ministry of Finance and Nepal Rastra Bank. The main source of data is annual reports of the SEBON and trading report of NEPSE.

Besides annual report, various bulletins available, journals, articles and other publications published by different financial institutions and other useful resources are also taken into consideration. The study is based on the secondary sources of the data. The secondary source of data is the annual report of selected respective companies and security Board of Nepal, different books from library, periodicals, newspaper cuttings company's magazines etc. related unpublished master degree thesis has also taken for the purpose of study. Significant and necessary information has also been collected from internet and various websites.

3.4 Data Collection Procedure

As a study is based on primary and secondary data, primary data has been collected through questionnaire distributed to the respondents and the response has been collected from the respondents duly filled and for secondary data, information is collected through the annual reports of selected companies and Securities Board of Nepal (SEBON), trading report published by NEPSE, Economic survey, published by ministry of finance and different monthly, quarterly, half yearly and yearly bulletins published by Nepal Rastra Bank.

3.5 Data Processing Procedure

Data collected from primary and secondary sources were analyzed through various statistical and financial tools as follows.

a. Financial Tools

Financial tools are used for the analysis and interpretation of financial data. These tools can be used to get précis knowledge of a business, which are fruitful in exploring the strength and weakness of the financial aspects and strategies. Under the financial tools following ratios have been calculated:

(i) Earnings Per Share (EPS)

EPS ratio is used to measure the profitability of a firm from the owner's viewpoint. The market value of share of a company is dependent on the earnings of the company. EPS also measures the return of each equity shareholder. It can be calculated by dividing the net profit after tax by the total number of the common shares outstanding. It reveals the earning power of each share over the period basically on one year. It is calculated as under:

$$\text{EPS} = \frac{Net\ \text{Pr}ofit\ aftertax}{Number\ of\ common\ share\ outs\text{tan}ding}$$

(ii) Dividend Per Share (DPS)

Dividend refers the percentage of earnings paid in cash to its stockholders. "As long as there are investment projects with returns exceeding those that are required, it will use retained earnings and the amount of senior firm has retained earnings left over after financing all acceptable investment opportunities, these earnings then would be distributed to stockholders in the form of cash dividends, if not there would no dividends" (Van Horne, 1990:328). People make investment in stock because they will get dividend in return. Therefore, the price they are willing to pay will depend on their expectations of dividends. DPS is the net distributed profit belonging to the shareholders divided by the number of ordinary shares outstanding. It measures the financial performance of the company. It is calculated as under:

$$\text{DPS} = \frac{Amount\ paid\ to\ equity\ shareholders}{Number\ of\ common\ share\ outs\text{tan}ding}$$

(iii) Expected Rate of Return

The expected rate of return is computed in the base of the expected cash receipts over the holding period and the expected ending or selling price (J. Fred Weston &

Brigham; 1990:146). The expected return on an investment is the mean value of the summation of the possibility distribution of its possible returns (John M. Chenny and Eward A. Moses, 1992:34). It can be expressed as an equation.

$$\sum(r_t) = \sum_{t=1}^{n} p_t r_t$$

Where,

p_t = Probability of the return for that event

r_t = Possible returns of each event

n = Number of observations or returns.

t = difference

In case of single holding period, the expected rate of return can be computed by cash dividends paid during the together with an appreciation in market price, or capital gain realized at the end of the year.

$$\text{Single Period Return (r)} = \frac{Dividend + (Ending\ Price - Begnning\ Price)}{Begnning\ Price}$$

Here, ending price and beginning price indicates the cost of investment and the return realizes from that investment at the end of holding period. The nature of investment should be in revenue type of expenditure. The investors expect a regular payment of dividends over the Holding period with less chance of risk and price variations. The high expected rate of return is appreciated by investors to invest such type of business and vice versa. Therefore, the investor decisions are larger influenced by the nature of investors.

(iv) Standard Deviation

Standard deviation, usually denoted by the letter δ (small sigma) of the Greek alphabet, which was first suggested by Karl Pearson as a member of dispersion in

1893. It is quantitative measure of total risk of assets. It provides more information about the risk of the asset. The standard deviation of a distribution is the square root of the variance of returns around the mean. The following formula is applied to calculate the standard deviation, using historical returns:

$$\delta_j = \sqrt{\frac{\sum \left(R_j - \overline{R_j}\right)^2}{n}}$$

Where,

$\delta_j = S\tan dard\ \ Deviation of\ stock\ j$

$R_j = \mathrm{Re}\, alized\ rate of\ return at a time$

$\overline{R}_j = Expected\ realized\ rate of\ return$

n = number of observation in sample.

(v) Coefficient of Variation

The relative measure of dispersion based on the standard deviation is known as the coefficient of standard deviation. The coefficient of dispersion based on standard deviation multiplies by 100 is known as the coefficient of variation (CV). It is suitable for comparing the variability, homogeneity or uniformity of two or more distributions. A distribution having less CV is said to be less variability or more uniformity homogeneity, consistency etc. and vice versa. The risk per unit of expected return can be measured by coefficient of variation, which is computed as follows:

$$CV = \frac{\delta_j}{\overline{R_j}} X\, 100$$

Where,

CV = Coefficient of variation

$\overline{R_j}$ = expected realized rate of return

$\delta_j = S\tan dard\ \ Deviation of\ stock\ j$

(vi) Beta Coefficient

Total risk of stock consists two parts of risks; one is systematic (market risk) and other is unsystematic (unique risk) and commonly denoted by standard deviation (δ). Statistically, systematic risk and unsystematic risk can be measured by coefficient of determination or beta coefficient and by subtracting the systematic risk through 1 respectively. Less standard deviation and beta coefficient indicate less risk and vice versa. If beta is larger than one, then the assets is considered defensive assets as its price fluctuations are less than market. On the other hand, if the beta is equal to one, then the assets is said to average as its price moves proportionate to the market changes. So, these are applied to each sample commercial banks for testing and categorizing the form of stock relation to risk. Beta coefficient is computed by:

$$\beta_j = \frac{Co\,\text{var}\,iance\left(R_j, R_m\right)}{\delta m^2}$$

Where,

β_j = beta coefficient of stock

Covariance $\left(R_{j,} R_m\right)$ = Covariance of the returns of stock j and market.

δm^2 = variance of the market

(vii) Required Rate of Return

Required rate of return is calculated as the risk free plus the risk premium on the risk of the particular stock, Total risk contains two parts diversifiable or systematic risk and under the assumption of CAPM, investors are not compensated for total risk, rather they are compensated in the market for facing the systematic risk. According to the CAPM the required rate of return on any stock is equal to the risk free rate of return plus market premium times stock beta.

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

Where,

R_j = required rate of return on stock j

R_f = risk free rate of return

$E(R_m)$ = market return or average return

B_j = beta coefficient of stock j

(viii) Market Return {E (R_m)}

Market return is average return of the stock of all companies in an industry. For this research purpose, market return has been calculated by dividing the difference of this year's market index and previous year's market index. Hence,

$$E(R_m) = \frac{This\ year's\ market\ index - Last\ year's\ market\ index}{Last\ year's\ market\ index}$$

(ix) Portfolio Risk and Return

Portfolio is combination of individual or group of assets. Investors have different types of investment opportunity but they have limited resource for investment so that investors have to choose that investment opportunity which maximizes return for a given level of risk or minimize risk for a given level of return. Thus the combination of these investments is called portfolios.

Portfolio Return

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

$$E(R_P) = W_i E(R_i) + w_j E(R_j)$$

Where,

$E(R_P)$ = Expected return on portfolio.

W_i = Proportion of wealth invested in i assets.

W_j = Proportion of wealth invested in j assets.

$E(R_i)$ = Expected return on i assets.

$E(R_j)$ = Expected return on j assets.

Portfolio Risk

It is the combined standard deviation of individual stock return. It is the risk of individual securities plus covariance between the securities. It can be written as:

$$\delta_p = \sqrt{\delta_i{}^2 W_i{}^2 + \delta_j{}^2 W_j{}^2 + 2W_i W_j COV(R_i, R_j)}$$

Where,

δ_p = Standard deviation of stock i & j

W_i = Proportion of assets i.

W_j = Proportion of assets j.

$\delta_i{}^2$ = Variance of assets i.

$\delta_j{}^2$ = Variance of assets j.

$COV(R_i, R_j)$ = Covariance between the return of assets i and j

(x) Risk Minimizing Portfolio

It is the ratio of stock that will minimize the possible unsystematic risk. The risk minimization portfolio is calculated by using following formula.

$$W_A = \frac{\delta^2{}_B - Cov(R_A.R_B)}{\delta^2{}_A + \delta^2{}_B - Cov(R_A.R_B)}$$

Where,

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

$W_A + W_B = 1$, $W_B = 1 - W_A$

CHAPTER - IV
DATA PRESENTATION AND ANALYSIS

The chapter data presentation and analysis is the main body of the study. The purpose of this chapter is to analyze and elucidate the collected data to achieve the objective of the study following conversion of unprocessed data to an understandable presentation. On the background of various reading and literature review in the preceding chapter, it is tried to analyze and diagnose the recent Nepal Stock Market movement, with taking a special reference with commercial banks of Nepal. In this course of analysis, data gathered from various sources have been inserted in the tabular form and shown in diagram form. The data have been summarized in appropriated tables. The samples of computation of each model have been included in annexes. Among the listed commercial banks only three commercial banks taken as sample namely.

- Standard Chartered Bank Nepal Limited
- Nabil Bank Limited
- Himalayan Bank Limited

4.1 A Glimpse of Stock Market Trading

The main purpose of this section is to simply provide quantitative information of stock market functioning. The organized stock market is a recent phenomenon in Nepal. NEPSE has adopted an “Open-Out-Cry” system. It means transactions of securities are conducted on the open auction principle in the trading floor. The buying broker with the lowest offer will post the price and code number on the selling column on the quotation board. The buying price will change when any other broker increases it and the selling price will change when someone will be

ready to sell at low price. When the price matches the buying broker declares the quantity and the selling broker either accepts it or announces the quality.

4.2 Behavior of NEPSE Index

Market index has always been of great importance in the world of security analysis and portfolio management. This index is used as a benchmark by the individual and institutional investor to evaluate the performance of their own or institutional portfolio. Market index are used to determine the relationship between historical price movements and economic variables and to determine the systemic risk for individual securities and portfolios. The index can also be used as measuring tool whether the performance of stock market is good or not. This clearly focuses on the price of stocks that is increasing or decreasing in the market. Higher the index means the better performance of stock market and vice versa.

Table 4.1

Monthly Closing NEPSE Index (Fiscal Year 2008/09)

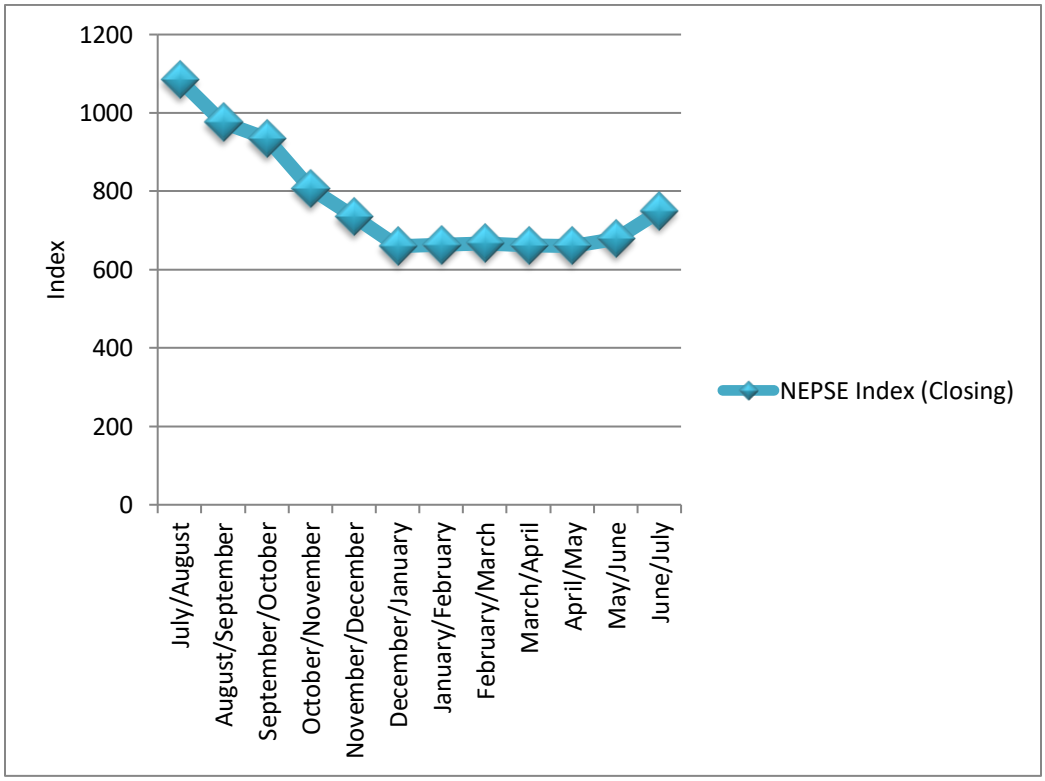
Month	NEPSE Index (Closing)
July/August	1084.76
August/September	976.01
September/October	933.97
October/November	806.90
November/December	734.85
December/January	659.81
January/February	663.52
February/March	667.20
March/April	661.27
April/May	660.96
May/June	678.74
June/July	749.10

Source: Annual Report of NEPSE, 2009

From the above table it is clear that NEPSE index is decreasing trend, the end of this fiscal year, NEPSE index decrease by 214.26 points closed at 749.10 points. NEPSE index at the end of the last fiscal year was 963.36 points. During this fiscal year the highest points of NEPSE index was 1084.76 points recorded in the month July/August, while the lowest points was 659.81 points recorded on December/January. The monthly trend of NEPSE index is presented in below chart.

Figure 4.1

Monthly Closing NEPSE Index (Fiscal Year 2008/09)



4.3 NEPSE Market

Expected Return on Market E(Rm) = the market return on the market portfolio of all traded securities. Year ended the NEPSE index is used as the market return into account.

Table 4.2

NEPSE Index & Annual Return

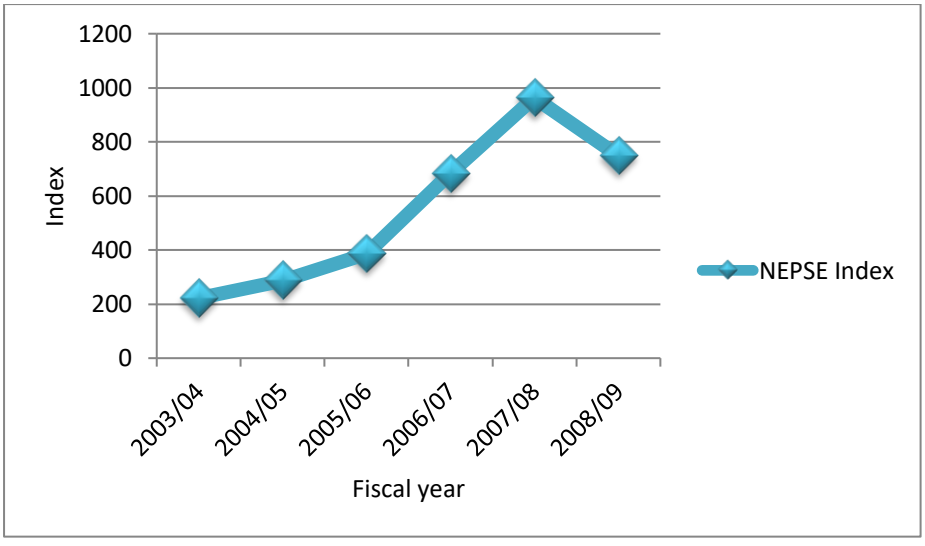
Year	NEPSE Index	Annual Return
2003/04	222.04	-
2004/05	286.67	0.29
2005/06	386.83	0.35
2006/07	683.95	0.77
2007/08	963.36	0.41
2008/09	749.10	-0.22
	Total	1.60

Source: Appendix B(V)

The above table shows that by the end of fiscal year, the price index of the listed securities (NEPSE Index) remained at 749.10 points, which is lower by 214.26 points than that of the last fiscal years' index 963.36 points. In this research fiscal year, the highest index of 963.36 was noted on the fiscal year 2007/08 and the lowest index of 222.04 was noted on the fiscal year 2003/04.

Figure 4.2

NEPSE Index



4.4 Present Situation of Stock Market In Nepal

Out of the 149 listed companies more than 68% of the transaction took place in the stock exchange related to the securities of the commercial banks and financial institution. Present government is taking more seriousness to develop the securities market in the country. Currently, we are operating the exchange through manually basis. There are no custodians. The governmnet has given higher priority to strength the capital market and has launched Corporate Financial Governance Project for the trading automation under the assistance of Asian Development Bank.

4.5 Number of Listed Companies in NEPSE

As concerned with the number of listed companies present in table shows that the rate of listing companies for the fiscal year 2004/2005 is 9.65% which is highest increase rate.

Table 4.3

Number of Listed Company in NEPSE

Year	No. of Listed Company	Percent Change
2003/04	114	-
2004/05	125	9.65%
2005/06	135	8%
2006/07	135	0%
2007/08	142	5.19%
2008/06	149	4.93%

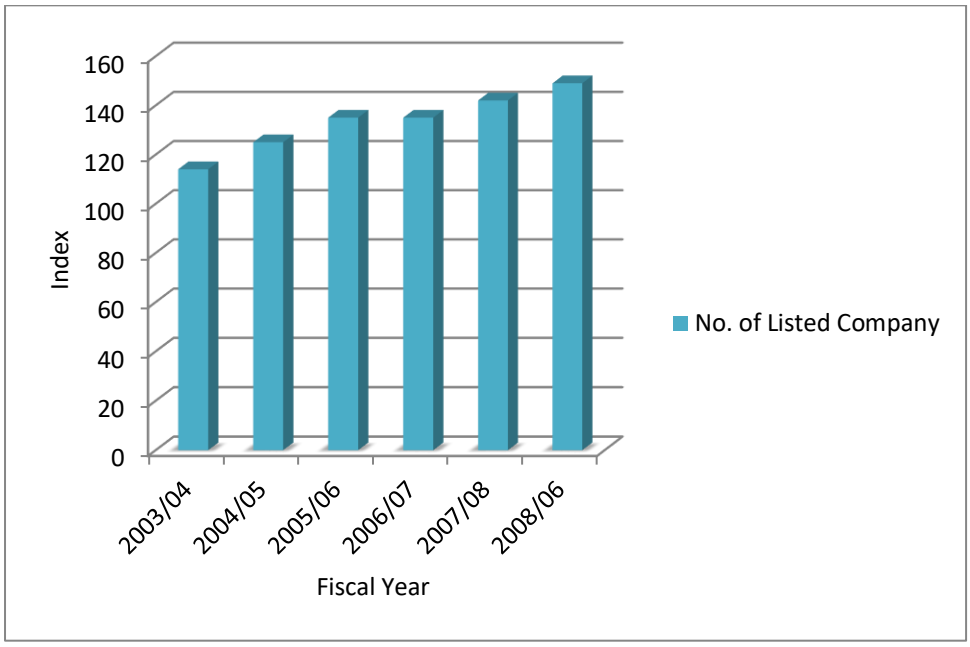
Source: Annual Report of NEPSE, 2009

While taking about in terms of numbers it is 114 for the fiscal year 2003/04. There are increase in number of listed companies for the fiscal year 2004/05 with 9.65%

highest from 5 years, there is no change in fiscal year 2006/07. The number of listed companies increased by 4.93% to 149 points in fiscal year 2008/09 whil this number had increase by 135 in 2006/07 to 142 in fiscal year 2007/08. Increase in the number of listed companies indicates increasing interest of public towards the establishment of companies in the country.

Figure 4.3

Number of Listed Company in NEPSE



4.6 Analysis of Common Stock in Sample Banks

4.6.1 Analysis of Market Price per Share (MPS) of SCBNL, Nabil BL and HBL

Table 4.4

Market Price per Share

(Rs.)

Year	SCBNL	Nabil BL	HBL
2004/05	2345.00	1505.00	920.00
2005/06	3775.00	2240.00	1100.00
2006/07	5900.00	5050.00	1760.00
2007/08	6830.00	5275.00	1980.00
2008/09	6010.00	4899.00	1760.00
Average Rate of Return of stock $(\overline{R_J})$	0.35	0.48	0.18
Average Rate of Return of Market $(\overline{Rm})$	0.32	0.32	0.32
Standard Deviation of Stock (δj)	0.28	0.48	0.27
Standard Deviation of Market (δm)	0.32	0.32	0.32
Coefficient of Variation (C.V.)	0.83	1	1.38
Covariance (Rj, Rm)	0.069	0.12	0.07
Beta Coefficient (Bj)	0.69	1.23	0.69
Required Rate of Return (Rj)	0.22	0.38	0.24
Excess Rate of Return $[(\overline{R_J})-(Rj)]$	0.22	0.38	0.24

Source: Annual Report of SCBNL, Nabil BL and HBL. Appendix: B(I), B(II), B(III), B(IV),

The given table no 4.4 shows that SCBNL has highest market price compare with others banks. The MPS of each bank is in increasing trend from the Fiscal year 2004/05 to 2007/08. It shows that the return of investors is increasing year by

year; the increasing trend indicates investors are investing more on respective banks. In all the fiscal year SCBNL has highest market price compare to others. The increasing market price shows that companies are in profitable situation. But in the year 2008/09 the market price per share has decrease due to unstable government.

The average rate of return of Standard Chartered Bank 35%, which is 13% greater than the required rate of return. The positive excess rate of return implies that the security is under priced. It reveals that this bank is expected to earn a higher rate of return. The average

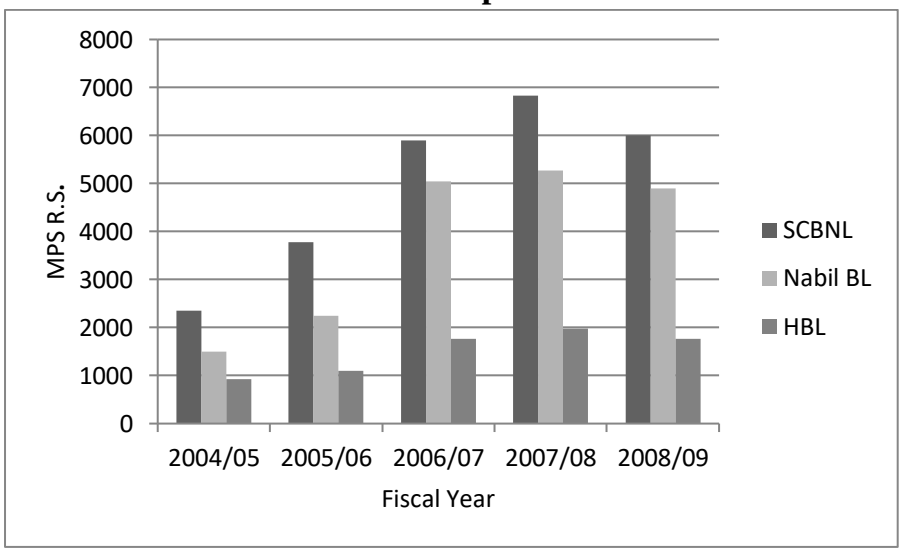
Rate of return of Nabil Bank 48%, which is 10% greater than the required rate of return. The positive excess rate of return implies that the security is under priced. It reveals that this bank is expected to earn a higher rate of return that is necessary to compensate an investor. The average rate of return of Himalayan Bank 18%, which is 6% less than the required rate of return. The negative excess rate of return implies that the security is over priced.

The Beta of Standard Chartered Bank is 0.69. It reveals that the stock has high degree of positive covariance with market. The return of Standard Chartered Bank is less volatile than the market. Due to positive changes in Beta of stock of Standard Chartered, the increment of 1% in NEPSE will increase the stock of Standard Chartered by 069%. From the viewpoint of volatility, the stock is less volatile than the market. The stock is therefore can be categorized as defensive stock. The Beta of Nabil Bank and Himalayan bank are 1.23 and 0.69 respectively.

Looking at the coefficient of variation, the share of Standard Chartered has risk 0.83 per unit of return. Standard deviation measures the total risk of an investment which is 28 %. Same as coefficient of variation, the share of Nabil Bank and

Himalayan Bank has risk 1 and 1.38 per unit of return respectively. Standard Deviation of both Banks are 48% and 27% respectively. Only a portion of the total risk is rewarded by the bank share's returns and the unrewarded portion of the risk is the unsystematic risk.

Figure 4.4
Market Price per Share



4.6.2 Analysis of Earning Price per Share (EPS) of SCBNL, Nabil BL and HBL

Table 4.5
Earning Per Share

(Rs.)

Year	SCBNL	Nabil BL	HBL
2004/05	143.14	105.49	47.91
2005/06	175.84	129.21	59.24
2006/07	167.37	137.08	60.66
2007/08	131.92	108.31	62.74
2008/09	109.99	106.76	61.91
Average Rate of Return of stock $(\overline{R_J})$	-0.0406	0.0402	0.052
Standard Deviation of Stock (δj)	0.156	0.1481	0.27
Coefficient of Variation (C.V.)	-3.84	3.68	1.83

Source: *Annual Report of SCBNL, NBL and HBL Appendix: B (V), B(VI), B(VII), B(IV)*

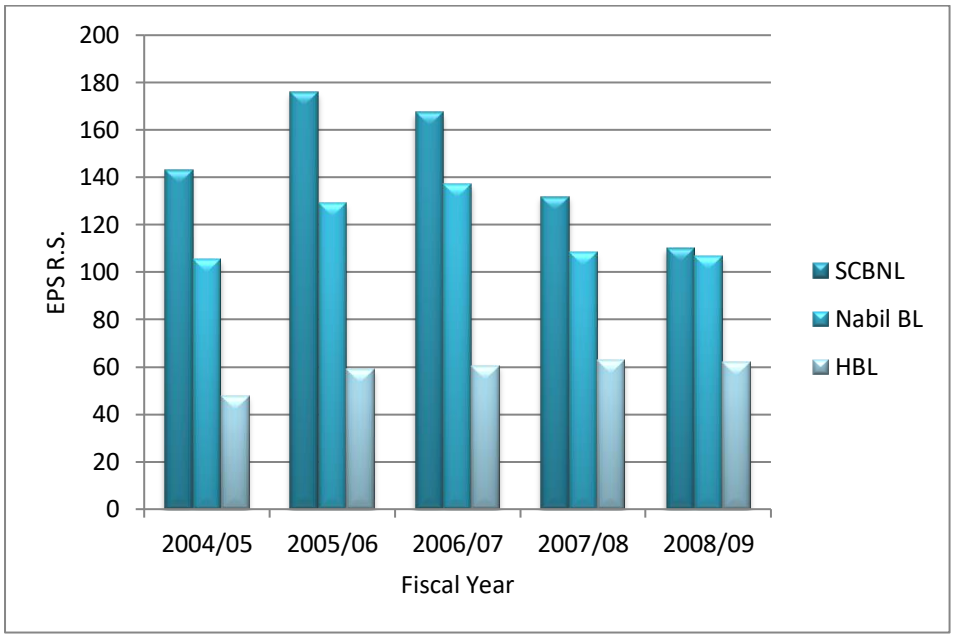
The EPS measures return of each equity shareholders so, the given table no 4.7.2 shows that the EPS of is greater than others two banks in all fiscal year. It Indicates the return is highest in others two banks and risk part is low compare with other two banks. The highest EPS of SCBNL is fiscal year2006/07 i.e. 167.37. The highest EPS of Nabil Bank is in the fiscal year 2006/07 i.e. 137.08. The highest EPS of Himalayan Bank is in the fiscal year 2007/08 i.e. 62.74.

The table shows the overall earnings per share return and risks of the individual bank. Here the investors can get the highest return from HBL i.e. 0.052 and the negative return from SCBNL i.e. -0.0406. A total risk measurement of standard deviation is observed maximum of the C.S. of HBL i.e 0.27 and minimum of Nabil Bank i.e. 0.1481.This means that quantative of total risk is very high in HBL. Higher the C.V. higher the risk and C.V. of Nabil Bank is highest i.e. 3.68 then that of other commercial banks. So common stock of Nabil Bank is more risky than that of other banks. Investment in HBL is desirable because its return is higher and compares to other banks.

Looking at the coefficient of variation, the share of Standard Chartered has risk - 3.84 per unit of return. Standard deviation measures the total risk of an investment which is 15.6 %. Same as coefficient of variation, the share of Nabil Bank and Himalayan Bank has risk 3.68 and 1.83 per unit of return respectively. Standard Deviation of both Banks is 14.81% and 27% respectively. Only a portion of the total risk is rewarded by the bank share's returns and the unrewarded portion of the risk is the unsystematic risk.

Figure 4.5

Earnings per Share



4.6.3 Analysis of Cash Dividend per Share of SCBNL, Nabil BL and HBL

Table 4.6

Dividend per Share

(R.s.)

Year	SCBNL	Nabil BL	HBL
2004/05	120.00	70.00	11.58
2005/06	130.00	85.00	30.00
2006/07	80.00	100.00	15.00
2007/08	80.00	60.00	25.00
2008/09	50.00	35.00	12.00
Average Rate of Return of stock $(\overline{R_J})$	-0.1174	-0.0706	0.248
Standard Deviation of Stock (δj)	0.217	0.28	0.799
Coefficient of Variation (CV)	-1.848	-3.97	3.22

Source: *Annual Report of SCBNL, Nabil BL and HBL. Appendix: B(VIII), B(IX), B(x), B(IV),*

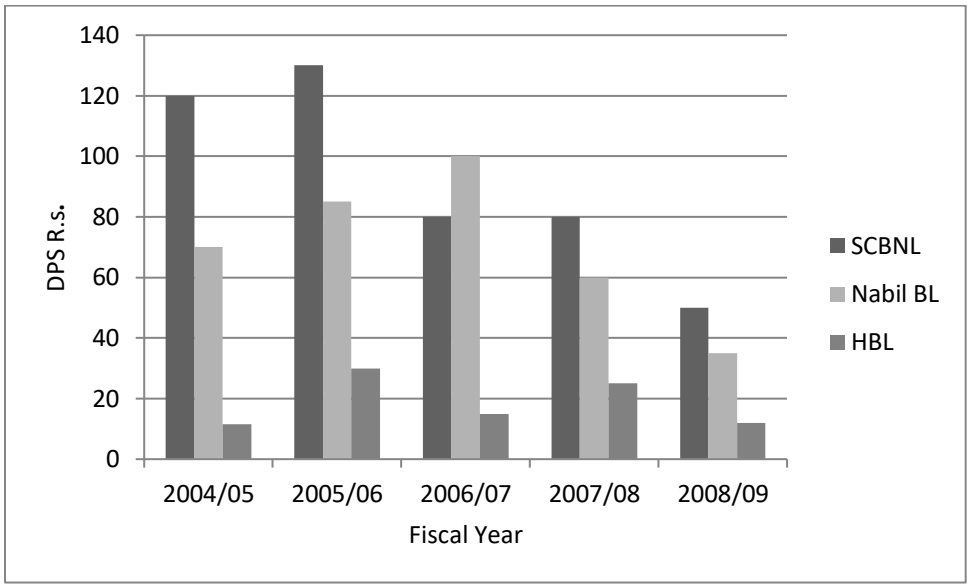
The DPS refers the percentage of earnings paid in cash to its stockholders so, the given table no 4.7.3 shows that the DPS is in the fluctuating trend of all three banks. The

Highest DPS is given by the SCBNL is the fiscal year 2005/06 i.e. Rs. 130 indicates the shareholders maximum return in cash is Rs. 130 for 1 KITTA share. Nabil Bank gives highest DPS to its shareholders in the fiscal year 2006/07 i.e. Rs. 100.00. Himalayan Banks provide dividend in the share holders is low rate dividend then others. HBL pays maximum dividend Rs. 30.00 in the fiscal year 2005/06. The highest dividend per share shows that the highest return to its equity shareholder.

The table shows the overall dividend per share return and risks of the individual bank. Here the investors can get the highest return from HBL i.e. 0.248 and the negative return from SCBNL and Nabil Bank i.e. -0.1174 and -0.0706 respectively. A total risk measurement of standard deviation is observed maximum of the C.S. of HBL i.e 0.799 and minimum of SCBNL i.e. 0.217.This means that quantative of total risk is very high in HBL. Higher the C.V. higher the risk and C.V. of HBL is highest i.e. 3.22 then that of other commercial banks. So common stock of HBL is more risky than that of other banks.

Figure 4.6

Dividend per Share



4.6.4 Analysis of P/E Ratio of SCBNL, Nabil BL and HBL

Table 4.7

P/E Ratio

Year	SCBNL	Nabil BL	HBL
2004/05	16.38	14.27	19.20
2005/06	21.47	17.34	18.57
2006/07	35.25	36.84	28.69
2007/08	51.77	48.70	31.56
2008/09	54.64	45.89	28.43
Average Rate of Return of stock $(\overline{R_J})$	0.249	0.359	0.1268
Standard Deviation of Stock (δj)	0.29	0.41	0.23
Coefficient of Variation (CV)	1.17	1.14	1.78

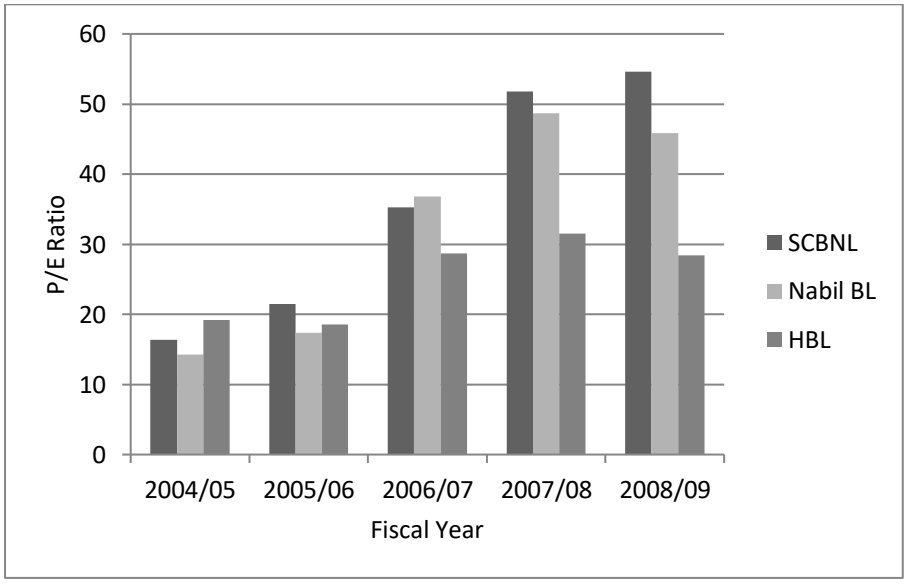
Source: Annual Report of SCBNL, Nabil BL and HBL. Appendix: B(XI), B(XII), B(XIII), B(IV),

The table shows that the P/E ratio is in increasing trend till fiscal year 2007/08. In the highest P/E Ratio among three banks is of SCBNL i.e. 57.77 in the fiscal year 2007/08. The highest P/E Ratio of Nabil Bank is in the fiscal year 2007/08 i.e. 98.70. The Himalayan Bank has highest P/E ratio is in the fiscal year 2007/08 i.e. 31.56.

The table shows the overall P/E ratio return and risks of the individual bank. Here the investors can get the highest return from Nabil Bank i.e. 0.359 and the lowest return from HBL i.e. 0.1268. A total risk measurement of standard deviation is observed maximum of the C.S. of Nabil Bank i.e 0.41 and minimum of HBL i.e. 0.23.This means that quantative of total risk is very high in Nabil Bank. Higher the C.V. higher the risk and C.V. of HBL is highest i.e. 1.78 then that of other commercial banks. So common stock of HBL is more risky than that of other banks. Investment in Nabil Bank is desirable because its return is higher and the risk is lowest compares to other banks.

Figure 4.7

P/E Ratio



4.6.5 Return, Risk, CV, Co-Variance, Beta Evaluation Analysis

Table 4.8

Stocks; Return, Risk, Beta of SCBNL, Nabil BL, HBL

Stocks	Expected Return $(\overline{R_J})$	Standard Deviation (δj)	Beta Coefficient (Bj)	Required Rate of Return (Rj)	Status of The Company
SCBNL	34%	27%	0.68	24.17%	Under Priced
Nabil BL	48%	48%	1.23	37.60%	Under Priced
HBL	19.70%	27.20%	0.62	22.70%	Over Priced

Source: Appendix: B(I), B(II), B(III),

The given table 4.8 shows that the highest return is Nabil Bank Limited . Its shows that the investors are seem to be satisfied from the return analysis. But the risk part is also highest in Nabil Bank. It reflects that the investors aware to invest in Nabil Bank. T he standard deviation measures the total risk of an investment which is 48%.

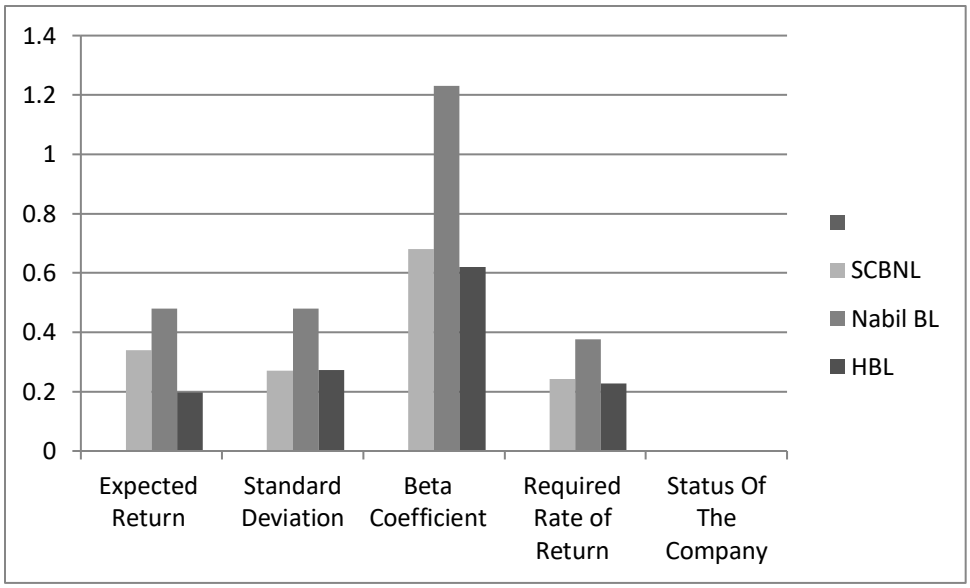
The Beta of SCBNL is 0.68. The stock is less volatile than the market. The stock is categorized as defensive stock. The Beta of Nabil Bank limited is 1.23. The stock is more volatile than the market. The stock is categorized as aggressive stock. The beta if Himalayan Bank is 0.62. The stock is less volatile than the market. The stock is categorized as defensive stock.

The expected return of SCBNL is (34%), greater than required rate of return (24.17%). It implies that the securities are under priced. The expected return of Nabil Bank is (48%), greater than required rate of return (37.60%). It implies that the securities are under priced. The expected return of Himalayan Bank is

(19.70%), less than required rate of return (22.70%). It implies that the securities are priced.

Figure 4.8

Statistical Measurement of Companies



4.7 Systematic and Unsystematic Risk

4.7.1 Systematic Risk

This is a part of total risk and cannot be diversified through creation of portfolios. This risk creates from systematic factor or market factor or macroeconomic factor like inflation, GDP, interest etc. Systematic risk can be expressed in formulas as:

$$\text{SR} = \frac{COV(R_j, R_m)}{\delta_m}$$

Where,

SR = Systematic Risk

$COV(R_j, R_m)$ = Covariance return of stock with market

δ_m = S.D. of Market

4.7.2 Unsystematic Risk

This is diversifiable risk and can be diversified through creation of portfolio. This risk creates from micro economic factor or unique factor to a firm like managements efficiency, strikes and production policy etc.

USR = Total Risk-SR

= δ_j - SR

Where,

USR = Unsystematic Risk

SR = Systematic Risk

δ_j = S.D. of Stock of Sample bank

4.7.3 Systematic and Unsystematic Risk of SCBNL with Market

SR = $\frac{COV(R_j,R_m)}{\delta_m} = \frac{0.069}{0.32} = 0.2156$

USR = δ_j - SR = 0.28-0.2156 =0.0644

Note: $COV(R_j,R_m)$, δ_m, δ_j are taken from table 4.7.1.1

Where,

$COV(R_j,R_m)$ = Covariance returns of SCBNL with market

δ_j = S.D. of SCBNL

4.7.3.1 Proportion of Systematic and Unsystematic Risk

Proportion of SR = $\frac{SR}{TR} = \frac{0.2156}{0.28} = 0.77 = 77\%$

Proportion of USR = $\frac{USR}{TR} = \frac{0.0644}{0.28} = 0.23 = 23\%$

Out of total risk in stock of SCBNL; 77% is undiversified risk and created from systematic factor or market factor and the remaining 23% is diversifiable risk and created from company related factor.

4.7.4 Systematic and Unsystematic Risk of Nabil BL with Market

SR = $\frac{COV(R_j,R_m)}{\delta_m} = \frac{0.12}{0.32} = 0.375$

USR = δ_j - SR = 0.48-0.375 =0.105

Note: $COV(R_j,R_m)$, δ_m, δ_j are taken from table 4.7.1.1

Where,

$COV(R_j,R_m)$ = Covariance returns of Nabil BL with market

δ_j = S.D. of Nabil BL

4.7.4.1 Proportion of Systematic and Unsystematic Risk

Proportion of SR = $\frac{SR}{TR} = \frac{0.375}{0.48} = 0.7813 = 78.13\%$

Proportion of USR = $\frac{USR}{TR} = \frac{0.105}{0.48} = 0.2187 = 21.87\%$

Out of total risk in stock of Nabil BL; 78.13% is undiversified risk and created from systematic factor or market factor and the remaining 21.87% is diversifiable risk and created from company related factor.

4.7.5 Systematic and Unsystematic Risk of HBL with Market

SR = $\frac{COV(R_j,R_m)}{\delta_m} = \frac{0.07}{0.32} = 0.2188$

USR = δ_j - SR = 0.27-0.2188 = 0.0512

Note: $COV(R_j,R_m)$, δ_m, δ_j are taken from table 4.7.1.1

Where,

$COV(R_j,R_m)$ = Covariance returns of HBL with market

δ_j = S.D. of HBL

4.7.5.1 Proportion of Systematic and Unsystematic Risk

Proportion of SR = $\frac{SR}{TR} = \frac{0.2188}{0.27}$ = 0.8104 = 81.04%

Proportion of USR = $\frac{USR}{TR} = \frac{0.0512}{0.27}$ = 0.1896 = 18.96%

Out of total risk in stock of HBL; 81.04% is undiversified risk and created from systematic factor or market factor and the remaining 18.96% is diversifiable risk and created from company related factor.

Table 4.9

Systematic Risk and Unsystematic Risk

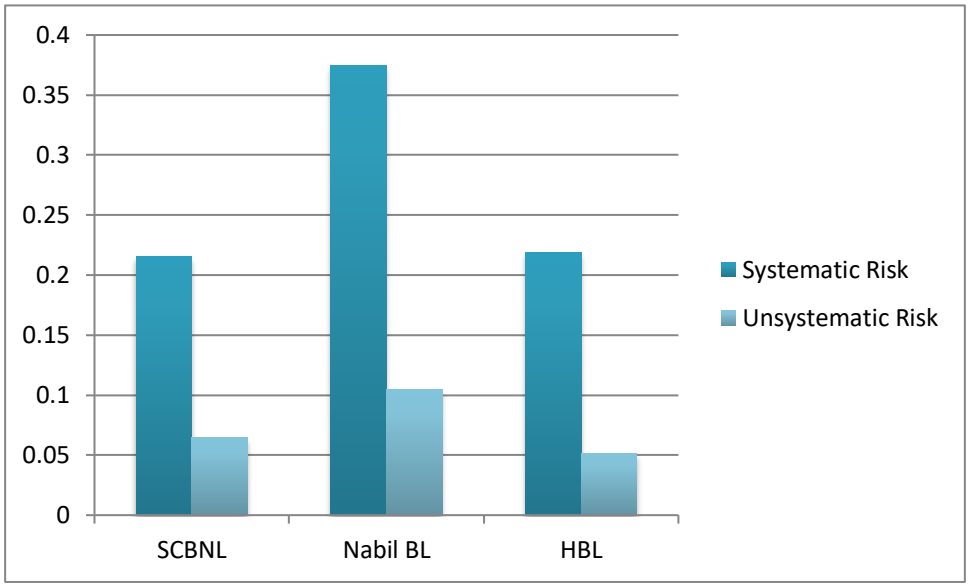
Banks	Total Risk	Systematic Risk	Unsystematic Risk	Systematic Risk (%)	Unsystematic Risk (%)
SCBNL	0.28	0.2156	0.0644	77	23
Nabil BL	0.48	0.375	0.105	87.13	21.87
HBL	0.27	0.2188	0.0512	81.04	18.96

The through analysis of SCBNL total risk with systematic and unsystematic risk. The given table shows total risk is 0.28, with systematic risk is 0.2156 and unsystematic risk is 0.0644. In the percentage, the systematic risk is 77% and unsystematic risk is 23%. The through analysis of Nabil Bank, total risk with systematic and unsystematic risk. The given table shows Nabil Bank total risk is 0.48, with systematic risk is 0.375 and unsystematic risk is 0.105. In the

percentage, the systematic risk is 87.13% and unsystematic risk is 21.87%. The through analysis of Himalayan Bank, total risk with systematic and unsystematic risk. The given table shows total risk is 0.27, with systematic risk is 0.2188 and unsystematic risk is 0.0512. In the percentage, the systematic risk is 81.04% and unsystematic risk is 18.96%.

Figure 4.9

Systematic and Unsystematic Risk



4.8 Portfolio Analysis

A portfolio is a combination of investment assets. Portfolio theory was proposed by Harry M. Markowitz which gives the concept of diversification of risk by investing total funds in more than a single asset or single stock. Markowitz diversification helps the investor to attain a higher level or expected utility than with any other risk reduction technique. In a very simple way we can understand it as not keeping all the eggs in a single basket. The risk of individual securities can be reduced without losing considerable return. The main objective of portfolio of reduction of unsystematic risk from which investors can take more benefit by making efficient portfolio. Therefore a brief analysis of risk and return is extended

in portfolio context. The portfolio expected return is straight forward weighted average of return on the individual securities. The weight is equal to the proportions of the total fund invested in each security.

4.8.1 Analysis of Risk Diversification

The analysis is based on two assets portfolio and the tools for analysis. Here the portfolio of common stock of SCBNL (say stock S), Nabil BL (say stock N) & HBL (say stock H) is analyzed.

Covariance between Stocks

Cov(R_S , R_N)	0.1079
Cov(R_N , R_H)	0.1795
Cov(R_S , R_H)	0.0677

Source: Appendix B(XIV), B(XV), B(XVI)

Where,

Cov $(R_S - R_N)$ = Covariance Returns of SCBNL and Nabil BL.

Cov $(R_N - R_H)$ = Covariance Returns of Nabil BL and HBL.

Cov $(R_S - R_H)$ = Covariance Returns of SCBNL and HBL.

4.8.1.1 Portfolio of Stocks SCBNL (S) and Nabil BL (N)

The optimal portfolio weight of stock A and stock B, which minimizes the risk, is given below:

$$W_A = \frac{\delta_B^2 - COV(R_S.R_N)}{\delta_A^2 + \delta_B^2 - COV(R_S.R_N)}$$

$W_B = 1 - W_A$

Where,

W_A = Optimal weigh to invest in stock of SCBNL.

W_B = Optimal weigh to invest in stock of Nabil BL.

δ_A^2 = Variance of SCBNL.

δ_B^2 = Variance of Nabil BL.

Now,

$$W_A = \frac{(0.48)^2 - 0.1079}{(0.28)^2 + (0.48)^2 - 0.1079}$$

$$= \frac{0.1225}{0.2009}$$

$$= 0.6096$$

$W_B = 1 - W_A = 1 - 0.6096 = 0.3904$

As we know that the proportion of stock in the portfolio is constructed with 60.96% of SCBNL and 39.04% on Nabil BL common stock that will minimize risk and ideal proportion in above proportion, equity shareholders can minimize risk to get maximum return.

Portfolio Return

It is combination of two or more securities or assets and portfolio return is simply a weighted average of the expected return on individual stock return.

Expected Return on Portfolio $\sum(R_P) = W_A X \sum(R_A) + W_B X \sum(R_B)$

$= 0.6096X0.34 + 0.3904X0.48$

$= 0.3947$

$= 39.47\%$

Where,

$\sum(R_P)$ = Expected Returns on Portfolio of Stock SCBNL and Nabil BL.

$\sum(R_A)$ = Expected Return of SCBNL

$\sum(R_B)$ = Expected Return of Nabil BL.

Portfolio Risk

Portfolio risk is a function of the proportions invested in the common stocks. It is measured by standard deviation and calculated by using following formula.

$$\delta_P = \sqrt{W_A{}^2 X\delta_A{}^2 + W_B{}^2 X\delta_B{}^2 + 2.CovABXW_AXW_B}$$

$$= \sqrt{(0.6096)^2 X (0.28)^2 + (0.3904)^2 X (0.48)^2 + 2X\,0.1079X\,0.6096X\,0.3904}$$

$$= \sqrt{0.0643 + 0.0514}$$

$$= 0.3401$$

$$=34.01\%$$

Where,

δ_P = The Standard Deviation of Portfolio Return of Stock SCBNL and Nabil BL.

From the above calculation the Portfolio Return and Risk for SCBNL and Nabil BL 39.47% and 34.01% respectively.

4.8.1.2 Portfolio of Stocks Nabil BL (N) and HBL (H)

The optimal portfolio weight of stock B and stock C, which minimizes the risk, is given below:

$$W_B = \frac{\delta_C{}^2 - COV(R_N.R_H)}{\delta_B{}^2 + \delta_C{}^2 - COV(R_N.R_H)}$$

$W_C = 1\text{-}W_B$

Where,

W_B = Optimal weigh to invest in stock of Nabil BL.

W_C = Optimal weigh to invest in stock of HBL.

$\delta_B{}^2$ = Variance of Nabil BL.

$\delta_C{}^2$ = Variance of HBL.

Now,

$$W_B = \frac{(0.272)^2 - 0.1795}{(0.48)^2 + (0.272)^2 - 0.1795}$$

$$= \frac{-0.1055}{0.1248}$$

$$= -0.8454$$

$W_C = 1 - W_B = 1-(-0.8454) = 1.8454$

As we know that the proportion of stock in the portfolio is constructed with -84.54% of Nabil BL and 184.54% on HBL common stock that will minimize risk and ideal proportion in above proportion, equity shareholders can minimize risk to get maximum return.

Portfolio Return

It is combination of two or more securities or assets and portfolio return is simply a weighted average of the expected return on individual stock return.

Expected Return on Portfolio $\sum(R_P) = W_B X \sum(R_B) + W_C X \sum(R_C)$

$= -0.8454X0.48 + 1.8454X0.197$

$= -0.0423 = -4.23\%$

Where,

$\sum(R_P)$ = Expected Returns on Portfolio of Stock SCBNL and Nabil BL.

$\sum(R_B)$ = Expected Return of Nabil BL.

$\sum(R_C)$ = Expected Return of HBL.

Portfolio Risk

Portfolio risk is a function of the proportions invested in the common stocks. It is measured by standard deviation and calculated by using following formula

$$\delta_P = \sqrt{W_B{}^2 X\delta_B{}^2 + W_C{}^2 X\delta_C{}^2 + 2.CovBCXW_B XW_C}$$

$$= \sqrt{(-0.8454)^2 X (0.48)^2 + (01.8454)^2 X (0.272)^2 + 2X\,0.175X(-0.8454)X1.8454}$$

$$= \sqrt{0.4166 - 0.56}$$

$$= \sqrt{-0.1434}$$

Where,

δ_P = The Standard Deviation of Portfolio Return of Stock Nabil BL and HBL. From the above calculation the Portfolio Return and Risk for Nabil BL and HBL are -4.23% and $\sqrt{-0.1434}$ respectively.

4.8.1.3 Portfolio of Stocks SCBNL (S) and HBL (H)

The optimal portfolio weight of stock A and stock C, which minimizes the risk, is given below:

$$W_A = \frac{\delta_C{}^2 - COV(R_S.R_H)}{\delta_A{}^2 + \delta_C{}^2 - COV(R_S.R_H)}$$

$W_C = 1\text{-}W_A$

Where,

W_A = Optimal weigh to invest in stock of SCBNL.

W_C = Optimal weigh to invest in stock of HBL.

$\delta_A{}^2$ = Variance of SCBNL.

$\delta_C{}^2$ = Variance of HBL.

Now,

$$W_A = \frac{(0.0.272)^2 - 0.0677}{(0.28)^2 + (0.272)^2 - 0.0677}$$

$$= \frac{0.0063}{0.0847}$$

$$= 0.0744$$

$W_C = 1\text{-}W_A = 1\text{-}0.0744 = 0.9256$

As we know that the proportion of stock in the portfolio is constructed with 7.44% of SCBNL and 92.56% on HBL common stock that will minimize risk and ideal proportion in above proportion, equity shareholders can minimize risk to get maximum return.

Portfolio Return

It is combination of two or more securities or assets and portfolio return is simply a weighted average of the expected return on individual stock return.

Expected Return on Portfolio $\sum(R_P)$ = W_A X $\sum(R_A)$+W_C X $\sum(R_C)$

= 0.0744X0.34+0.9256X0.197

= 0.2076

= 20.76%

Where,

$\sum(R_P)$ = Expected Returns on Portfolio of Stock SCBNL and HBL.

$\sum(R_A)$ = Expected Return of SCBNL

$\sum(R_C)$ = Expected Return of HBL.

Portfolio Risk

Portfolio risk is a function of the proportions invested in the common stocks. It is measured by standard deviation and calculated by using following formula

$\delta_P = \sqrt{W_A^2 X\delta_A^2 + W_C^2 X\delta_C^2 + 2.CovACXW_A XW_C}$

$= \sqrt{(0.0744)^2 X(0.28)^2 + (0.9256)^2 X(0.272)^2 + 2X0.0677X0.0744X0.9256}$

$= \sqrt{0.0638 + 0.0093}$

= 0.2704

=27.04%

Where,

δ_P = The Standard Deviation of Portfolio Return of Stock SCBNL and HBL. From the above calculation the Portfolio Return and Risk for SCBNL and HBL 20.76% and 27.04% respectively.

Table 4.10

Portfolio Risk and Return

Banks	$\sum(R_P)$	δ_P	**Remarks**	
			Return	**Risk**
SCBNL&Nabil BL	39.47%	34.01%	Highest	Lowest
Nabil BL&HBL	-4.23%	$\sqrt{-0.1434}$	-	Unidentified
SCBNL&HBL	20.76%	27.04%	Lowest	Highest

Sources: Page no. 82, 83, 84, 85, 86

The table 4.10 shows portfolio risk and return. In portfolio risk SCBNL&Nabil BL has highest risk in comparison with SCBNL&HBL. The risk of Nabil BL&HBL is unidentified. SCBNL and Nabil BL portfolio has highest return comparison with SCBNL&HBL. Nabil BL&HBL has negative return. SCBNL&Nabil BL has the highest return and lowest risk comparison with the portfolio SCBNL&HBL and Nabil BL&HBL. SCBNL&HBL has lowest return and the highest risk.

4.9 Major Findings of the Study

On the basis of the detailed study of the listed commercial bank in regards to investment in common stock including risk and return analysis following major findings have seen, they are presented as follows:

- Taking about number of listed companies under NEPSE, the increasing trend shows the positive percentage change which indicates increasing interest of public towards the establishment of companies in the country.

- Because of the persistence in the stock price movements, professional traders either individual or institutional can beat the market. Therefore to make greater profit than naïve buy and hold strategy, acute fundamental and other analysis are required which accurately predict the appearance of the new information in the market that have impact on prices.
- With respect to the calculated of actual rate of return and required rate of return of Himalayan Bank was found to be lower, So the stock of HBL are overvalued. The remaining two Bank Nabil Bank and Standard Chartered Bank have actual return more than the required rate of return so the stock price of those banks is undervalued.
- All the market risk and return can be accessed through over all NEPSE index. Corresponding to the fluctuations in individual industries the overall market index has also moved accordingly. It has reached maximum in the initial observation month and it started decreasing tread till the month of April/May. But from the month of May/June the market index are going to increase.
- Details of data, its presentation and analysis reveal that standard deviation of Nabil Bank is 48% which is highest of all the banks selected for the study. Standard deviation of HBL and SCBNL are 27% and 28% respectively. Depending upon this parameter i.e. S.D, SCBNL stock is said to be relatively less risky.
- Regarding the total risk, Nabil Bank Limited consists of highest 48% of total risk which is risky among the sample. The stock of standard Chartered Bank Nepal Limited is recorded as least risky in comparison to its other sampled banks in terms of standard deviation.
- The average realized rate if return of all the sampled banks are not the same over the sampled periods. Therefore, the coefficient of variation can be preferred over the standard deviation as measure risk on the basis of coefficient of variation, HBL shares can be considered as more risky whereas

SCBNL's shares can be measured as less risky. Stocks of Nabil Bank are more aggressive to market changes as revealed by the highest beta coefficient of 1.23 and the least beta coefficient is yielded by Himalayan Bank of three sampled banks.

- The findings of this Study also imply that Nepal Stock Exchange is operated under the dearth of sophisticated financial and market analysts. Activities of such analysts with skillful mind, talent and ability including statistical knowledge and react about incoming information and their valuable suggestion in building of new regulations help to cut down the dependence in the stock price changes. But, unfortunately such kinds of activities were not found in Nepalese stock market. Thus investors are not in attention of publicly available information and whimsically them response the information and accept the new price.

CHAPTER -V

SUMMARY, CONCLUSION AND RECOMMENDATION

In this chapter, the effort has been made first to present summary of major findings and conclusion drawn from the analysis. Last steps proceeds with the recommendation.

5.1 Summary

Risk and Return is getting considerable attention in final management and its major part stock market had greatest glamour, not only for the proportional or institutional investors but also for the individual or private investors. Investors are also aware of how and where to invest their capital. So, no investors want to invest their capital on risky assets unless they are fully assured that investment in safe for the future. Risk is the fact of life and return is reward for bearing risk. Risk plays a central role in the analysis of investment.

The risk and return relationship is described by investor's perception about risk and their demand for compensation. No investors will like to invest in risky assets unless he/she is assured of adequate compensation for the acceptance of risk. Risk plays a vital role in the analysis of investment taking decision about proper investment decision process, analysis of securities, and identification of overpriced, underpriced securities. The tradeoff between risk and return can be aided by financial ratios too.

The stock market is one of the parts of capital market. It is getting high attention not only for the professional or institutional investors but also for the privet investors. The Nepalese capital market is not well developed however its

performance is showing a gradual improvement to providing investors the opportunity to participate in primary and secondary market activities.

The main objectives of the study is to analyze the risk, return and other relevant variables that help in marketing decision about investment on securities of the listed commercial banks in Nepal. Thus three commercial banks are taken as sample to analyze the risk and return in common stock investment. The brief review of related studies has been performed, while analyzing the risk and return. Scientific methods are used in data analysis and tables, figures are used to represent the results. Secondary data are collected from NEPSE, SEBO/N, and annual reports of related banks, NRB and websites. Findings of analysis are summarized and conclusion is drawn follows.

5.2 Conclusion

The study on risk analysis of common stocks of listed three commercial banks is based on secondary data from fiscal year 2004/05 to 2008/09. In this study, average rate of return of Nabil BL's stock is highest i.e 48% in commercial banks. Like wise in terms if standard deviation Nabil BL has the highest risk i.e. 48%. Nabil bank has equal risk and return percentage. But, generally standard deviation is not used to determining risk, as there may be different average return. Therefore, the coefficient of variation is considered as the best mechanism to measure the risk. On the basis of C.V. HBL's stock seems to be the most risky with 1.38. The Beta of Nabil BL is highest i.e. 1.23. The Beta is also the symptom of systematic risk. On the other hand; it is found that the required rates of return of all the above-mentioned banks expect HBL are lower than its average rate of return. It means that SCBNL and Nabil BL stocks are underpriced and HBL are overpriced. Similarly, the study made to analyze the diversifiable and undiversified risk reflects that all the samples stock expect have high systematic risk and such risk can not be diversifies on minimized. This type of stock is known

as aggressive stock. Thus, it is reflected format he above study that has the highest unsystematic risk, which can be minimized or eliminated. Such type of stock can be mentioned as defensive stock. Coveriance between the stock in Nabil BL and Market (NEPSE) is highest positive of 0.12 and lowest positive in SCBNL with market of 0.069.

5.3 Recommendations

On the basis of analysis of finding of study, the following recommendation and suggestion are forwarded:

- The risk and return analysis of commercial banks is not scientific. Hence, it must be scientific base on rational investment decisions.
- There is unwanted relationship between required rate of return and average rate of return of securities of sampled banks. Excess return of banks is more than 21 percent, which one may not be realistic. So all the investors are conduct technical analysis as well as fundamental analysis to know the correct price of common stock.
- If the investor is risk averter, it is recommended him or her to invest SCBNL and if investor is risk seeker, then suggested to invest in Nabil BL.
- The investment strategies adopted by Nepalese individual investors are passive. They just hold the securities and wait for dividend. Hence, active strategy should be followed to gain from the transactions.
- The practice of creating a well-diversified portfolio cannot be found in Nepalese Commercial banks. The investment risk can be significantly reduced with a well-diversified portfolio. Hence, it is suggested to diversify their investment in different securities that behave differently i.e. with negative or low correlation for reducing poor portfolio performance.
- 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.

- All investors are recommended to put adequate consideration on risk and return factors while making investment on common stock 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.

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APPENDICES

Appendix – A (I)

Standard Chartered Bank Nepal Limited

New Baneshwor Kathmandu

Authorized Capital :			Rs. 1,000,000,000.00
Paid Up Value per Share :			Rs. 100.00
Issued Capital			Rs. 1,000,000,000.00
No. of Share Holders:	7157	Incorporation Year :	2042 B.S
Per Value Per Share:	Rs. 100.00	Listing Date :	2045.03.21 B.S.

Changes in Paid-Up Capital

(Rs. In Million)

Year	Before	After	Remarks
2004/2005	374.64	374.64	-
2005/2006	374.64	674.64	-
2006/2007	674.64	413.25	10% (Bonus)
2007/2008	413.25	620.78	50% (Bonus)
2008/2009	620.78	931.97	50% (Bonus)

Equity Share Data

Year	2004/05	2005/06	2006/07	2007/08	2008/09
Paid-Up Price per Share (Rs.)	100.00	100.00	100.00	100.00	100.00
Market Price Per Share	2345.00	3775.00	5900.00	6830.00	6010.00
Closing Price (Rs.)	2345.00	3775.00	5900.00	6830.00	6010.00
High Price (Rs.)	2350.00	3775.00	5900.00	9025.00	9200.00
Low Price (Rs.)	1553.00	2200.00	3058.00	4505.00	4100.00
Earning Per Share (Rs.)	143.14	175.84	167.37	131.92	109.99
Book Value Per Share (Rs.)	422.38	468.22	512.12	401.52	327.53
Cash Dividend Per Share (Rs.)	120.00	130.00	80.00	80.00	50.00
Dividend Percent	120	130	80	80	50
PE Multiple	16.38	21.47	35.25	51.77	54.64
Market Capitalization of Closing price (Rs. in Million)	8785.32	14142.68	24382.03	46497.55	56011.18
Market Price/Book Value	5.55	5.88	12.08	14.90	15.12

Appendix – A (II)

Nabil Bank Limited

Kantipath, Kathmandu

Authorized Capital :			Rs. 1,600,000,000.00
Paid Up Value per Share :			Rs. 100.00
Issued Capital			Rs. 965,747,000.00
No. of Share Holders:	7441	Incorporation Year :	2041 B.S
Per Value Per Share:	Rs. 100.00	Listing Date :	2042.09.08 B.S.

Changes in Paid-Up Capital

(Rs. In Million)

Year	Before	After	Remarks
2004/2005	491.65	491.65	-
2005/2006	491.65	491.65	-
2006/2007	491.65	491.65	-
2007/2008	491.65	689.22	40% (Bonus)
2008/2009	689.22	965.75	40% (Bonus)

Equity Share Data

Year	2004/05	2005/06	2006/07	2007/08	2008/09
Paid-Up Price per Share (Rs.)	100.00	100.00	100.00	100.00	100.00
Market Price Per Share	1505.00	2240.00	5050.00	5275.00	4899.00
Closing Price (Rs.)	1505.00	2240.00	5050.00	5275.00	4899.00
High Price (Rs.)	1515.00	2300.00	5050.00	6700.00	6400.00
Low Price (Rs.)	1000.00	1500.00	2025.00	3410.00	3050.00
Earnings Per Share (Rs.)	105.49	129.21	137.08	108.31	106.76
Book Value Per Share (Rs.)	337.00	381.00	418.00	354.00	324.00
Cash Dividend Per Share (Rs.)	70.00	85.00	100.00	60.00	35.00
Dividend Percent	70	85	100	60	35
PE Multiple	14.27	17.34	36.84	48.70	45.89
Market Capitalization of Closing price (Rs. in Million)	7389.47	10998.29	24795.25	36259.98	47311.94
Market Price/Book Value	4.46	5.88	12.08	14.90	15.12

Appendix – A (III)

Himalayan Bank Limited

Kantipath, Kathmandu

Authorized Capital :			Rs. 2,000,000,000.00
Paid Up Value per Share :			Rs. 100.00
Issued Capital			Rs. 1,216,215,000.00
No. of Share Holders:	8186	Incorporation Year :	2048 B.S
Per Value Per Share:	Rs. 100.00	Listing Date :	2050/03/21

Changes In Paid-Up Capital

(Rs. In Million)

Year	Before	After	Remarks
2004/2005	536.24	643.50	20% (Bonus)
2005/2006	643.50	772.20	20% (Bonus)
2006/2007	772.20	810.81	5% (Bonus)
2007/2008	810.81	1013.51	25% (Bonus)
2008/2009	1013.51	1216.21	20% (Bonus)

Equity Share Data

Year	2004/05	2005/06	2006/07	2007/08	2008/09
Paid-Up Price per Share (Rs.)	100.00	100.00	100.00	100.00	100.00
Market Price Per Share	920.00	1100.00	1760.00	1980.00	1760.00
Closing Price (Rs.)	920.00	1100.00	1760.00	1980.00	1760.00
High Price (Rs.)	1181.00	1200.00	1760.00	2856.00	2730.00
Low Price (Rs.)	855.00	900.00	950.00	1340.00	1119.00
Earnings Per Share (Rs.)	47.91	59.24	60.66	62.74	61.91
Book Value Per Share (Rs.)	239.59	228.72	264.74	247.95	256.52
Cash Dividend Per Share (Rs.)	11.58	30.00	15.00	25.00	12.00
Dividend Percent	11.58	30	15	25	12
PE Multiple	19.20	18.57	28.69	31.56	28.43
Market Capitalization of Closing price (Rs. in Million)	4830.00	8494.20	14270.20	24081.06	21405.38
Market Price/Book Value	3.84	4.81	6.57	7.98	6.86

Appendix B (I)

Standard Chartered Bank Nepal Limited

Year	MPS	Div.	R_J	$R_J-\overline{R_J}$	$\left(R_J-\overline{R_J}\right)^2$	$R_M-\overline{R_M}$	$(R_J-\overline{R_J})(R_M-\overline{R_M})$
2003/04	1745	-	-	-	-	-	-
2004/05	2345	120	0.41	0.07	0.0049	-0.03	-0.0021
2005/06	3775	130	0.66	0.32	0.1024	0.03	0.0096
2006/07	5900	80	0.58	0.24	0.0576	0.45	0.108
2008/08	6830	80	0.17	-0.17	0.029	0.09	-0.0153
2008/09	6010	50	-0.113	-0.45	0.2025	-0.54	0.243
Total			1.07		0.3964		0.3432

Average Rate of Return of Stock $\left(\overline{R_J}\right)=\frac{\sum R_J}{n}=\frac{1.07}{5}=0.34$

Average Rate of Return of Market $\left(\overline{R_M}\right)=\frac{\sum R_M}{n}=\frac{1.60}{5}=0.32$ [i.e from appendix B (IV)]

Standard Deviation of Stock $\delta_J=\frac{\sqrt{\sum\left(R_J-\overline{R_J}\right)}}{n}=\frac{\sqrt{0.3964}}{5}=0.28$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}}=\frac{0.28}{0.34}=0.83$

COV $\left(R_J-R_M\right)$ = $\frac{\sum[(R_J-\overline{R_J})\left(R_M-\overline{R_M}\right)}{n}=\frac{0.3432}{5}=0.069$

Beta Coefficient $\beta_J=\frac{Cov(R_J,R_M)}{\delta_M{}^2}=\frac{0.069}{(0.317)^2}=0.69$

Required Rate of Return (R_j) = $R_f+[E(R_M)-R_f]\beta_j$

= 0.0755+ [0.32-0.0755] X0.69 = 0.2208

Where,

MPS = Market Price Per Share

Div = Dividend $R_J-\overline{R_J}$ = Individual Bank

R = Annual Return

$$R_j = \frac{(Ending\ Price - Begnning\ Price) + Dividend}{Begnning\ Price}$$

Appendix B (II)

Nabil Bank Limited

Year	MPS	Div.	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$	$R_M - \overline{R_M}$	$(R_J - \overline{R_J})(R_M - \overline{R_M})$
2003/04	1000	-	-	-	-	-	-
2004/05	1505	70	0.575	0.095	0.009	-0.03	-0.0028
2005/06	2240	85	0.545	0.065	0.004	0.03	0.0019
2006/07	5050	100	1.30	0.82	0.67	0.45	0.37
2008/08	5275	60	0.056	-0.424	0.18	0.09	-0.0382
2008/09	4899	35	-0.065	-0.54	0.29	-0.54	0.29
Total			2.41		1.153		0.62

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{2.41}{5} = 0.48$

Average Rate of Return of Market $\left(\overline{R_M}\right) = \frac{\sum R_M}{n} = \frac{1.60}{5} = 0.32$ [i.e From appendix B(IV)]

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{1.153}}{5} = 0.48$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.48}{0.48} = 1$

COV $\left(R_J - R_M\right)$ = $\frac{\sum[(R_J - \overline{R_J})\left(R_M - \overline{R_M}\right)}{n} = \frac{0.62}{5} = 0.124$

Beta Coefficient $\beta_J = \frac{Cov(R_J, R_M)}{\delta_M{}^2} = \frac{0.124}{(0.317)^2} = 1.23$

Required Rate of Return (R_j) = $R_f + [E(R_M) - R_f]\beta_j$

= 0.0755+ [0.32-0.0755]X1.23 = 0.376

Where,

MPS = Market Price Per Share

Div = Dividend $R_J - \overline{R_J}$ = Individual Bank

R = Annual Return

$R_j = \frac{(Ending\ Price - Begnning\ Price) + Dividend}{Begnning\ Price}$

Appendix B (III)

Himalayan Bank Limited

Year	MPS	Div.	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$	$R_M - \overline{R_M}$	$(R_J - \overline{R_J})(R_M - \overline{R_M})$
2003/04	840	-	-	-	-	-	-
2004/05	920	11.58	0.109	-0.009	0.0081	-0.03	0.0027
2005/06	1100	30	0.228	0.031	0.00096	0.03	0.0009
2006/07	1760	15	0.614	0.417	0.174	0.45	0.1877
2008/08	1980	25	0.139	-0.058	0.0034	0.09	-0.0052
2008/09	1760	12	-0.105	-0.302	0.0912	-0.54	0.163
Total			0.985		0.2777		0.349

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{0.985}{5} = 0.197$

Average Rate of Return of Market $\left(\overline{R_M}\right) = \frac{\sum R_M}{n} = \frac{1.60}{5} = 0.32$ [i.e From appendix B (IV)]

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.371}}{5} = 0.272$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.272}{0.197} = 1.38$

COV $\left(R_J - R_M\right) = \frac{\sum[(R_J - \overline{R_J})\left(R_M - \overline{R_M}\right)}{n} = \frac{0.349}{5} = 0.0698$

Beta Coefficient $\beta_J = \frac{Cov(R_J, R_M)}{\delta_M{}^2} = \frac{0.0698}{(0.317)^2} = 0.69$

Required Rate of Return (R_j) $= R_f + [E(R_M) - R_f]\beta_j$

$= 0.0755 + [0.32 - 0.0755]$ X0.69 = 0.2411

Where,

MPS = Market Price Per Share

Div = Dividend $R_J - \overline{R_J}$ = Individual Bank

R = Annual Return

$$R_j = \frac{(Ending\ Price - Begnning\ Price) + Dividend}{Begnning\ Price}$$

Appendix B (IV)

NEPSE Index and Annual Return

Year	NEPSE INDEX	Annual Return (R_M)	$R_M - \overline{R_M}$	$(R_M - \overline{R_M})^2$
2003/04	222.04	-	-	-
2004/05	286.67	0.29	-0.03	0.0009
2005/06	386.83	0.35	0.03	0.0009
2006/07	683.95	0.77	0.45	0.2025
2008/08	963.36	0.41	0.09	0.0081
2008/09	749.10	-0.22	-0.54	0.291
		1.60		**0.5034**

Average Rate of Return of Market $\left(\overline{R_M}\right) = \frac{\sum R_M}{n} = \frac{1.60}{5} = 0.32$

Variation of Market $\delta M^2 = \frac{\sum \left(R_M - \overline{R_m}\right)^2}{n} = \frac{0.5034}{5} = 0.100489$

Standard Deviation of Stock $\delta_M = \sqrt{\delta_M{}^2} = \sqrt{0.10068} = 0.317$

Where,

$$R_M = \frac{(EndingPrice - BegnningPrice)}{BegnningPrice}$$

Appendix B (V)

Year	EPS of SCBNL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	143.55	-	-	-
2004/05	143.14	-0.0029	0.038	0.0014
2005/06	175.84	0.23	0.27	0.0729
2006/07	167.37	-0.05	0.009	0.00081
2008/08	131.92	-0.21	-0.1694	0.029
2008/09	109.99	-0.17	-0.129	0.017
	Total	$\sum R_J = -0.2029$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.1211$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{-0.2029}{5} = -0.0406$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.1211}}{5} = 0.156$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.156}{-0.0406} = -3.84$

Where,

SCBNL = Standard Chartered Bank Nepal Limited

EPS = Earning Per Share

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (VI)

Year	EPS of Nabil BL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	92.61	-	-	-
2004/05	105.49	0.139	0.099	0.0098
2005/06	129.21	0.225	0.185	0.034
2006/07	137.08	0.061	0.021	0.0004
2008/08	108.31	-0.21	-0.25	0.0625
2008/09	106.76	-0.014	-0.054	0.0029
	Total	$\sum R_J = 0.201$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.1096$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{-0.201}{5} = 0.0402$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.1096}}{5} = 0.1481$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.1481}{0.0402} = 3.68$

Where,

Nabil BL = Nabil Bank Limited

EPS = Earning Per Share

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (VII)

Year	EPS of HBL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	49.05	-	-	-
2004/05	47.91	-0.023	-0.075	0.0056
2005/06	59.24	0.236	0.184	0.0339
2006/07	60.66	0.024	-0.028	0.0008
2008/08	62.74	0.034	-0.018	0.0003
2008/09	61.91	-0.013	-0.065	0.0042
	Total	$\sum R_J = 0.258$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.045$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{0.258}{5} = 0.052$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.045}}{5} = 0.095$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.095}{0.052} = 1.83$

Where,

HBL = Himalayan Bank Limited

EPS = Earning Per Share

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (VIII)

Year	DPS of SCBNL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	110	-	-	-
2004/05	120	0.090	0.207	0.043
2005/06	130	0.083	0.2004	0.04
2006/07	80	-0.385	-0.268	0.072
2008/08	80	0	0.1174	0.014
2008/09	50	-0.375	-0.2576	0.066
	Total	$\sum R_J = -0.587$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.235$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{-0.587}{5} = -0.1174$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.235}}{5} = 0.217$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.217}{-0.1174} = -1.848$

Where,

SCBNL = Standard Chartered Bank Nepal Limited

DPS = Dividend Per Share

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (IX)

Year	DPS of Nabil BL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	65	-	-	-
2004/05	70	0.077	0.148	0.022
2005/06	85	0.214	0.285	0.081
2006/07	100	0.176	0.247	0.061
2008/08	60	-0.40	-0.329	0.108
2008/09	35	-0.42	-0.349	0.121
	Total	$\sum R_J = -0.353$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.393$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{-0.353}{5} = -0.0706$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.393}}{5} = 0.28$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.28}{-0.0706} = -3.97$

Where,

Nabil BL = Nabil Bank Limited

DPS = Dividend Per Share

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (X)

Year	DPS of HBL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	0	-	-	-
2004/05	11.58	0	-0.248	0.0615
2005/06	30	1.59	1.342	1.8
2006/07	15	-0.5	-0.748	0.56
2008/08	25	0.67	0.422	0.178
2008/09	12	-0.52	-0.768	0.59
	Total	$\sum R_J = 1.24$		$\sum\left(R_J - \overline{R_J}\right)^2 = 3.19$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{1.24}{5} = 0.248$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{3.19}}{5} = 0.799$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.799}{0.248} = 3.22$

Where,

HBL = Himalayan Bank Limited

DPS = Dividend Per Share

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (XI)

Year	P/E Ratio of SCBNL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	12.16	-	-	-
2004/05	16.38	0.347	0.098	0.0096
2005/06	21.47	0.311	0.062	0.0038
2006/07	35.25	0.642	0.393	0.154
2008/08	51.77	0.469	-0.269	0.073
2008/09	54.64	0.055	-0.414	0.171
	Total	$\sum R_J = 1.2462$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.4114$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{1.2462}{5} = 0.249$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.4114}}{5} = 0.29$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.29}{0.249} = 1.16$

Where,

SCBNL = Standard Chartered Bank Nepal Limited

P/E = Price Earning

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (XII)

Year	P/E Ratio of Nabil BL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	10.80	-	-	-
2004/05	14.27	0.32	-0.039	0.0015
2005/06	17.34	0.085	-0.274	0.0750
2006/07	36.84	1.125	0.766	0.587
2008/08	48.70	0.322	-0.037	0.0014
2008/09	45.89	-0.058	-0.417	0.1739
	Total	$\sum R_J = 1.794$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.8388$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{1.794}{5} = 0.359$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.8388}}{5} = 0.41$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.41}{0.359} = 1.14$

Where,

Nabil BL = Nabil Bank Limited

P/E = Price Earning

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (XIII)

Year	P/E Ratio of HBL	R_J	$R_J - \overline{R_J}$	$\left(R_J - \overline{R_J}\right)^2$
2003/04	17.12	-	-	-
2004/05	19.20	0.121	-0.0058	0.00003
2005/06	18.57	-0.033	-0.1598	0.026
2006/07	28.69	0.545	0.4182	0.175
2008/08	31.56	0.10	-0.027	0.0007
2008/09	28.43	-0.099	-0.226	0.051
	Total	$\sum R_J = 0.634$		$\sum\left(R_J - \overline{R_J}\right)^2 = 0.253$

Average Rate of Return of Stock $\left(\overline{R_J}\right) = \frac{\sum R_J}{n} = \frac{0.634}{5} = 0.1268$

Standard Deviation of Stock $\delta_J = \frac{\sqrt{\sum\left(R_J - \overline{R_J}\right)}}{n} = \frac{\sqrt{0.253}}{5} = 0.23$

Coefficient of Variation (C.V.) = $\frac{\delta_J}{\overline{R_J}} = \frac{0.23}{0.1268} = 1.78$

Where,

HBL = Himalayan Bank Limited

P/E = Price Earning

R_j = Annual Return

R_j = $\frac{Ending\ \text{Price} - Begnning\ \text{Price}}{Begnning\ \text{Price}}$

$R_J - \overline{R_J}$ = Individual Bank

Appendix B (XIV)

Calculation of Correlation between SCBNL(S) and Nabil BL (N)

Calculation of Covariance of return of given two stocks

Year	$(R_S - \overline{R_S})$	$(R_N - \overline{R_N})$	$(R_S - \overline{R_S})(R_N - \overline{R_N})$
2004/05	0.07	0.095	0.0067
2005/06	0.32	0.065	0.0208
2006/07	0.24	0.82	0.1968
2008/08	-0.17	-0.424	0.0721
2008/09	-0.45	-0.54	0.243
	Total		$\sum(R_S - \overline{R_S})(R_N - \overline{R_N}) = 0.5394$

Note: $(R_S - \overline{R_S})$ from appendix B (I) and $(R_N - \overline{R_N})$ from appendix B(II)

We have,

$$\text{COV}\ (R_S - R_N) = \frac{\sum[(R_S - \overline{R_S})(R_N - \overline{R_N})}{n} = \frac{0.5394}{5} = 0.1079$$

Now,

Correlation between SCBNL and Nabil BL

$$\rho_{SN} = \frac{COV(R_S, R_N)}{\delta_S X \delta_N} = \frac{0.1079}{0.28 X 0.48} = 0.8028$$

Note: δ_S from appendix B (I) and δ_N from appendix B(II)

Where,

$COV(R_S, R_N)$ = Covariance of return between SCBNL and Nabil BL

ρ_{SN} = Correlation between SCBNL and Nabil BL

δ_S = Standard Deviation of SCBNL

δ_N = Standard Deviation of Nabil BL

Appendix B (XV)

Calculation of Correlation between Nabil BL(N) and HBL(H)

Calculation of Covariance of return of given two stocks

Year	$(R_N - \overline{R_N})$	$(R_H - \overline{R_H})$	$(R_N - \overline{R_N})(R_H - \overline{R_H})$
2004/05	0.095	-0.09	-0.0086
2005/06	0.065	0.31	0.375
2006/07	0.82	0.417	0.342
2008/08	-0.424	-0.058	0.026
2008/09	-0.54	-0.302	0.163
	Total		$\sum(R_N - \overline{R_N})(R_H - \overline{R_H}) = 0.8974$

Note: $(R_N - \overline{R_N})$ from appendix B (II) and $(R_H - \overline{R_H})$ from appendix B (III)

We have,

$$\text{COV}\ (R_N - R_H) = \frac{\sum[(R_N - \overline{R_N})(R_H - \overline{R_H})}{n} = \frac{0.8974}{5} = 0.1795$$

Now,

Correlation between SCBNL and Nabil BL

$$\rho_{SN} = \frac{COV(R_N, R_H)}{\delta_N X \delta_H} = \frac{0.1795}{0.48 X\, 0.272} = 1.3748$$

Note: δ_N from appendix B (II) and δ_H from appendix B(III)

Where,

$COV(R_N, R_H)$ = Covariance of return between Nabil BL and HBL

ρ_{NH} = Correlation between Nabil BL and HBL

δ_N = Standard Deviation of Nabil BL

δ_H = Standard Deviation of HBL

Appendix B (XVI)

Calculation of Correlation between SCNBL(S) and HBL (H)

Calculation of Covariance of return of given two stocks

Year	$(R_S - \overline{R_S})$	$(R_H - \overline{R_H})$	$(R_S - \overline{R_S})(R_H - \overline{R_H})$
2004/05	0.07	-0.09	-0.0063
2005/06	0.32	0.31	0.0992
2006/07	0.24	0.417	0.1001
2008/08	-0.17	-0.058	0.0097
2008/09	-0.45	-0.302	0.1359
	Total		$\sum(R_S - \overline{R_S})(R_H - \overline{R_H}) = 0.3386$

Note: $(R_S - \overline{R_S})$ from appendix B (II) and $(R_H - \overline{R_H})$ from appendix B(III)

We have,

$$\text{COV}\ (R_S - R_H) = \frac{\sum[(R_S - \overline{R_S})(R_H - \overline{R_H})}{n} = \frac{0.3386}{5} = 0.0677$$

Now,

Correlation between SCBNL and NBL

$$\rho_{SN} = \frac{COV(R_S, R_H)}{\delta_S X \delta_H} = \frac{0.0677}{0.28 X 0.272} = 0.8889$$

Note: δ_S from appendix B (II) and δ_H from appendix B (III)

Where,

$COV(R_S, R_H)$ = Covariance of return between SCBNL and HBL

ρ_{SH} = Correlation between SCBNL and HBL

δ_S = Standard Deviation of SCBNL

δ_H = Standard Deviation of HBL