CHAPTER -I

INTRODUCTION

1.1 Background of the Study

In economic development of the country, like in other sectors, active participation of private sector in financial sector will play an important role. In order to enhance the role of this sector in economic activities, it is necessary to flow financial resources easily and in a simple manner which would, in turn, help to achieve desired results from the economic development. Though the present development and expansion of financial sector are directed towards the same objective, the country has not been able to realize the desired outcome. For this, there might be various responsible causes, one of them is the poor capital market condition. The capital market of Nepal is small and it is at early stage of growth. There is a problem of asymmetric information between management of newly established Nepalese companies and Nepalese investors who have poured their funds therein.

Nepal is a least developed and landlocked country with an area of 147,181 sq. km. and around 2.5 crore population, lies in the lap of the Himalayas between the two giant neighbours China and India. These two countries have been linked with Nepal from the time immemorial by geographical, cultural, economic and social ties. The economic growth of Nepal is quite dynamic with favourable economic indicators, viz., stable prices, strong balance of payments position and annual economic growth of more than 4% during the decade of the 1990's. These descriptions, however hide the fact that Nepal is an least developed country with widespread poverty and a GN Per-capita income of US 380 dollars and GNP US$ 6 billion in fiscal year 2007/08 (NRB, 2007). Although, Nepal is rich in water resources, low cost manpower, and forestry etc. The economic development of any country requires the activities of productive sector. Which in turn, is the result of investment venture in productive enterprises there need a huge amount of funds or capital and good national environment to establish these type of enterprises. For

the existence, smooth growth, operation and development of existing enterprises and companies there is necessity of both short-term and long-term capital investment within the economy to be the productive enterprises. So, for the productive enterprises the required capital can be obtained only from the financial institution, and security market or from any individual investors (NRB, 2006).

Present world economy has been more competitive and complicated. In this situation stock markets (capital market) have been a global phenomenon regardless of the size of the economy of any particular nation. The main role of the capital market is to allocate the economy's capital stock among various firms and industries involving in trading, investment and production dimensions. Capital market mobilizes unproductive saving to productive investment; it plays very important role in the advancement of growing economy. Thus the stock market is a place where shares of listed companies are traded or transferred from one hand to another at a fair market price through the organized brokerage system. Principally stock market refers to the secondary market for securities where as primary market refers to the market for new issues. In secondary market, to make transactions, primary role is performed by the brokers, in exchange they receive commissions. Therefore they are the backbone of stock market growth and its operation. The major function of stock market is to provide ready and continuous market for the purchase and sales of securities at a competitive price there by, imparting future market ability and liquidity to then securities prices play an important role by providing the scare recourse and investor s can choose among the securities that represent ownership of firms activities (performance) under assumption that securities present at any firm "fully reflect" all available information.

Securities are financial assets that form the part of an investor's wealth. Common stocks, preferred stocks, bonds, convertibles, warrants, options, rights, futures, etc. are examples of securities. Security is not an age-old investment alternative in our country. The history of corporate securities in Nepal dates back to 1936 A.D. when Biratnagar Jute Mill issued 8,000 ordinary shares of Rs.100 each for the first time. A year later, Nepal Bank Ltd too issued ordinary shares of the same par value. Biratnagar Jute Mill was also the first

corporate body to issue debentures of Rs.500 each in early 1936. Yet other significant developments related to capital markets were – introduction of the Company Act in 1964, the first issuance of Government Bond in 1964, and the establishment of Securities Exchange Centre Ltd. in 1976 (Shrestha, et al., 2003: 21).

The number of commercial banks has been growing considerably in Nepal after the introduction of liberalized financial policy by the Government in early 1980's. And this has reached to a greater height after reestablishment of democracy in 1990. Today, there are 26 commercial banks operating in Nepal as far as the latest data of adopting Prime Bank Limited is concerned. However, in 1984, there were only two commercial banks. Despite many of these banks are foreign based joint venture companies. Common stocks have been issued to the general public and are the major source of their capital funds (Nepal Rastra Bank; Monthly report; 2007).

In Nepalese context Nepal's capital market as developing one in comparison to other big and developed capital market characterized basically as a low trading volume, absence of professional brokers, limited movement of stock price. After the restoration of democracy (in 1990) by the then interim government because of worldwide whim of privatization and economic changes have been brought in the country as following the economic doctrine of these developed countries where the economic are based on stock market development, according to this change stock market also get new life blood i.e. reformulation by separating security exchange centre (sec) into two distinct entitles Security Exchange Board(SEBO) and Nepal Stock exchange limited (NEPSE).

Nepal Stock Exchange, a solely organized securities exchange market in Nepal, was established in 1993. It has been named for Securities Exchange Center which had been established with the objective of facilitating and promoting the growth of capital market. Nepal Stock Exchange now has objectives of imparting free marketability and providing liquidity to the government and corporate securities by facilitating transactions in trading floor through market intermediaries. It is the place where securities are traded upon. Amongst the listed companies, commercial banks are the most performing ones.

Common stock transactions of this sector hold major portion of total transaction. The difference between market price and paid up price of common stock of commercial banks are higher than that of any other companies. Fluctuation in prices of commercial banks' stocks usually gets major issues in stock market. In this regard, it is important to understand what factors really affect the market price of common stock of commercial banks (Bhattarai; 2005: 2-4).

SEBO was established as an apex regulator of the securities market in Nepal by HMG/N on June 7, 1993, under the Securities Exchange Act, 1983. It is solely responsible for framing policies and programs required in securities market, registering, monitoring, licensing, supervising and conducting research and various studies in the field of securities and on behalf of the investors. It is a board consisting of seven members including a Chairman. SEBO, in order to implement its policies and programs effectively, has two departments, six divisions and ten sections in the organizational structure. The main object of SEBO is to regularize and manage the securities market and protect investors' rights (http//www.sebonp.com).

After lending peace or including Maoist n government the price of stock highly volatile in increasing rate. Trading system of the stock market is also hanged. It is performed by the electronic device (computerized), thus the stock market in Nepal is burning issue.

A simple economic phenomenon that the price is determined by the interaction of demand and supply also remains effective in case of common stock pricing. The forces of supply and demand interact to determine a stock market prices. Prices move in the trends because of an imbalance between supply and demand. When the supply of a stock is greater than the demand, the trend will be down as there are more sellers than buyers. But the question arises what are the factors that actually affect the demand and supply of common stock. What are the financial and non-financial factors and to what extent do affect the market price?

Despite of several efforts to promote the capital market, our capital market is still passing through infancy. The listing of securities in the secondary market is limited to only securities of a few companies. Till the date of this study, the numbers of companies listed in NEPSE are 148. Among them, the most traded ones and so called reliable in the public image are of financial sectors, especially, commercial banking sector, which comprises of 17 listed banks (http//www.nepalstock.com). Study of market efficiency and the investors' behavior provides some idea regarding the level of advancement of security market. Although overall economy and capital market is still considered to be young, the explosive growth of new stock listing and volume of shares in Nepal Stock Exchange (NEPSE) has attracted considerable interest from the investors. In this context, it is interesting to investigate the efficiency of market and the investors' rationality, formation of price, slacking of price, which may provide an empirical explanation to identify the situation of Nepalese stock market.

1.2 Statement of Problems

Capital marketing concept in Nepal is not so long. The capital market has been affected and trapped by various mysterious condition due to different economic and non-economic factors. In Nepalese market several new practices are emerged. During this period a number of initial public offering were made. Many new stocks have been listed in NEPSE. By now a newly established banking industry are emerged as the largest partner in stock market. Similarly the trend of stock price is being fluctuated sometimes the stock price becomes too very high because of poor performance of the listed companies. Decrease in share price due to the lack of perfect information about investment.

Investors purchase the stocks of the commercial banks either in the primary market or in the secondary market. Most of these investors are not aware of the financial strength of the companies and they do not analyze companies' financial performances as well before investing their funds through secondary market. The market price of common stocks does not seem to be in accordance with the financial indicators. Instead, there has been major influence of rumors rather than strength of the companies in determination of the market

prices of shares. Market price per share (MPS) of foreign joint venture commercial banks has been found to be higher than MPS of other banks other sectors too. Moreover, it will not be inappropriate to say that the overall NEPSE is depended upon the MPS of such 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 the efficient market, MPS fully reflect all the historical information's publicly available. Now the question of efficiency of the Nepalese share market arises. Higher amount of share prices may be the outcome of the inefficient market behavior. Many commercial banks do not provide timely financial statement or annual report to the investors. The dubious and hazardous movement of the share prices has no sound fundamental backing of analysis and relationship to past results revealed in limited calculated dividend yield, net worth, and price multiplies. The investors conclude that there has been foul play using inside information. The reaction is based on the assumption of strong form of the market efficiency. The security exchange act strictly prohibits the misuse of inside information but the regulating authorities can make no advance notice of how there is the 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 these aspects in the Nepalese context. Most of the investors are investing their funds haphazardly without considering risk involved in their investments. That's why, the major issues might be whether the MPS of listed companies are really representing the financial indicators i.e. NWPS, DPS, EPS.

The main problem in the stock market is the lack of knowledge for its regular Tory framework and market operations. Proper attitudes and knowledge of decision makers are very much necessary foot an effective policy framework. Fundamental requirement go missing when they have little knowledge about the issues. There is various causes that make fluctuation of stock price mainly two factors economic and non-economic factors are remarkable. The Nepalese stock market is suffering from a low trading volume because of professional brokers, early stage of growth, limited movement of share price

and information available confused which stock is bad and which stock is good. The fluctuation of stock market price is mainly due to unfair stock market practices that went undetected for long period in Nepal stock market.

The problems, which have to face by the stock market, can be given as following:-

- Illiterate masses are also one of the reasons hampering the development of stock market in Nepal.
- Low amount of capital formation is the reasons responsible for the slow growth of capital market in Nepal.
- Lack of confidence and rational decision while investing in securities in another reason for the fluctuation of stock market.
- Several legal formalities to be under taken while marketing of securities likewise the frequent changes in main problem of slow movement of stock market.
- People in Nepal usually prefer investing their securities I the same traditional way prevailing since longtime. Example land, building and others securities.

The main concern the problem is to understand the behavior of prices of shares in the organized market places where the trading actually takes place. Moreover, to understand the cause of changes in the market price of stock. So the study will be focused on the following problem related to the subject chosen:

- What is the stock price behavior or trend of the commercial banks?
- Is there any specific relationship of MPS with fundamental financial indicators i.e. DPS & EPS or is the trend of MPS running in accordance with these financial?
- Are the common stocks of commercial banks equilibrium priced?
- What is cause of the fluctuation in stock price?
- What is position of commercial bank listed in stock market?

1.3 Objectives of the Study

The main objectives of this study are as follows:

- To provide a glimpse of the present to Nepalese stock market.
- To analyze the share price behavior of some commercial banks listed in NEPSE.
- To examine the risk involved in the common stock investment of the sampled commercial banks.
- To evaluate return and risk proportion of investment on stock of sampled commercial banks.
- To examine the relationship of MPS with DPS and EPS.

1.4 Significance of the study

Today's growing number of the interested investors and the individual organization, growing investment bankers etc. All are eager to know about the behavior of the capital market in Nepal. So, this study is conducted to give up confidence to the investors and interested parties. In reality, the Nepalese stock market is suffering from a low trading volume absence of growth, limited movement of share price and information available to the investors. The investors are not fully informed. The investors are confused which stock is good and which stock is good the market research is expected to be very useful for further researchers. The research will be helpful to the Nepalese government for making polices. It gives emphasis to invest in new concept in today's age. The significance of the study to different people and sector can be presented as follows:

Significance to investors: The study will be able to provide the data and other kinds of information about the financial performance of individual banks as well as the whole commercial banking sector, which will be of great significance to prospective as well as existing investors in making investment decisions.

Significance to interested parties and researchers: This study will be of great use to the various parties involved in the trading of shares of commercial banking sector. Furthermore, this study has opened up ample space for interested groups and researchers to conduct various detailed studies on this or related topics.

Significance to general public: The study will be of great importance to the general public as well in order to gain some useful information regarding the price formation mechanism and the consequences of some relevant factors on prices of common stock.

Significance to policy makers and controllers: The study has tried to trace out the various factors that form or help in formation of prices of common stocks of commercial banks. Thus, I think, this study will also helpful for policy makers and concerned regulating bodies to have a glimpse on the mechanism of share price formation in the secondary market. Consequently more outstanding and investment friendly rules and regulations could be brought forwarded on behalf of the general investors.

In this way, this study contains a lot of significance to various parties and groups, and therefore the study is worthwhile not futile.

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 will be 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 outcomes of 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 market.
- For the purpose of the study only common stock or ordinary stock will be taken.
- There might be various techniques and method to perform the study on stock price movement but the study will be focus only the run test, correlation and regression analysis risk and return, MPS, DPS and EPS, sensitivity analysis and some ratio analysis.
- The study will be done for the particular fulfillment for MBS degree in management. So it is not a comprehensive study.
- The constraint of time and financial resources do contribute to the limitation of study.

1.6 Organization of the Study

The whole study is divided into six different chapters.

Chapter-1: Introduction

Chapter-2: Literature Review

Chapter-3: Research methodology.

Chapter-4: Data presentation and Analysis.

Chapter-5: Summary, Conclusion and Recommendation.

At the end of the research, bibliography and appendices are also presented.

CHAPTER-II

REVIEW OF LITERATURE

This chapter reviews the related literatures of the study. Review of literature is one of the most important part of the thesis writing. This review has been systematically and effectively done by studying various books, journals, newspaper, magazine, old thesis, dissertation and very useful suggestion of the investigators, and experts of the related field. For this study prospectus, articles, and memorandum of the selected sampled of listed companies are also considered, referenced and reviewed.

2.1 Introduction

This chapter provides some glimpse on the literature that is available in the topic. Specifically, it includes those studies conducted outside the country by academicians and scholar similarly same of the available relevant studies done in side the country are also reviewed.

The first section of this chapter describes about the theories of stock price behavior. It includes the fundamental analysis and efficient market theories. The second section is confined to review of those literature carried out previously. This section includes the studies conducted in the foreign con text as well as Nepalese context.

The over half a century debate in the financial community regarding the pricing of a security has intensified over the last decade. As early as the 1970s the theory of market efficiency became the accepted model within most academic circles. The theory suggested that securities prices fully reflected all currently available information and the history of stock prices seemed to furnish little or no predicative power over future price fluctuations. Furthermore Jones (1968) demonstrated that the prices of securities appeared to absorb new information so quickly and efficiently that randomly selected portfolio showed returns to, if not in excess of the returns generated by portfolios managed by professional managers. Much of the earlier work by Kendall (1953),

Osborne (1959), Alexander (1964) and Moore (1964) indicated that there was practically no correlation between stock returns over time.

In this present context the investment sector is getting flourished in recent years as other economic sectors. Today most of the developing countries are boosting their economic development through the contribution of this investment sector. Business cycle theorists felt that tracing the evolution of several economic variables over time would clarify and predict the progress of the economy through boom and bust period.

Security analysis is one steps preformed in the investment process. It involves examining several individual securities (or group of securities) within the board categories of financial assets. One reason to examine securities is to identify those that seem miss-priced. In the case behavior of stock market prices, there are mainly two approaches i.e. classical approach and efficient market theory approach. Classical approach considers the market is inefficient whereas the efficient market theory argues that there exists the efficient market.

2.2 Conceptual Framework

Before getting into the core subject matter of the share price behavior of common stock in the market it is imperative to be acquainted with the general concepts of the share and other related matters sub section will be explaining the conceptual matters of he capital market.

2.2.1 Common Stock

Common stocks represent ownership capital in a company. The holders who own the shares of common stocks are called shareholders or stockholders. They are the legal owners of a company. Common stocks represent the permanent and vital source of capital since they do not have a maturity date. Shareholders are entitled to receive dividends as return for their capital contribution to the company. The amount and the rate of dividend is fixed by the company's Board of Directors. Common stock is therefore known as the

variable income security. Being the owners of the company, stockholders bear the maximum risk of ownership. They are entitled to dividends after the claims of others fixed income securities are satisfied. Similarly, at the time of liquidation of a company, they are the ultimate claimers on assets that are left after settling various outsiders (Pandey, 1995: 905).

The commons stocks are issued by the firms to raise ownership capital and the investors buy them with the expectation that they receive a share of profit periodically. The common stocks legally represent the equity of business firms, and the holders are the owners who share all the profits and losses of the business. They enjoy all earnings after meeting the obligations of interest on debts and dividends on preferred stocks. Thus, they enjoy all net benefits of the business by assuming the risk of losing their capital (Pradhan, 1996: 132-133 & 333).

2.2.2 Stock Certificates

The ownership of a firm's stock has typically been represented by a single certificate with the number of shares held by the particular investors noted on it such a stock certificate is usually registered, with the name, address, holding of the investor included on the portion's books. Dividend payment, voting material, annual and quarterly reports and other mailing are sent directly to the investors, taking into account the size of his or her holding.

Shares of stock held by investors may be transferred to a new owner with the Assistance of either the issuing corporation or more commonly its' designated transfer agent. This agent will cancel the old stock certificate and issue a new one in its place made out to the owner. Frequently a register will make sure that this canceling and issuing of certificates have been done properly. Usually banks and trust companies act as transfer agent and registers. Many stockholders have chosen to avoid these rather cumbersome procedures. Instead depository arrangement are used which substitute computerized records for embossed certificates. However the above mentioned process may not go exactly to the

Nepalese practice but in the theoretical ground these are the procedures to be followed when executing the shares transaction.

2.2.3 Security Market

Security markets exist in order to bring together buyers and sellers of securities, meaning that they are mechanisms created to facilitate the exchange of financial assets. There are many ways in which security markets can be distinguished. One way has already been mentioned primary and secondary markets. Here the key distinction is whether or not the securities are being offered for sale by the issuer. Interestingly, the primary market itself can be subdivided into seasoned new issue refers to the offering of an additional amount of an already existing security, whereas an unseasoned new issue involves the initial offering of a security to the public. Unseasoned new issues are often referred as initial public offering or IPO's (Sharpe, Alexander & Jeffery, 2000: 9-10).

a. Primary market and secondary market
b. Money and Capital market

Primary Market

A primary market is the place, where corporation and government issue new securities. All securities, whether in money or capital markets are initially issued in the primary market. This is the only market in which the company or government is directly involved in the transaction and receive direct benefits from issue that is the company actually receives the proceeds from the sale of securities. The term 'primary market' is used to denote the market for the original sale of securities by an issuer to the public. (Bhattarai, 2005:7)

Secondary market

Secondary market is the market for the existing securities second hand securities are bought and sold in the secondary market. Its main function is to provide liquidity to the purchasers of securities. The secondary market is not keeping pace with the growth of the primary market (Bhattarai & Thapa; 2006:4).

Money market:

Money market refers to that financial market in which securities with a short term (one year or less) and highly liquid debt securities are traded. Thus money market comprises the securities that have short maturity period (life span), easily marketable, liquid and even lower risk in comparison to other securities (Bhattarai & Thapa, 2006:4).

Capital market

Capital market refers to the financial market in which long-term securities are traded. Specifically speaking, securities having life spans of more than one year are traded in the capital market. Long term financial instrument such as stocks issued by corporation are basically traded in capital market (Bhattarai & Thapa, 2006:4).

2.2.4 Financial intermediaries:

Financial intermediaries (financial institution) are organizations that issue financial claims against themselves and use the proceeds to purchase primarily the financial assets of others.

2.2.5 Market price of shares

The market price of any asset, indeed, depends on the future earning power of the asset or the value of an asset depends on the future cash flows that the asset is expected to generate (Pradhan, 1996: 2).

2.2.6 Buying and selling of stock

Various people are likely to be involved, when a stock is sold and bought. Although it is possible for two investors to trade with each other directly, usually the brokers, dealers and markets provide the service (Sharpe, Alexander & Bailley, 1996:21). When buying or selling the common stock the investor places an order involving a round lot or both. Generally round lot means that the order is for 1000 shares multiple of 100 shares. An odd lot orders generally are for 1 to 99 shares.

2.2.7 Market Size

Relative's market capitalization and the number of listed companies can measure stock market size. The market capitalization ratio is determined by dividing the value of all share listed on a national exchange by the host country's gross domestic product (World Bank, 1995).

2.2.8 Market Liquidity

Liquidity or the ability to buy and sell securities is indicated by the two measures. One is the total value of share traded on the stock exchange dividend by GDP. The second measure of liquidity is the turnover ratio, the value of total shares traded divided by market capitalization (World Bank, 1995).

2.2.9 Market Concentration

Concentration is determined by computing the share of market capitalization for the largest stock on the exchange (World Bank, 1995).

2.2.10 Market Capitalization

Market capitalization is the market value of listed shares. In other words it is the product of closing market price and the number if listed share of a company of companies.

2.2.11 Volatility

Volatility is indicated by 12 month rolling standard deviation estimate based on the market returns. Although volatility is not necessarily a sign of more or less stock market development, lower volatility generally reflects a more developed stock market (World Bank, 1995).

2.2.12 Profit Maximization or Wealth Maximization

Actually profit maximization is the objectives of any business firms. But in the modern age, it has been explained as a traditional concept. This concept states that action that increase profits should be under taken and those that decrease profits are to be avoided. It means, it prefers to a situations where output exceeds input. New approach; wealth

maximization or value maximization becomes in the long run objectives of business organization due to its own limitation. It takes into consideration the time value of money and satisfies suitable operational objectives of financial courses of action i.e. quality of benefits, timing of benefits and exactness. So, it emphasis to maximize the shareholders wealth or to create value of the company (Pandey,1995:56).

Generally the value or wealth can be expressed more explicitly in following ways:

$$W = \frac{A_1}{(1+K)^1} + \frac{A_2}{(1+K)^2} + \frac{A_3}{(1+K)^3} + \ldots\ldots\ldots + \frac{A_n}{(1+K)^n} - C$$

$$= \sum_{t=1}^{n} \frac{A_n}{(1+K)^n} - C$$

Where,

$A_1, A_2 \ldots\ldots\ldots A_3$ = Stream of benefit expected to occur a course of action is adopted.

C = Cash out lay or cost of action

K= Discount rate.

W=Value or Worth

To maximize of the stock, the financial manager should consider following factors:

- Project earning per share.
- Timing of the earning stream.
- Use of debt.
- Dividend policy.

Hence, the wealth maximization principal implies that the fundamental objectives of a firm should be to maximize the market vale of its shares.

2.2.13 Stock valuation

Financial managers use different analytical techniques for valuing common stock. The stockholder experts regular earnings in the form of dividends and capital gain by upward movement of the stock price. To maximize the stock price valuation model can be used as important tools. Mainly three basic models can be used to valuation of stock (Pike & Neale, 1996:76).

Stock Valuation Model

Net Assets Value Model

$$NW = TA - (CL + LTD)$$

Dividend Value Model

$$Po = \sum_{t=1}^{n} \frac{D_1}{(1 + k_e)}$$

Earning Valuation Model

$$P_o \; X P/E \mid EPS$$

Source: - Richard Pike & Neale (1996). Corporate finance and investment decision strategy India.

Where,

NW = Net worth

TA = Total Assets

CL = Current liabilities

Po = Value of stock today

LTD= Long Term Debt

Do = Dividend expected in nth year

K_e = Cost of equity capital

T = 1, 2, 3….n year

P/E = price earning ratio

EPS = Earning per share

2.2.14 The General Awareness of Risk

Some of the sources of uncertainty that contribute risk of investment are citing below:- (Francis, 1991).

Interest Risk

Interest rate risk is destined as the potential variability of return caused by changes in the market interest rates. More succinctly, value of securities move inversely with changes in the market rate of interest. In more general terms, if market interest rise, then investments' values and market prices will fall, and vice versa. The variability of return that results in interests risk. This interest rate risk affects the price of bonds, stock, real estates, gold, puts, and calls future contracts and other investment as well.

Purchasing Power Risk

Purchasing power of risk is the variability of return and investor/suffers because of inflation. Economists measure the rate of inflation by using a price index. The consumer price index (CPI) or simply price index (PI) is popular coinage to the changes in the concept. Rate of inflation directly affects rate return, hence the changes in the purchasing power cause the price of securities move that result the risk.

Bull- Bear market Risk

As its name suggests, bull-bear market arises from the variability in market returns resulting from alternating bull and bear market forces.

When a security index rises fairly, consistently from a low point, called a trough, for a period of time, this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next through is called a bear market. it is inferential to quote that bear market is followed by bull markets that usually rise more than enough to compensate for the bear market losses. But, the alternating bull and bear market forces create a perennial source of investment risk.

Management Risk

Though many top executives earn princely salaries, occupy luxurious offices, and wield enormous power within their organization, they are mortal and capable of making a mistake or a poor decision. Further more, errors made by business managers can harm those who invested in their firms. Hence, it also is capable of poring risk to investment.

Default Risk

Default risk is that portion of an investment total that results from changes in the financial integrity of the investment. For instance, when a company that issues securities moves either further away from bankruptcy closer to item these changes in the firms financial integrity will be reflected in the market price of its securities. The variability of return that investor's experiences as results of changes in the creditworthiness of a firm in which they invested is their default risk.

Liquidity Risk

Liquidity risk is that portion of an asset's total variability of return, which results from price discount given or sales commission paid in order to sell the assets without delay.
Perfectly liquid assets are highly marketable and suffer no liquidity price discount costs. Illiquidity assets are not readily marketable either price discounts must be given or sales commission must be paid or both of these costs must be incurred by the seller, in order to find a new investor for an illiquid asset.

Call ability Risk

Call ability risk is that portion a security's total variability of return that derives from the possibility that the issue may be called call ability risk command a risk premium that comes in the form of a slightly higher average rate of return.

Convertibility Risk

Convertibility risk is that part of the total variability of return from a convertible bond or convertible preferred stock that reflects the possibility that the investment may be

converted into the issuer's common stock at a time or under terms harmful to the investor's best interest.

Political Risk

Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the efforts of various groups to improve their relative positions increasing the variability of return for the affected assets.

Regardless of whither the changes that cause political risk are sought by political or by economic interests, the resulting variability of return is called political risk if it is accomplished through legislative, judicial or administrative branches of the government.

Industry Risk

Industry risk is that portion of an investment's total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and /order quotes on the products produced by an industry product-or industry –related taxes, industry wide labor union problems, environment restrictions, raw material availability, and similar factors interact and affect all the firms in an industry simultaneously. As a result of these commonalties, the price of the securities issued by competing firms tends to rise and fall together.

Total Risk

The uncertainties discussed above are the major sources of investment risk, but by no means do they make up an exhaustive list. If all the uncertainties could be listed, they would add up to total risk, or total variability of return.

2.2.15 Capital Assets Pricing Model (CAPM) or (SML)

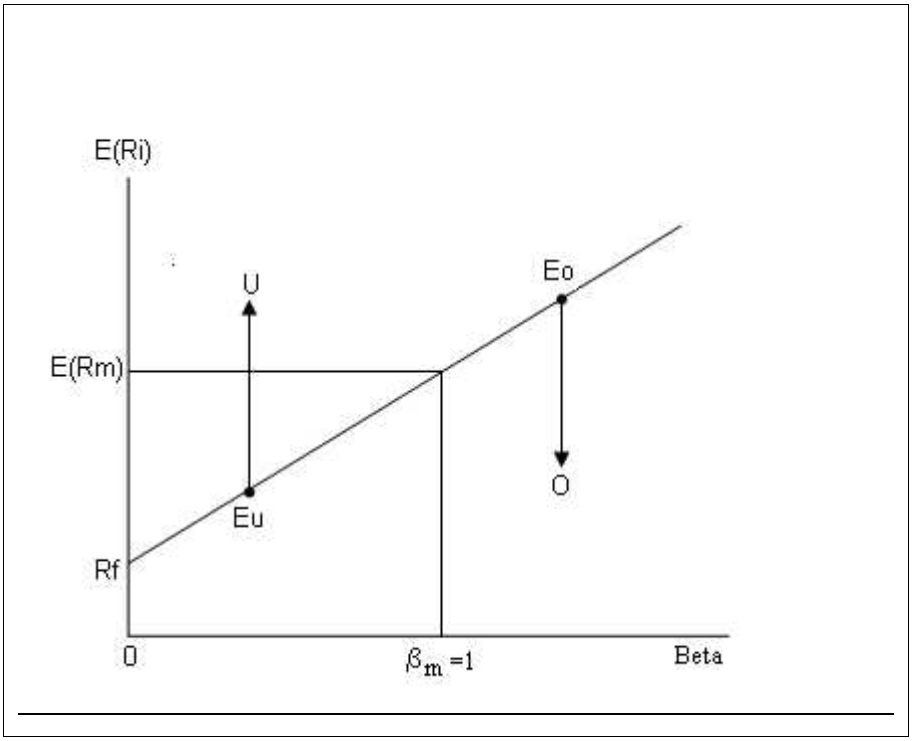
Sharpe & Linter developed, 'The capital assets pricing Model' (CAPM). This model provides the intellectual basis for a number of the current practices in the investment. "The capital assets pricing model specifies the relationship between risk and required rate of return on assets when they are held in well diversified" (Bhattarai & Thapa 2006:177)

CAPM is based on the following assumptions.

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

Figure-1

The Capital Assets pricing Model or SML



(Sources: Bhattarai & Thapa 2006: 199)

Hence, the CAPM or SML is relationship in which the expected rate of return of the individual asset is a leaner function of that asset's systematic risk as represented by beta (ß), symbolically. The grater the beta of a security, the grater the risk and greater the expected return required. The lower the beta, the lower will be the risk.

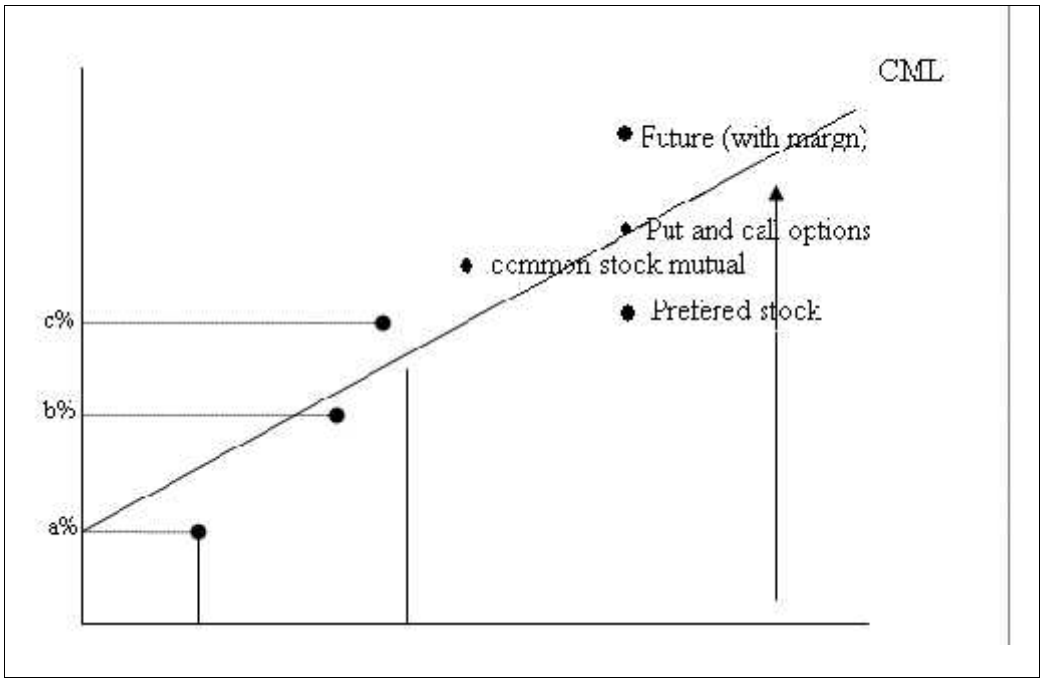
2.2.16 Capital Market Line (CML)

If borrowing and lending opportunities are included in the chart analysis, a linear set of investment opportunities is appeared called capital market line (CML) emerges. It is the locus of the portfolios that wealth seeking risk-averse investors will find more desirable than any other portfolios. CML illustrates the positive relationship between risk and average return. So, it is always be positive sloped because investors are risk averse i.e. sleepless.

The main focus of investment graphed in risk-return space which has (1) the maximum expected rate of return in their risk class or (2) the maximum risk at whatever rate of return is selected. The efficient investments are called efficient portfolios because individual assets are dominated and will not be able to attain the efficient frontier (Sharpe, Alexander & Bailey, 1996:19). So, if it is constructed it will be found convex towards expected rate of return axis in risk rate space.

Figure-2

The Capital Market Line (CML) and other Investment Opportunities



(Source: Jack Clark Francis and W. Taylor Richard (1991:19).

From the Fig. 2, it is noted that CML dominated every individual asset. The portfolios having risk reducing power is needed to reach a positive in risk-return space that is on or near the CML. CML is assumed to be the market equilibrium situation and is the locus of the most desirable, or most dominant, investment portfolios. CML concentrates how to from a portfolio that is efficient enough to lay on the CML.

2.3 Theories of Stock Price Behavior

2.3.1 Conventional Approach

One of the major divisions in the ranks of financial analysis is between those using fundamental analysis (known as fundamental analysts or fundamentalists) and those using technical analysis (known as technical analysts or technicians). Conventional approach includes technical analysis and fundamental analysis.

2.3.1.1 Technical Analysis

Technical analysis involves the study of stock market prices in an attempt to predict future price movements. Past prices are examined to identify recurring trends or patterns in price movements. Then more recent stock prices are analyzed to identify emerging trend or patterns that are similar to past ones. This analysis is done in the belief that these trends or patterns repeat themselves. By identifying an emerging trend or pattern, the analyst hopes to predict accurately future price movements for a particular stock (Alexander, Sharpe & Bailey, 2000:12).

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

The technician an usually attempts to predict short-term price movements and thus makes recommendations concerning the timing of purchase and sales of either specific stocks or groups of stocks (such industries) or stock in general. It is sometimes said that fundamental analysis is designed to answer the question “when? More especially the technical analyst seems to be trying to forecast short-run shifts in supply and demand that will affect the market prices of one or more securities. (Alexander, Sharpe & Bailey, 2000:844).

Typically, the technical analysts record historical financial data on charts, study these charts in search of patterns that they find meaningful, an endeavor to use the patterns to predict future prices. Some charts are used to predict movements of market index and, still others are used to predict the function of both individual assets and the market (Francis, 1991:522).

Technical analysis maintain that the price of a share at any time (present price) is the balance struck by buyers and sellers at a point in time price movements take place on account of changes in buying and selling pressures. This occurs in account of diverse internal and external factors (profits, political environment, predictions and the likes).

Prices stabilize when equilibrium between buyers and sellers is achieved. They believe that record of price movements over a period of time in the past, as the whole theory is based on the assumption that history repeats itself. That human nature does not change and that man is likely to repeat his patterns of past movements will repeat them in the future (Palat, 1991:870).

The basic assumptions underlying technical analysis are as follows:

1. Market value is determined by the interaction of supply and demand.
2. Supply and demand is governed by numerous factors, both rational and irrational.
3. Security prices tend to move in trends that persist for an appreciable length of time, despite minor fluctuations in the market.
4. Changes in a trend are caused by the shifts in supply and demand.
5. Shifts in supply and demand, no matter why they occur, can be detected sooner or later in charts of market transactions.
6. Some Chart Patterns tend to repeat themselves.
7. The pattern trends repeat it (Reilly, 1986:348).

Various studies evidenced that technical analysis is useful in enabling investors to beat the market. Technical analysis, however, attempts to predict future stock prices by analyzing past behavior of stock prices. In general, tomorrow's stock price is influenced by to day's price. The direction of price change is important as the relevant size of change. With the application of various tools, the technicians attempt to correctly catch changes in trend and take advantage of them.

2.3.1.2 Technical tools

a) The Dow Theory: this tool originated by Charles Dow, fonder of the Dow Jones Company is one of oldest and most famous technical method of analyzing security prices. The aim 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 sort swing, running from two weeks to a month or more: the third is the man movement, cove rising at least 4 years duration". 28. So, can stay that there are three forces simultaneously affecting the stock prices, tertiary or minor trends. The primary price 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 to which Dow attributes to no significance or ignores the role of this trend.

The Dow Theory employs two indicators called Dow Jones Industrial Average (DJIA) and Dow Jones Transportation Average (DJTA). The DJLA is a key indicator of underlying trends, while the DJTA usually serves as check to confirm or reject that signal (Bodie, Kane & Marcus, 2002:344).

The Dow Theory is built upon the assertion that stock prices tend to move together. If the DIJA is rising then the DJTA should also be rising. Such a simultaneous price movements suggests a strong bull market. Conversely, a decline a both the averages suggests a strong bear market. however if the averages are moving in opposite direction, the stock market is uncertain regarding to direction of future stock prices.

b) Barron's confidence index: in literal sense, the confidence index is defined as the ratio of high grade bonds yields divided by low grade bond yields. The ratio is supposed to revel how wiling investors are to take investment risks. Barron's confidence index is constructed by using Barron's index is constructed by using Barron's index of yield on high grade bonds and 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 issues erroneous singles erroneous signals and should therefore not be used without confirming evidence from other indicators (Francis, 1991:531).

C) Odd lot theory: this theory concerns the purchase and sales of securities by small investors. Thesis investors do transaction of less than 100 shares. Some technicians take the ratio of these odd lot purchases to odd lot sales as an indicator of the direction of future prices. An increase in the index suggests relatively more buying: a decrease indicates relatively more selling. During most of the market cycle, odd lotters are selling the advance and buying the declines.

Odd lotters try to do the right thing most of the time: that is, they tend to buy stocks as the market retreats and sell stocks as the market advances. However, technicians feel that odd lotter is inclined to do the wrong thing at critical turns in the market (Fisher & Jordon, 1995:51).

2.3.2 Fundamental Analysis

The fundamentalist's opinion are that the value if share depends upon the anticipated future stream of returns and corresponding capitalization rates. The capitalization rate is an appropriate risk related cot of equity. Therefore, the value of share, under this model is equal to the present value of future incomes from an equity discounted at risk adjusted capitalization factor.

In this simplest form, fundamental analysis begin with the assertion that the true value of any financial assets equals the present value of all cash flows. , the owner of the asset expects to forecast the timing and size of these cash flows and then converts the cash flows to their equivalent present value using an appropriate discount rate (Alexander, Sharpe & Bailey, 2000 :12).

After estimating the true value of the stock of particular firm. It is compared with the current market price of the common stock to determine whether the stock is fairly priced. Stocks which estimated value or true value is less than their current market price are known as overvalued and vice versa. Fundamental analysis believe that any notable cases of miss pricing will be corrected by the market in the market in the near future, meaning that prices of overvalued stocks will show unusual appropriate and prices of under valued stocks will show unusual depreciation.

Fundamental analysis involves making investment decision based on the examination of the economy, an industry, and company variables that lead to an estimated of value for an investment, which is then compared to the prevailing market price of the investment (Reilly & Brown. 2000:869-70). Fundamental analysis use public information calculates a fundamental value for a share, and then offer investment advice by comparing the fundamental value with the current market price. Fundamental analysis is not possible if capital markets are semi-strong from efficient, since security price will already fully and fairly reflect all publicity available information

The objective of fundamental analysis is to appraise the intrinsic value of a security. The intrinsic value is the true economic work of financial assess. Therefore, fundamental analysis works to find new information before other investors, so they can get into a position to profit from price changes they anticipate. Fundamental analysis work to find new information before other investors, so they can get into a models like:-

- Top- down versus Bottom up forecasting.
- Probabilistic forecasting.
- Econometric models.
- Financial statement analysis. Etc

Some limitations of the fundamental analysis approach are as follows:

1. The approach though sound and basis financial gigues dose suffer from drawbacks and to make this approach work effectively one must be aware of them.
2. The entire fundamental approach is based on a rational scientific analysis of data that the market is rarely rational.
3. The information and analysis it self may be incorrect.
4. Many companies with the help of creative innovative accounting and accounting cosmetics disguise real earnings.

5. The fundamental's estimate of intrinsic value may be incorrect. This is not only possible but also probable than not he has to often forecast growth, profit and other factors without having in his grasp all the facts.
6. The fundamental may not fully understand the economy or the industry, as there are several external factors (Watson & Head. 1998:31-32).

Therefore, fundamental analysis is a never-ending because values changes overtime. Ideally, revision in analysis should occur whenever new information affecting the future benefits to security holder becomes available.

2.3.3 Efficient Market Theory

In a competitive market the equilibrium price of any good or service at a particular moment of time is such that available supply is equated to 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 where shares are always correctly priced and where it is not possible to outperform the market consistently except by luck (Pike & Neal. 1996:41).

There are several concepts of market efficiency and there are many degrees of efficiency, depending on the market. Market in general are efficient when i) Price adjust rapidly to new information: ii) these are continuously 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 different in price changes, the more efficient the market): iii) the market can absorb amounts of securities without destabilizing the prices (Block & Hirt, 1998:420)

In an efficient market, a security's price would correctly reflect the important of variable for that security and would represent an unbiased estimate of his investment value (Cheney & Moses. 1992: 746). The efficient market 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 change rapidly in response to new information. Market efficiency also implies that as new information become available, the market quickly analyzes it, and any necessary price adjustments occur rapidly.

The requirements for a securities market to be efficient are:

1. A large number of rational, profits – maximizing investor exist who actively participate in the market by analyzing, valuing, and trading stocks. These investors are price takers; that is, one participant alone connote affect the price of a security.
2. Information is free of cost and widely available to market participants at approximately the same time.
3. Information is generated in random fashion such that announcements are basically independent of one another.
4. Investors react quickly and accurately to the new information, causing stock prices to adjust accordingly (Charles, 1998: 425).

The degree of market efficiency has important implication for the economy and for investment decision markets. In an economics sense, it is important that security prices provide accurate signals that can be used to allocate capital resources correctly. Miss-priced security would result in incorrect allocations of capital (Cheney & Moses, 1992:746). Although efficient market may be ital and pleasing from an economic perspective, it presents complexity to investors in term of an appropriate investment strategy.

If a market is efficient, then there is a very important implication for market participants; all investment in that market is zero NPV investment. The reason is not complicated, if prices are neither too low not 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 for when they buy securities and firms receive exactly what their stocks and bonds are worth when they sell them.

An efficient market is an assumed perfect market in which there are many small investors, each having the same information and expectations with respect to others. There are no restrictions on investment, no taxes, and no transaction costs; and all investors are rational view securities similarly, and are risk-averse, preferring higher returns and lower risk (Gitman, 2000: 265-66).

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. Although it may not literally be true that all relevant information will be uncovered, it is virtually certain that there are many investigators hot on the trial of most leads that seem likely to improve investment performance. Competition among these many well backed, highly paid, aggressive analysts ensure that, as a general rule, stock prices ought to reflect available information regarding their proper levels (Bodie, Kane & Marcus, 2002:342).

If new information becomes known about a particular company, how quickly do market 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 reflect the new information? If prices respond to all relevant new information in a rapid fashion, we can say the market is relatively efficient. If, instead the information disseminates rather slowly throughout the market and investors take time in analyzing the information and reacting and possibly overreacting to it, prices may deviate from values based on a careful analysis of all available relevant information. Such a market could be characterized as being relatively inefficient (Haugan, 2001:573).

There are three firms of efficient market hypothesis based on type of information used in making market decisions. They are; I) weak-form efficiency, II) semi- strong from efficiency and III) strong-from efficiency. The difference between these forms relates 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 (Haugan, 2001:575]). This hypothesis holds that no investor can earn excess returns by developing trading rules based on historical prices or return information.

Weak form efficiency, suggest that, at a minimum the current price of a stock reflects the stocks own past price. In other words, studying past prices in an attempt to identify miss-priced securities is futile if market is weak form efficient. Although this form of efficiency might seem rather mid, it implies that searching for patterns in historical prices that will be useful in identifying miss-priced stocks will not work (Ross, Westerfield & Jordon, 2003:407).

Under the semi-strong form, all publicly available information is pre assumed to be reflected 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 (Haugan, 2001:573).

The strong-form takes the notion of market efficiency to the ultimate extreme. This form includes private or 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 actions affect the price of the stock, and the price quickly adjusts to reflect the inside information (Haugan, 2001:573).

One obvious way to check the validity of the strongly efficient market hypothesis is to examine the profitability 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, 1991:558). Thus, the strong form of the efficient market hypothesis is equivalent to perfect markets in which the market correctly prices securities adjusting quickly to new information either public or private.

2.3.4 The Random Walk Theory

The weakly efficient hypothesis stipulates that historical price and volume data for securities contain no information, which can be used to earn a trading profit above what could be attained with naïve buy-and-hold investment strategy (Francis, 1991:543). The past prices have no meaningful information to predict future course of price fluctuations, which can be used to earn above average return. The movements of future prices are independent from past prices, so the series of price changes are in random phenomenon.

If the price changes could be used to predict future prices changes, investors could make easy profits. But in competitive markets easy profits don't last. As investors try to take advantage of the information in past prices, prices adjust immediately until the superior profits from studying past prices will be reflected in today's stock price, not tomorrow's. Patterns in prices will no longer exist and prices changes in one period will be independent of changes in the next. In other words, the share price will follow a random walk (Brealey & Myers, 2000: 357-58).

The weak form says that the current prices of stocks already fully reflect all the information that is contained in the historical sequence of prices. Therefore, there is no benefit-as far as forecasting the future is concerned in examining the historical sequence of prices. This weak form of efficient market hypothesis is popularly known as the random-walk theory (Fisher & Jordon, 2000:540).

Of the two hypotheses independence is much more important assumption which means that the previous price changes following the current change will not be influenced by the sequence of preceding price changes. Mathematically, independence means that.

$$p_r \bullet X_t \mathrm{X} X / X_{t\mathrm{Z}1}, X_{t\mathrm{Z}2} \ldots\ldots\ldots X_{t\mathrm{Z}n}{}' P_r \mathrm{X} f X_t \mathrm{X} X \mathrm{A}$$

Where left hand side of the equation is the conditional probability that the price will take the value of X conditional upon knowledge of previous changes X(t-1), X(t-2) ……X(t-n).

The stock market is always subjected to a steady inflow of information, much of which will have an effect on the set of anticipations that constitute price of a particular security. Some of the information has whole market-wide impact such as change in monetary and fiscal policy on security prices. Some other information has an influence upon a group of stock price i.e. industry – wide impact. And still some information such as announcement of dividend, bonus shares may have an influence on the price of a particular security i.e. company –side impact (King, 1996:136).

The random walk theory says nothing more than that successive price changes are independent. This independence implies that prices at any time will on the average reflect the intrinsic value of the security. If a stock's price deviates from its intrinsic value because among other thing, different investors evaluate the available information differently or have different insights into further prospects of 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 its equilibrium position (Fisher & Jordon, 1995:553).

If the random walk hypothesis holds, the weak form of efficient market hypothesis must hold (though no vice-versa). Thus, evidence supporting the random walk model is evidence supporting weak from of efficiency (Elton & Gruber, 1991:404). If prices follow a random walk, price changes overtime are random (independent). The price change fro today is unrelated to the price change on pervious days. Any new information arrived randomly in the market results in the random changes in the prices. Random walk

theory that involves random selection of securities is represented as the modern approach to investment decision.

2.4 Review of Previous Studies

2.4.1 Nepalese Context

There are very few independent studies in finance in Nepalese perspective. On the core concept of capital market and determinates of the stock price in stock market, very negligible studies have been made. Such research studies are made on shareholder's democracy and dividend policy etc. These can provide intellectual ground.

In 1993, Prof. Dr Radhe Shayam Pardhan studies the market behavior in Nepal and concluded that:

- Large stocks have large P/E ratios; large ratio of market value to book value of equity and smaller dividends. P/E ratios and dividend ratio are more variable for smaller stock where as market value to book value of equity is more variable for large stocks.
- Large stocks also have lower liquidity, higher leverage lower profitability, lower assets turnover and lower interest coverage stocks.
- Smaller dividends, lower profitability, lower assets turnover and lower interest coverage for large stocks may be attributing to the fact that most of large stocks are at their initial stage of operation.
- Stocks with large market value to book value of equity have large PE ratio, and lower dividends, .PE ratio are more variable for stocks with large market value to book value ratios and dividend ratios are more variable for socks with smaller market value to book value.
- Stocks with large market value to book ratios have lower liquidity, higher leverage, lower earnings, lower turnover and lower interest coverage. However, liquidity and leverage are more variable for stocks with larger market value to book value ratios while earnings, assets turnover and

interest coverage are more variable for stocks with smaller market value to book value ratios.

- Stocks with large PE ratios have large market value to book value of equity and smaller dividends ratios. However, there ratios of market value to book of equity, and dividends are more variable for smaller stocks than for large stocks.
- Stocks with large PE ratios have lower liquidity, higher leverage, lower profitability, lower assets turnover and lower interest coverage. However, liquidity, leverage, earning, turnover and interest coverage are all more variable for stocks with smaller PE ratios compared to large to large ones.
- Stocks paying higher dividends have higher liquidity, lower leverage, higher earning and higher turnover and higher interest coverage. However, liquidity and leverage ratio are more variable for the stocks paying lower dividends while earning, assets turnover and interest coverage is more variable for the stocks the stocks paying higher dividends.

Another study was conducted by Professor Dr. Manohar Krishana Sherestha in the title of "Shareholder's Democracy and Annual General Meeting (AGM) feedback." This study critically analyzed the situation of common stock investors and the situation is not improved significantly until now.

Though the size of the shareholder population in Nepal has been growing constantly, the government seems to have not taken initiative in formulating the separate Act, which protects the shareholder's right (Sherestha,1995:20-25). However, the need of separate act regarding the protection of shareholder right is questioned.

"Company and other acts relating to financial and industrial sector have provisioned rights of the shareholder as:

I. Voting right
II. Participation in general meeting
III. Right of getting information
IV. Electing as board of director

V. Participation in the profit and loss of the company
VI. Transferring shares
VII. Proxy representation

The collective rights of the shareholders are:

I. Amend the internal by laws
II. Authorize the sales of assets
III. Enter into merger
IV. Change amount of authorized capital

Some public limited companies have floated shares to the general public without having shareholders representation in the board. There are many such companies, which conduct the annual general meetings just to fulfill their desire and do not consider the voice of the majority of the shareholders. Similarly management involvement and government interpenetration in the board election have brought a greater set back in the voting right of the shareholders."

Shrestha argued further to safeguard the investors' interest. "The encouraging and growing confidence of shareholders over their investment seeks an independent inquiry of disclosed comments of prospectus. This helps to satisfy a minimum standard of faith on investment in shares through relying on pros and cons of prospectus. It is therefore, important to dispose everything in prospectus, which could reasonably influence the mind of the prudent investors. Various annual general meeting held by different public limited companies reveal a greater gap between disclosures made in prospects and the actual results, which were reported. In this context the expression of disclosure philosophy and investigation of frauds in prospectus need to be reconciled to check and growing problems in the development of the capital market in Nepal."

In 2004, Pramod Kumar Bhattarai has made his sincere effort to explain about the trend occurring in the share market of Nepal. He expressed his view that the trend which has occur can repeat but not with the same pattern. The securities analysts, who analyze securities presenting the past data on the charts, graphs, figures etc. and forecast whether the price will fall or rise, agree to this theory and say the share prices once turned bearish

definitely turn to be bullish sometime in near future. further, this article suggest that the market price is a function of demand and supply of stocks and the commanding forces behind the demand might be various factors like political, economic, financial, national, international events as well as the information disclosed buy the companies. The various factors make the people either invent in the securities or disinvest (sell) (Bhattarai, 2004:24).

Atma Ram Ghimire in his journal 'New Business Age' (November 2007) entitled. "One year Genesis of Nepal's Share Market" (Ghimire, 2007:47-48) has pointed out "The shares are becoming precious, good yield items now. Observe study and go get now because it will be always too late in future. He has concluded that the growth of Nepalese share market in general is very positive and the share market in last one year has achieved momentum. Share market is able to improve in the required area, the good ones will stay in the market and they get good price. In his report, he has provided some terms of the growth of share market in such way:

- Increasing number of investors
- Transaction amount and numbers
- Automation in floor trading and settlement
- Online trading from broker premises
- Availability of financial resources
- Partial information flow
- Media coverage and reporting

This will be helpful to understand dimension gradually and this will increase the rationality in investors decision and hence the marker efficiency as well.

2.4.2 Foreign Context

All of the empirical work on efficient markets can be considered within the context of the general expected return or “fair game” model; in particular, the expected profits to the speculators should be zero. The pioneer work in this field is sue to French mathematician

Louis Bachelor (1900) who used the data of commodity price during the period of 1894-1998. He concluded that commodity speculation in France was “fair game” that has no expected profits for buyers and sellers. Unfortunately, his insights were so far ahead of the time that was largely unnoticed for a long period until his paper was rediscovered and eventually translated into English and published in 1964.

Additional evidence that security prices follow a random walk was found by Holbrook in 1934. He extensively analyzed commodity prices and noted that speculative price patterns might be shown to be random comparing with artificially generated series of price. According to him, “it has several times been noted that time series commonly possess in many respects the characteristics of series of cumulated random numbers. The separate items in such time series are by no means random in character, but the changes between successive items tend to be largely random” (Halbrook 1934:11-24).

In 1953, Kendall examined the behavior of weekly changes in nineteen indices of British Industrial share prices and in spot prices for cotton (New York) and wheat (Chicago). He found no relationship between share price changes in the current week and the previous week. After extensive analysis of serial correlations, he suggested that “the series looks like a wandering one, almost as if once a week the demon chance or drew a random number from a population of fixed dispersion and added it to the current price to determine the next week’s price” (Kendall, 1953:11-25).

In 1959, H.V. Roberts’s compared Dow Jones Industrial index with simulated price index generated on the basis of series of random numbers for 1956. He found considerable similarity in the graphic of these two series and it was difficult to distinguish between the series of random numbers and the stock market index. Thus, concluded that random movement of the past prices index cannot be used to forecast future share prices. 64 Another study conducted by Osborn, one of the distinguished physicists, ignorant abut the stock market at that time watched the numbers representing stock prices to see whether they conformed to certain law governing the motion of physical objects. He found the movement of stock prices similar to that of the movement of small particles

suspended in a chemical solution so called “Brownian Motion”. Although, Osborne attempted to give the empirical Justification for his theory, most of his data were cross-sectional and could not provide an adequate test. Though his point of view is different, the findings are consistent with Robert’s work (1959) (Robert’s, 1959:145-173).

Alexander (1961) tested the filter, rule technique on the closing prices of two indices, the Dow Jones industrials from 1897 to 1959 and Standard & Poor’s industrials room 1929 to 1959 and reported that in general, filters of all different sized and all different periods yield substantial profits, significantly greater than that of simple buy and hold policy. Finally he concluded that the independence assumption is not validated as description of reality by his data. But after in 1964, he corrected the shortcoming of his previous study were the failure to realize that dividends were cost rather than benefit, Alexander found that his filter rules produced very large rates of return, particularly for small filters. However, when transact on cost are considered, the abnormal returns disappear for all filter rules (Alexander, 1961:7-26).

In 1965, Samuelson though lacked theoretical discussion in his paper, but his findings supports the independence hypothesis of random walk theory in stock price. He concluded that if a market has zero transaction costs, if all available information are free to all interested parties and if all market participants either potential and existing have the same time horizons and expectations about prices, the market will be efficient and prices will fluctuate randomly (Samuelson, 1965:41-49).

In 1966, Fama & Blume used the filter technique to overcome the shortcoming of Alexander’s mechanical rule. They tested the profitability of 24 filters ranging from 0.5% to 50% to buy and hold return of each of the stock of the Dow Jones. Ignoring transaction costs, only two out of thirty is superior to buy and hold policy, when commission are taken into consideration only four out of thirty have positive returns and not comparable with buy and hold return (Fama & Blume, 1966:226). Therefore, according to their demonstration, it seems that filter technique cannot provide returns large than those under a naïve buy and hold policy.

In 1970, Dryden concludes that the share price movements were not random. However in his later study, he used serial correlation and runs analysis to examine the daily closing price of 14 individual stocks of U.K market and supported that the independence hypothesis of successive price change, (Dryden,1970:369-389). Similarly, kemp and Remp's study (1971) was also against the random walk theory. They derived the conclusion that share price movements were conspicuously non-random over the period considered (Kemp & Remp, 1971:28-51).

Rao (1988) concluded the study the weekend price of the eight blue-chip stock for five years from July 1982 to June 1987. He applied serial correlation analysis, runs tests, and filter rule technique. He result from all the tests supported the random walk hypothesis (Rao, 1989:203-218).

Campbell, Lettau, Makiel & XU (2001), "Have individual Stocks Become More Volatile?" use a disaggregated approach to study the volatility of common stocks at the market, industry, and firm levels. It observed that the volatility of the aggregate stock market is not constant, but changes over time, Simple filters such as the rolling standard deviation used by Officer (1973). They examined volatility at four level, first in 1962 to 1997 in firm level by using serial correlation, second market relative volatility using correlation among individual correlation among individual common stock, third in total firm volatility and fourth all the component of volatility with variation in GDP. Finally they concluded that when disaggregate to the level of individual industries, using estimates of industry betas on the aggregate market but still avoiding the estimation of firm-level betas.

Fleming, Kirby & Ostdiek (2006) examined the volatility of the stock return and price. They investigate the link between information and prices. Theory suggests that prices are function public information and order flow (Grossman and Stiglitz (1980), kyle (1985) and Glosten and Milgrom (1985)), order flow is driven by both public and private information as well as investor shocks, which may be rational or irrational. Price can

deviate from fundamental value due to market microstructure, liquidity and hedging effects, and pricing errors can arise from noise trading and the systematic under reaction or overreaction to information. They concluded that in stock and currency markets, it is difficult to distinguish between volatility caused by public and private information flow volatility caused by irrational phenomena such as overreaction and excess trading because information flow and trading occur contemporaneously. They generate hypotheses about how the trading to non-trading period variance ratio in weather sensitive markets compare to those in the stock and currency markets and how the ratios vary across seasons (Fleming, Kirby & Ostdiek. 2006, LXI-6:2889-2927)

Thus the basis of above mentioned review of previous research works, it can be concluded that stock market price shows random movement and the security prices appear to be serially independent. So investors cannot develop any profitable trading strategy using the information of past series.

2.4.3 Review of Unpublished Thesis

Mukti Aryal (1995) conducted his thesis on "The General Behavior of Stock Market" with the following objectives:

- To discuss theoretically the movements of the stock market price changes of an individual common stock market as a whole.
- To develop the empirical probability distribution of successive price changes of an individual common stock market as a whole.
- To examine whether the successive price changes of stock market are independent of each other or not.

Major findings of his study:

- On the basis of run tests and serial correlation, it seems that the independent assumption of random walk model in stock market prices is rejected by the

collected sample data of 21 companies at least as a description of price behavior in Nepal Stock Exchange. The stock price changes are dependent on each other.

- The random walk model of security speculative price behavior has been refuted at least in the Nepalese context, which clarifies that the knowledge of the past becomes useful in predicting the future movements of stock market prices.

- The security, in the past were incorrectly priced either over or under valued as actual market prices of securities do not reflect their intrinsic value. In other words, in the case of sample securities, they are incorrectly adjusted those past information to the present market prices.

- There exists frequent persistence than reaction in the general stock market climate because of the investors' irrational behavior that causes the irrational movement of prices of stock.

- The general stock market of Nepal for the initial period appeared to be inefficient in incorporating the possible appearance of information into the successive price changes. Therefore, the investing publics are not aware of the information available publicly, appropriate in adjusting with the actual market price.

Mr. Sadakar Timilsiana (1997) has conducted research "Dividend and Stock Price." The study was carried out by the data for 16 enterprises from 1990 to 1994.

Objectives of the Studies:

- To test the difference between dividends per share and stock prices.
- To determine the impact of dividend policy on stock price.
- To identify whether it is possible to increases the market value of the stock changing dividend policy or payout ratio.

To explain the price behavior, the used simulation equation model as developed by Friend and Pukett (1964).

Major Findings of the Study

- The difference between dividend per share and stock price is positive in the sample companies.
- Dividend per share affects the share prices variedly in different sectors .
- Changing the dividend policy or dividend per share might help to increase the market price of share.
- The difference between stock price and retained earning per share is not prominent.
- The different between stock prices and legged earning ratio is negative.
- Though there were above-mentioned studies in the context of Nepal, it has overcome necessary to find out whether their findings are still valid.

Timilsina's study was based on 45 observations. The number of companies included in the sample was only 16. Studies on dividends conducted in his context of Nepal are based on secondary data only.

Again, **Jas Bahadur Gurung (1999)** conducted his thesis on "Share Price Behavior of Listed Companies in Nepal" applying statistical tools like percentage, correlation coefficient, bar graphs and line charts for analytical purpose. The main objectives of his study were.

- To provide the conceptual glimpses of capital market.
- To evaluate the trend of trading turnover.
- To analyze the trends in paid up value and market capitalization.
- To analyze the behavior of NEPSE index.
- To analyze the share price behavior of listed companies.
- To identify the market behavior in Nepal.

The major findings of the study are:

- The correlation coefficient of 0.97 between the number of traded and listed companies is significant where as it is negative in trading group and perfectly positive in the case of banking group.

- During the study, the number of transactions in banking group is the highest, It is lower in other whereas groups. Hence, the investment on banking group is highly attractive and liquid.

- The prices of shares are fluctuating during the study period.

- The capital market in Nepal was bullish in the initial periods but it turned bearish in the successive year. In the initial period, share prices, trading turnovers, market index as well as earnings have positively moved except market capitalization, but they have negatively moved in the subsequent years. Thus, now the capital market is passing through the bearish trend in Nepal. There is a lack of investor's opportunities and the economy is passing through the recession year by year.

Likewise, **Bidur Khadka (2002)** conducted his thesis on the topic "A study on the share price behavior (Analysis of financial Institutions)", had the following objectives:

- To examine and evaluate the relationship of MPS with various financial indicators like EPS, DPS, NWPS, ROE, etc.

- To analyze the degree of risk involved in common stocks investment of the sampled companies.

- To identify whether stocks of the sampled companies are over-priced, under-priced or equilibrium priced.

- To present some recommendations based on the findings.

His study concluded that:

- There is not a single financial indicator that has a dominant role to determine MPS. The same financial indicator that has significant role in the fixation of MPS for one company is not significant for another company. The degree of the interrelationship of MPS with different financial indicators varies from one company to another. There is no uniformity in the relationship of MPS with various financial indicators of the sampled companies.

- If considered on the basis of the average data of the past five years, MPS of 10 financial institutions has higher positive correlation with major financial indicators such as EPS, NWPS and DPS and such relationship is significant.

- The public investors are not much aware of or knowledgeable about investment risks. They are investing their funds in different securities on the basis of expectations and assumptions rather than analysis. It is clear from the findings of the risks and returns analysis that most of the companies common stock investment fall in aggressive investment category and consists of greater extent of unsystematic risk. . Each company's per unit risk is much higher. But there is lack of stability of MPS in the stock market.

- Therefore, it can be concluded that the Nepalese stock market is not efficient enough to determine MPS in accordance with the respective financial performance and to make aware the investors about investment risk.

Here by**, Poudel, Resham Lal. (2005).** has conducted the study on the "Share price behavior of listed companies in the Nepal". Its basic objective is to test the share price behavior of listed companies in Nepal or to test the random walk model in Nepalese context over the period 16th July 2003 to 16th July 2004 following a descriptive and

analytical research design with the help of secondary data. The sample of the study comprises 21 companies representing from each sector listed in NEPSE. He has used serial correlation and runs test to compute the data. The overall study shows that the stock market performance is more or less stable position. The serial correlation analysis found that most of the coefficients of the sample are departed from the actual zero and runs test performed also suggests that there is significant difference between expected number of runs and actual numbers of runs. It concluded that the Nepalese stock market is not efficient in pricing shares or in Nepalese context random walk model does not hold true. It has also concluded that as serial coefficient and run test of successive price changes was dependant, it implies that the investors can predict the future price changes.

Similarly, **Ojha, Ram Chandra (2007),** conducted a research on "Determinants of Stock Price Fluctuation in Nepal" to find out the major determinants of Stock price fluctuation in Nepal.

Major findings were:

- The trend of volume of stock traded was in fluctuating manner.
- Signaling factors played major role while determining stock price.
- Investor's awareness on stock market was weak.
- Dividend and earning played the important role to fluctuate the share price.

Research methodology:

- Samples covered the periods 1999/00 to 2005/6.
- Used secondary as well as primary data.
- Statistical tools such as correlation analysis, regression analysis, coefficient of determinants, test statistic were used.

Weaknesses:

- Were unable to find out the actual determinants of share price fluctuation.

2.5 Research Gap

There have been several researches done before in the topic stock market and stock market prices. All of those researches have much useful findings and their limitations.

Study on the behavior of stock market was only started from Mr. Pradhan in 1993. But at that time the capital market in Nepal was very small. Aryal conducted a study in 1995 in share price behavior based on twenty one sample stock. The time period was eight months from the being day of organized stock market for eight months period. Now it is out of date. Till date market has experienced many up and downs like wise Timilsina 1997 has conducted research on dividend and stock price and study was carried out by the data for sixteen enterprises from 1990-1994: on his study he used the equation model as developed by Friend and Puckket (1964). Which was an out of date, study on dividend, conducted in the context of Nepal was based on secondary data only. Gurung (1999) conducted research on share price behavior of listed companies in Nepal. He used secondary data and tested only in surface. In 2002 Mr. Khadka conducted research on study on the share price behavior of financial institution. Paudel has done research on share price behavior listed companies in Nepal. Ojha in (2007) conducted study on the Determinants of Stock Price Fluctuation in Nepal using different financial and statistical tools which cannot give full information about fluctuation share price. These studies need updating since share price is the crucial phenomenon in the stock market and there is an increasing trend in the common stock investment.

These researches are helpful in different areas. The findings of previous researches are equally important. The main focus of the research will be to analyze the growth and down falls (behavior) of the factors on share prices of commercial banks. New aspect of this study may be that it has attempted to analyze the major quantitative determinants of share price of the selected commercial banks, by relating year end MPS with various financial indicators, also considering previous studies. This topic will help to those investors who want to know and invest about share price behavior of commercial banks

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a way for systematically solve the research problem. It refers the various sequential steps to adopt by a research in studying the problem with certain objectives. It describes the method and process applied in the entire aspect of the study. This chapter deals about the research methodology by which the collection data are analyzed with different tools to get results.

3.2 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research questions and to control variance. This study is carried out to get the empirical result of the stock price movements. To conduct the study, analytical and descriptive research approach is dropped for the readily available historical data. All the data used in this study are secondary in nature. Though the research tried to concert on quite a specified subject area, of could not ignore some other relevant area of study, which may give further support to the research. Moreover some subject matters are so interrelated that ignoring one may halt the whole research. Thus, this study is much diversified within the topic of market efficiency and Nepalese investors' behavior. It is historical data to develop a generalization. It is descriptive and analytical as well as in the sense that it tries to find some fact about the Nepalese stock market and the Nepalese investors.

Descriptive research is essentially a fact finding approach relative largely to present and abstracting generalization by the cross-sectional study of the current situation.

Analytical approach is followed to parametric and nonparametric test of data. It is the process of micro-analysis and appraisal of the data.

3.3 Nature and Source of Data

The data used in this study are secondary as they have been collected from concerned authorities. For any research work, information is considered the life blood. Thus it is the major task to gather the information and data collection. To fulfill the objectives of the study secondary data have been used. The data used in this study consist of daily closing price of each of the listed commercial banks in NEPSE. Secondary data have been taken mainly from the following sources:

- Published and unpublished document and annual reports of the company.
- The year ended annual report data sheet showing MPS, EPS, DPS, balance sheet, profit and loss account etc.
- Journals, government and non-government publication. Other supportive book and website of related topic.
- Previous thesis and studies relevant to this study.

3.4 Population and Sample

Till the latest date of this research study, 148 companies are listed in NEPSE. Hitherto, there are 26 commercial banks operating in Nepal out of which 24 commercial banks are in trading lists. And only four commercial banks have been selected for our study purpose keeping many factors into account. While choosing the banks, random as well as convenient sampling method has been applied. Duration coverage is 5 yrs 02/03 to 06/07 also with 2007/08.The respective names and the dates of establishment of the sampled commercial banks are as follows:

1. NABIL Bank Limited
2. Himalayan Bank Limited

3. Nepal Investment Bank Limited
4. Standard Chartered Bank Nepal Limited

There are various commercial banks emerged in Nepal, among them four commercial banks are selected as sample because these four are established in same decade (2040 to 2050) and affiliated by Nepal Rastra bank in category A. Similarity in the authorized, issued and paid of capital. Another reasons is that providing that as per needed for the research.

The listed banks are as follows:

S.N.	Commercial Banks	Established Date	Head Office
1.	Nepal Bank Ltd.	1937/11/15	Kathmandu
2.	Rastriya Banijya Bank	1966/01/23	Kathmandu
3.	Nabil Bank	1984/07/16	Kathmandu
4.	Nepal Investment Bank Ltd.	1986/02/27	Kathmandu
5.	Standard Chartered Bank	1987/01/30	Kathmandu
6.	Himalayan Bank Ltd.	1993/01/18	Kathmandu
7.	Nepal Bangladesh Bank	1993/06/05	Kathmandu
8.	Nepal SBI Bank Ltd.	1993/07/07	Kathmandu
9.	Everest Bank Ltd.	1994/10/18	Kathmandu
10.	Bank of Kathmandu Ltd.	1995/03/12	Kathmandu
11.	Nepal Credit and Commercial Bank	1996/10/14	Siddharthanagar
12.	Lumbini Bank Ltd.	1998/07/17	Naryanghat
13.	Nepal Industrial and Commercial Bank Ltd.	1998/07/2	Biratnagar
14	Macchapuchhre Bank Ltd.	2000/10/03	Kathmandu
15.	Kumari Bank Ltd	2001/04/03	Pokhara
16.	Laxmi Bank Ltd.	2002/04/03	Kathmandu
17.	Siddhartha Bank Ltd	2002/12/24	Kathmandu
18	Agricultural Development Bank Ltd.	1968/01/02	Kathmandu
19	Global Bank Ltd.	2007/01/02	Birgunj, Parsa
20	Citizen Bank Ltd.	2007/06/21	Kathmandu
21	Prime Bank Ltd.	2007/09/24	Kathmandu
22	Sunrise Bank Ltd.	2007/10/12	Kathmandu
23	Bank of Asia Nepal Ltd.	2007/10/12	Kathmandu

Source: http://brf.nrb.org.np

3.5 Method of Data Analysis

Different financial, statistical, and managerial tools will be used for the analysis of data. Some inferences and generalizations might also be made in the course of preparation of report as demanded by the situation.

3.5.1 Run Test

A run test can be defined as a sequence of consecutive price change of the same sign followed and preceded by price change of other sign. There exist three types of price changes in a series i.e. positive, negative and zero. Run test is a non-parametric test, which can also be used to examine the independence of a series as a check of results generated by serial correlation tests. Runs test is performed to examine whether the actual number of runs confirmed to the expected number of runs under the independent Bernoulli process. Of the observed runs and the expected runs are not significantly different from each other, then if is concluded that the independence assumption of the successive price changes is maintain.

The difference between expected and actual numbers of runs bas been analyzed by two methods: i) by total expected numbers of runs and ii) by total number of runs of each sign.

3.5.1.1 Analysis by Total Expected Number of Runs

Under the independence assumption of the series of price changes, the total expected number of runs of all kinds i.e. positive, negative, and zero for a stock is given by:

$$M = \frac{N\left(N\left(N+1\right)-\sum_{i=1}^{3} ni^2\right)}{N}$$

Where,

M = total expected number of runs of all signs.

ni = the number of price changes of each sign.

N= total number of observations.

The standard error or the “m” is:

$$\pm_m = \sqrt{\frac{\sum_{i=1}^{3} ni^2 \quad \sum_{i=1}^{3} ni^2 - N\left(2N - \sum_{i=1}^{3} ni^3\right) - N^3}{N^2(N-1)}}$$

If the total actual number of runs(R) is an independent random variable with expected number of runs (m) and standard error ó**m,** the standardized variable (K) is given as:

$$K = \frac{R - \frac{1}{2} - m}{\pm_m}$$

Where, ½ in the numerator is a discontinuity adjustment. For large sample “k” will be approximately normal with mean 0 and variance 1.

3.5.1.2 Analysis by Runs of Each Sign

The expected number of runs of price changes is also of three kinds i.e. positive, negative and zero. The expected numbers of each sign is just the breakdown by sign of the total expected number of runs of all signs. In this case, if there is significant inconsistency between total actual numbers of runs of all sign and total expected numbers, obviously there will be greater deviations between total actual number of runs of each sign and the total expected number of runs of each sign. If the signs were generated by an independent Bernoulli process, the expected number of runs of price changes for each sign is given by:

$$R(+) = R\left[p(+\overline{run})\right]$$

R (-) = R [p (- $\overline{run}$)]

R (0) = R [p (p $\overline{run}$]

Where,

R (+), R (-) and R (0) are the expected number of positive, negative and zero runs, p (+run), p (-run) and p (0run) are the probabilities of each run.

Probability of each run can be defined as the ration of the expected number of run in sample size N to the expected number of runs of all sings or is given by:

$$P(+run) = \frac{NP(+) + p(+)}{m}$$

$$P(-run) = \frac{NP(-) + p(-)}{m}$$

$$P(0run) = \frac{NP(0) + P(0)}{m}$$

Where, P (+), P (-) and P (0) are the probabilities of each sign i.e. positive negative and zero respectively.

3.5.2 Statistical tools

3.5.2.1 Karl Pearson's Coefficient of Correlation

It is a kind of statistical tool used for measuring the intensity or magnitude of linear relationship between the two variables. Also known as Pearsonian correlation coefficient between two variables (say X and Y), denoted by 'r_{xy}' or simply 'r' can be obtained as

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{n}}{\sqrt{\left(\sum X^2 - \frac{(\sum X)^2}{n}\right)\left(\sum Y^2 - \frac{(\sum Y)^2}{n}\right)}}$$

Where, n = number of observations in series X and Y

The value of correlation coefficient, 'r', always lies between '-1' to '+1'.

If r = +1, it can be stated that there is perfect positive relationship between variables X and Y.

If r = -1, it can similarly be stated that there lies perfect negative relationship between the given two variables.

If r = 0, it states that there is no correlations at all between the two study variables *(Gupta; 1982: E-10-8 – E-10-15).*

3.5.2.2 Coefficient of Determination

The coefficient of determination between the two variables is a measure of linear relationship between them and it indicates the amount of one variable which is associated with or accounted for another variable. It gives the percentage variation in the dependent variable that is accounted for by the independent variable. Moreover, it gives the ratio of the explained variance to the total variance and it is given by square of the correlation coefficient, i.e., 'r_2'.Thus,

Explained variance

Total variance

(Gupta; 1982: 10-29)

3.5.2.3 The 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 (Weston & Brigham, 1990: P.146). The expected return on an investment is the mean value of the summation of the possibility distribution of its possible returns (Cheney and Mosses, 1992: P.34). It can be expressed as an equation.

$$E\,fr_t\,\mathrm{AX}\sum_{t\,\mathrm{X1}}^{r} Pt\,.rt$$

Where,

rt = Possible returns of each event

Pt = Probability of the return for that event

T = Different

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.

$$E(r) = \frac{\text{Dividend} + (\text{Ending Price} - \text{Beginning Price})}{\text{Beginning Price}}$$

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.

3.5.2.4 Holding Period Return

Generally, single period return or holding period return is represented by R and expressed in terms of percentage basis. It is calculated as:

$$HPR = \frac{\text{Ending Price} - \text{Beginning Price} + \text{Cash Dividend} + \text{Stock Dividend} + \text{Right Issue offering}}{\text{Beginning Price}}$$

3.5.2.5 Risk of Common Stock

Stock returns may be riskier or more volatile, but this concept is a difficult one to express simply. In Finance, a concept from statistics called Standard Deviation is borrowed to

measure the risk on return summary measure about the average spread of observations around the mean. It is the square root of the variance. The standard deviation and the variance are equally acceptable and conceptually equivalent quantitative measures of an asset's total risk. It is computed as:

3.5.2.6 Standard Deviation

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

Standard Deviation $(\sigma) = \sqrt{\frac{\int Rj\ Z\ \overline{Rj}\text{Å}}{n}}$

3.5.2.7 Coefficients of Variation

The risk per unit of expected return can be measured by coefficient of variation, which is computed as follows:

$$CV_j\ X\frac{\pm_j}{R_j}$$

Where,

CV_j = coefficient of variation.

R_j = expected realized rate of return

$\pm_j$ = standard deviation of stock j.

3.5.2.8 Return on Market

Annual return on market is the average return of market based on the index of market. It is denoted by R_m. Under this study, NEPSE index will be used. It is value weighted index and comprises of all the stocks listed in NEPSE. The NEPSE index is used for the study.

Annual Market Return (R_m) = Ending NEPSE Index − Beginning NEPSE Index

Beginning NEPSE Index

Average Market Return $(\overline{R_m}) = \frac{R_m}{n}$

Where, R_m = Summation of annual market returns

n = Number of observations

3.5.2.9 Risk of Market Return

Risk of market return is also measured by the standard deviation of the returns of market. The standard deviation of market returns is computed as:

Standard Deviation $(\sigma_j) = \sqrt{\frac{(R_m - \overline{R_m})^2}{n-1}}$

3.5.2.10 Covariance

The covariance measures how two variables co-vary. It is a measure of the absolute association between two variables. Here, how the returns of individual stocks and the market return co-vary will be measured by covariance between the return of individual stocks and market return. It is computed as:

$$\text{cov}(R_j, R_m) = \frac{(R_j - \overline{R_j})(R_m - \overline{R_m})}{n} = \rho_{j,m}\sigma_m\sigma_m$$

If two variables are independent, their covariance is zero.

3.5.2.11 Beta Coefficient

Beta coefficient may be used for ranking the systematic risk of different assets. Beta coefficient of stock j is denoted by β_j. It is functionally related to the correlation and the covariance between the security and the market portfolio. It is computed as:

$$_{j\,m}\ \mathrm{X}\frac{\mathrm{cov}\left[R_j R_m\right]}{\mathrm{var}\left[R_m\right]}$$

Where, $COV\left[R_{j,} R_m\right]$ = covariance of returns of the j^{th} asset with the market

$Var\left[R_m\right]$ = variance of returns for the market portfolio

Individual stocks can be classified as aggressive or defensive or average on the basis of beta coefficients.

Beta coefficients	**Stock classification**	**Degree of risk**
Less than 1	Defensive stock	Less risky than the market
Exactly 1	Average stock	Equally risky as the market
Greater than 1	Aggressive stock	More risky than the market

CHAPTER - IV

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1 Data Presentation and Analysis

This chapter includes four sub-headings, at first analysis of financial indicators and variables are presented. The simple and multiple regression analysis are the next two sub-headings. Lastly the test of hypothesis and major findings are presented. Therefore this chapter is based on the presentation and analysis of the secondary data based on which conclusion and recommendation are made.

4.2 Security Market in Nepal

4.2.1 Historical Development

Though the historical development of securities market is not very old in Nepal, the organization of security market has changed radically in several new dimensions. The remarkable event in the development of securities market can be observed only after enactment of company act for the first time in 1936. In 1937, the ordinary shares of Biratnagar Jute Mills Ltd. and Nepal Bank Limited were issued under the company act 1936. There was a long gap till 1976.

The real trend of new market was organized only after the establishment and operation of securities marketing centre in the year 1976. it was the first institutional establishment for the purpose of developing security market in the country. Initially, the securities marketing center was assigned the task of promoting the secondary market for government securities. But due to the lack of proper mandate and sufficient rules and regulation the centre had not able to conduct a secondary market for shares.

With the objective of developing a market for stocks, the securities Exchange Act was enacted in 1983. With this act in place, the securities marketing center was converted into the securities Exchange Centre in 1984. Apart from dealing in government securities the SEC was also assigned the additional a job of conduction transaction in stocks of private corporate sector. Thus the development of stock market began science 1984. Reforms in the stock market began in 1993. Two tasks of the SEC, trading and regulatory aspects, were separated and assigned to two separated institutions. With the amendment in the securities Act, the Nepal stock Exchange Ltd. (NEPSE) was established with a objective to impart free marketability and liquidity to government and corporate securities by facilitating transaction in its trading floor through market intermediaries, such as broker, market makers and securities makers and securities dealers. At the same time, the securities Exchange Board of Nepal (SEBO/N) was constituted to oversee the regulatory provisions. Presently in Nepal, NEPSE is the only one secondary market (organized stock exchange) of the country for security transaction. And present introducing OTC market in secondary market.

NEPSE appointed twenty seven brokers, eleven issue and sales manager and two securities dealers to smooth daily transaction of buying and selling of securities under its rest Act. It has 135 listed companies. NEPSE opened its trading floor on 13th of 1994 for its newly appointed brokers and market makers. NEPSE is only the secondary market in country. (*http//www.sebonp.com*)

4.2.2 Capital Structure

The authorized and issued capital of the exchange is Rs.50 million. Of this Rs.30.41 millions is subscribed by Government of Nepal, Nepal Rastra Bank, Nepal Industrial Development Corporation and licensed members.

NEPSE has experienced many rise and fall of stock market since its origination. At one time there had been sufficient investor's optimism over the performance of companies that have raised capital by floating shares to the public. Brokers were busy in transaction of shares with good income in their as well as investor's favor. But as the time passed by,

stock market began to be inactive and due to several reasons. The listed companies could not match performance in accordance with the commitment made in prospects. The political uncertainty as a result of change in government has also affected the environment to some extent. The trend of movement of price of stock shows that the market is largely rumor oriented because when the earning is not satisfactory the prices of some securities goes very high than their book value, which results in over valuation and under valuation and of the stock. The prices are also deeply affected by the factors like issuance of right shares and bonus shares.

Of all the economic and financial markets, the stock market probably has greatest glamour and is perhaps least understood. Some observers consider it as a legalized place for gambling and many investors considers that stock market investing as a game in which the sole purpose is picking winners.

Table-1

Trading Days and Hours of NEPSE

Trading Days	Trading Hours	Types of Trading
Sunday-Thursday	11am-1am	Regular Trading
Monday	2pm-3pm	Odd Lot Trading
Friday	11am-12noon	Odd Lot Trading

(Source: www.nepalstock.com)

Trading on equities takes place on all days of week (except Saturdays and holidays declared by exchange in advance). On Friday only odd lot trading is done.

The market timings of the equities are:-

Market Open: - 12:00 Hours
Market Close: - 15:00 Hours

Odd Lot Trading is done on Fridays. For Odd Lot Trading Market Timings are

Market Open: - 12:00 Hours

Market Close: - 13:00 Hours

Note: - The exchange may however close the market on days other than schedule holidays or may open the market on days originally declared as holidays. The exchange may also extend, advance or reduce trading hours when it deems fit necessary.

Table-2

Listing Fee of the NEPSE

Issued Capital	Listing Fee	Annual Fee (Rs)
Up to Rs. 10 million	0.20% or minimum 15,000	Rs. 15,000
Rs. 10 million to Rs. 50 million	0.15% or minimum 45,000	Rs. 25,000
Rs. 50 million to Rs. 100 million	0.10% or minimum 75,000	Rs. 35,000
Above Rs. 100 million	0.075% or minimum 100,000	Rs. 50,000

(Source: www.nepalstock.com)

NEPSE is adopting an open cry system for securities trading of the listed companies through registered brokers. It means transaction of securities is conducted on the open auction principle on the trading floor. The buying broker with the highest bud will post the price and his code number on the buying column, while the selling column on the quotation board. The market maker quotes their bid and offer price on their own board before the floor starts. Once the bid and offer price match, contracts between the buying and selling brokers or between the brokers and market makers are concluded in the floor [NEPSE Annual Reports]. In July 16, 2006, NEPSE has 125 listed companies. Till first eleventh month 2008, NEPSE has 143 listed companies. NEPSE, which are classified into nine group. 17 commercial falls in commercial bank group, 56 finance companies, 4 Hotels, 18 manufacturing organization, 3 hydropower, 4 trading, 17 insurance, 23

Development Bank and other. Among those listed companies, only 66 companies were ranked as ' A ' grade by NEPSE in 2007 for convenience of investors.

According to NEPSE criteria, only those companies are included in 'A' category that have paid up capital exceeding the Rs. 20million, reported Profit for the last three consecutive years and have at least 1000 shareholders. Moreover, the shares of the company should be trading in the stock exchange for a price above the face value and the companies should have submitted the annual report to NEPSE within six month of the end of the fiscal year to qualify for a berth in category 'A'.

Table-3

NEPSE 'A' Grade

1.	NABIL Bank Limited	34	Peoples Finance Limited
2.	Nepal Investment Bank	35	Citizen Investment Trust
3.	Standard Chartered Bank Nepal Ltd.	36	Nepal Aawas Bikas Beeta Co.
4.	Himalayan Bank Ltd.	37	Mahalaxmi Finance Limited
5.	Nepal SBI Bank Limited	38	Gorkha Finance Limited
6	Everest Bank Limited	39	Narayani Dinance Ltd
7.	Nepal Industrial & Commercial Bank Ltd.	40	Lalitpur Finance Co. Ltd
8	Machhachapuchhre Bank Limited	41	Paschimanchal Finance Ltd
9.	Laxmi Bank Limited	42	Universal Finance Ltd.
10	Kumari Bank Limited	43	Goodwill Finance co. Ltd.
11	Sidhartha Bank Ltd.	44	Lumbini Finance & leasing Company Ltd.
12	Development Credit Bank Ltd.	45	Nepal Merchant Banking & Finance Ltd.
13	Paschimanchal Dev. Bank Ltd.	46	Siddhartha Finance Limited
14	Nirdhan Utthan Bank	47	Alpic Everest Finance Limited
15	Siddhartha Vikas Bank	48	United Finance Limited
16	National Life? Insurance Co.	49	International Leasing & Finance Limited?
17	Everest insurance Co. Ltd.	50	Union Finance Co. Ltd.
18	Himalayan Gen.Insu. Co.Ltd.	51	Shree Investment & Finance Co.
19	United Insurance Co.(Nepal)Ltd.	52	Premier Finance Co. Ltd.

20	Premier Insurance co. Ltd.	53	Butwal Finance Ltd.
21	Alliance Insurance Company Limited	54	Nawa Durga Finance Co.
22	Neco Insurance limited	55	Cosmic Merchant Banking & Finance
23	Sagarmatha Insurance	56	Central Finance Company Limited
24	Nepal Life Insurance Co.	57	Standard Finance Limited
25	Life Insurance Com.(Nepal) Ltd.	58	Fewa Finance Co. Ltd.
26	Prudential Insurance Co	59	World Mechant Banking & Finance Co. L
27	Nepal Finance & Saving Co. Ltd.	60	Birgunj Fiance Ltd.
28	Annapurna Finance Co. Ltd.	61	Capital Merchant Banking & Fin
29	NIDC Capital Markets Ltd.	62	Kist Merchant banking 7 Fin.
30	National Finance Co. Ltd.	63	Royal Merchant banking & Fiance
31	Nepal Share Markets Finance Ltd.	64	Guheswori Merchant banking 7 Fin
32	Kathmandu Finance Limited.	65	Unilever Nepal Limited
33	Nepal Industrial & Commercial Bank Ltd.	66	Chilime Hydropwer Co

(Source: www.nepalstock.com)

4.2.3 A Glimpse of Stock Market Trading

The main purpose of this simply provide quantitative information of stock market functioning. The organized stock market is a recent phenomenon in Nepal. In the beginning of organized open cry-out system, there was a brisk in stock market activities. Share prices increase tremendously and the turnover volume was also high. The increase share price could not last for long and soon the prices began to fall.

4.2.3.1 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 indices 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 weather 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.

From the table it is clear that by the end of this fiscal year, NEPSE index increased by 305.19 point close at 683.95 point. During the this fiscal year the highest point of NEPSE index was 683.95 recorded in the month Jun/July, while the lowest point was 378.76 recorded on Jul/ Aug. the monthly trend of NEPSE index is presented in below chart.

Table-4

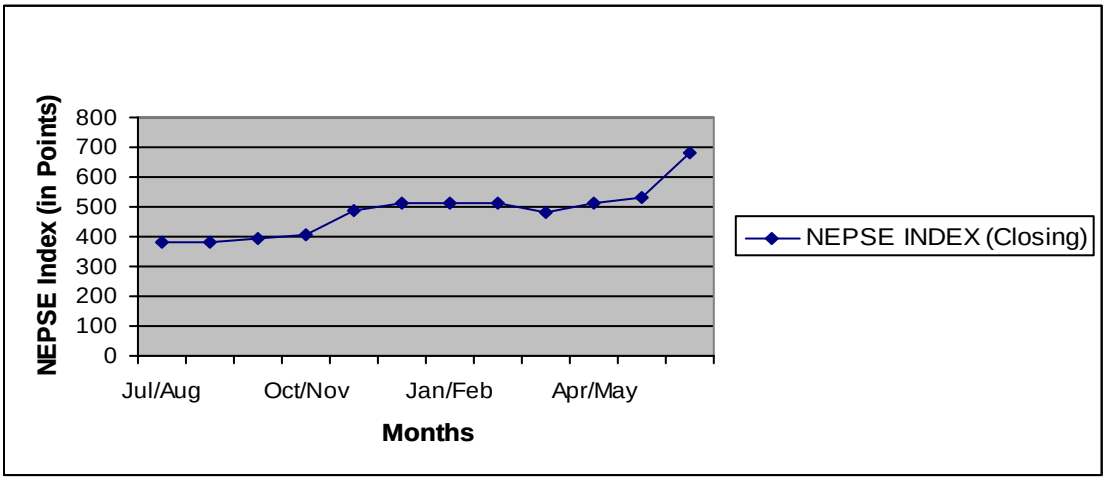
Monthly closing NEPSE Index (Fiscal Year 2006/2007)

Month	NEPSE INDEX (Closing)
Jul/Aug	378.76
Aug/Sept	382.24
Sept/Oct	394.25
Oct/Nov	408.38
Nov/Dec	486.19
Dec/Jan	514.42
Jan/Feb	513.34
Feb/Mar	511.81
Mar/Apr	480.99
Apr/May	513.69
May/Jun	531.96
Jun/Jul	683.95

(Source: NEPSE Annual Trading Report, 2006/2007)

Figure-3

NEPSE Index (Closing) for fiscal year 2006/07



4.2.3.2 No of Listed Companies

As concerned with the number of listed companies present in table-5, shows that the rate of listing companies for the fiscal year (2007/2008) is 10.45%.

Table-5

Listing Rate of Companies in NEPSE for Different Fiscal Year

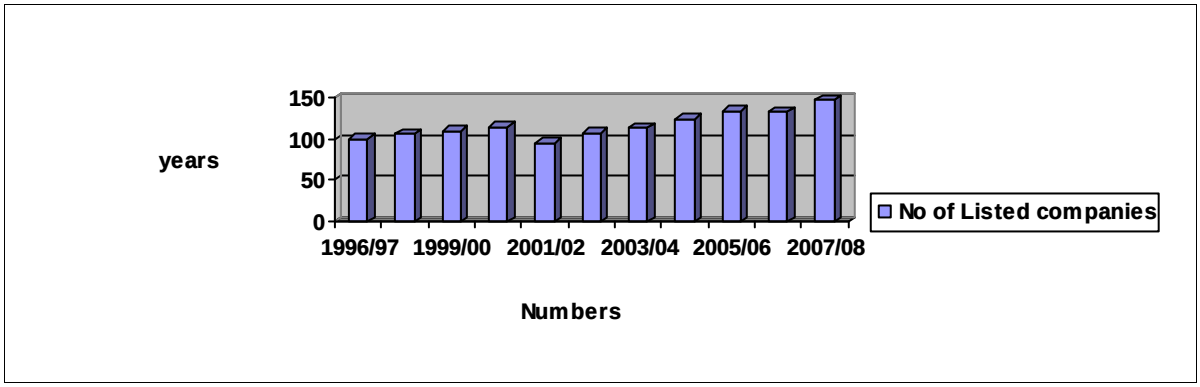
Year	No of Listed Companies	Percentage Change
1996/97	95	-
1997/98	101	6.32
1998/99	107	5.94
1999/00	110	2.80
2000/01	115	4.55
2001/02	96	-16.52
2002/03	108	12.50
2003/04	114	5.55
2004/05	125	9.65
2005/06	135	8
2006/07	134	-0.74
2007/08	148	10.45

(Sources: *hptt//www.sebonp.com*)

While talking in terms of numbers it is 115 for fiscal year 2000/2001. These are decrease in number of listed companies for the fiscal year 2001/2002 with 16.52% and 2006/07 with 0.74 lesser than that of previous year. This is due to delisting of the companies by NEPSE as there is a prevision provided by stock exchanges act.

Figure-4

No. of listed companies for different fiscal years



4.2.4 NEPSE (Market)

Expected return on market *fRmA*= the market return is the return on the market portfolio of all traded securities. Year ended the NEPSE index is used as the market return into account.

Table-6

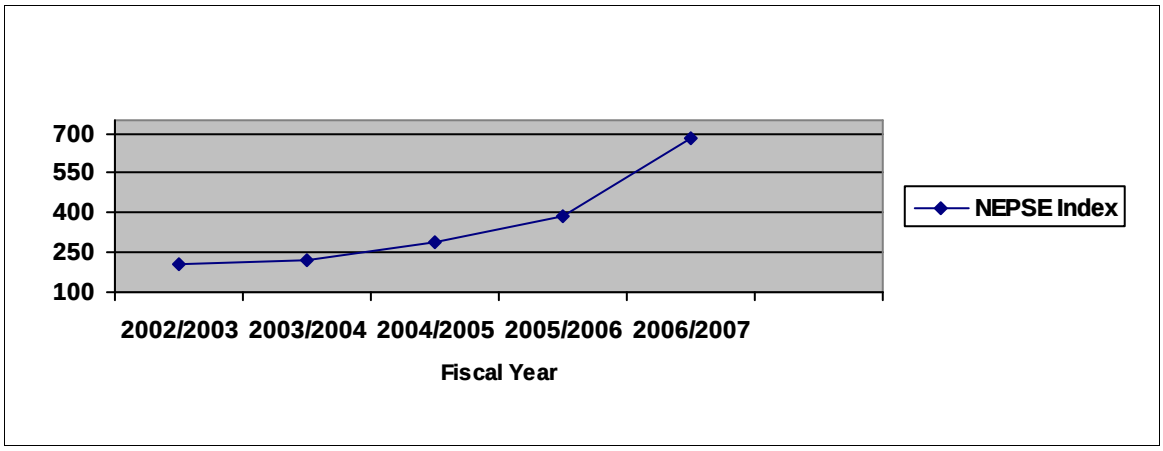
NEPSE Index & Annual Return

year	NEPSE Index	Annual Return (R) %
01/02	227.50	
02/03	204.86	-9.95
03/04	222.04	8.39
04/05	286.67	29.10
05/06	386.83	34.94
06/07	683.95	76.79
Total		139.27

(Source: *http//www.nepalstock.com*)

Figure-5

NEPSE Index



By the end of fiscal year, the price index of the listed securities (NEPSE) remained at 683.95 points, which is higher by 297.12 point than last fiscal year' index 386.83point. In this research fiscal year, the highest index of 683.95 is noted on the year 06/07 and the lowest index of 204.86 was noted on the year 02/03.

4.3 Runs Analysis (Random)

It is possible that security prices might fluctuate randomly but, in addition they sometimes follow trends that filter rules and serial correlation could not detect. That is, price changes may be random most of the time but occasionally runs tests may be used to determine if there are runs in the price changes. A run occurs in a series of numbers whenever the changes in the numbers reverse sign.

4.3.1 Analysis by Three Different Runs

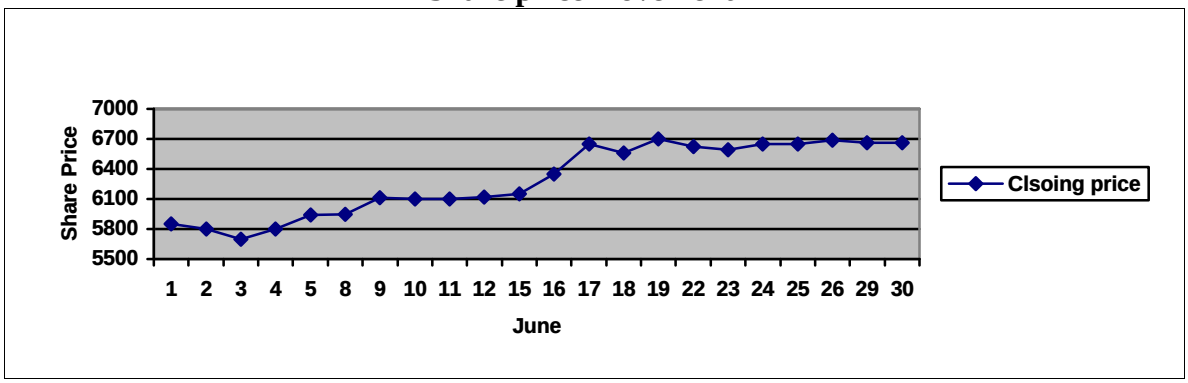
There are three different runs namely positive, Zero and Negative runs. If the price of stock increases then the run is positive and if it declines there will be a negative run and if the price remains same then there will be a zero run.

Run test is determined to see how many positive, negative and zero, or total runs may be expected to occur in a series of truly random numbers of size. The outcomes are show in the above tables. Since, it is not possible to take whole year's daily share price as a study. Hence I have taken June 2008 daily share price of some listed commercial banks as a study.

Table-7
Share trading for the month of June- Standard Chartered Bank

Day	Share Values in Rupees		Change (A-B)	% Change	Run Analysis
	Closing (A)	Previous Closing (B)			
1	5853	5520	333	6.032608696	Run 1 is positive run
2	5799	5853	-84	-1.435161456	Run 2 is negative run
3	5695	5799	-104	-1.793412657	
4	5800	5695	105	1.843722564	Run 3 is positive run
5	5941	5800	141	2.431034483	
8	5950	5941	9	0.151489648	
9	6110	5950	160	2.68907563	
10	6100	6110	-10	-0.163666121	Run 4 is negative run
11	6100	6100	0	0	Run 5 is zero run
12	6120	6100	20	0.327868852	Run 6 is positive run
15	6150	6120	30	0.490196078	
16	6350	6150	200	3.25203252	
17	6651	6350	301	4.74015748	
18	6560	6651	-91	-1.368215306	Run 7 is negative run
19	6700	6560	140	2.134146341	Run 8 is positive run
22	6625	6700	-75	-1.119402985	Run 9 is negative run
23	6590	6625	-35	-0.528301887	
24	6650	6590	60	0.91047041	Run 10 is positive run
25	6649	6650	-1	-0.015037594	Run 11 is negative run
26	6690	6649	41	0.61663408	Run 12 is positive run
29	6660	6690	-30	-0.448430493	Run 13 is negative run
30	6660	6660	-60	-0.900900901	

Figure-6
Share price movement



The above table and figure shows as how the share prices fluctuate from each consecutive day and thus delivering three different runs. The above study shows that there are thirteen runs in different days for the month of June. It has six positive runs, six negative and one

zero runs. Which means movement of share price is twelve times, increasing and decreasing. But at eleventh day share price is constant neither increase nor decrease. The range of the share price variability is -104 to 333.

Table-8

Share Trading for the month of June-Himalayan Bank Limited

Day	Share Values in Rupees		Change	%Change	Run Analysis
	Closing (A)	Previous Closing (B)			
1	1760	1760	0	0	Run 1 Zero run
2	1860	1760	100	5.681818182	Run 2 is positive run
3	1823	1860	-37	-1.98924731	Run 3 is negative run
4	1850	1823	27	1.481075151	Run 4 is positive run
5	1865	1850	15	0.810810811	
8	1912	1865	47	2.520107239	
9	1930	1912	18	0.941422594	
10	1915	1930	-15	-0.77720207	Run 5 is negative run
11	1920	1915	5	0.261096606	Run 6 is positive run
12	1865	1920	-55	-2.86458333	Run 7 is negative run
15	1958	1865	93	4.986595174	Run 8 is positive run
16	2150	1958	192	9.805924413	
17	2107	2150	-43	-2	Run 9 is negative run
18	2060	2107	-47	-2.23065971	
19	2100	2060	40	1.941747573	Run 10 is positive run
22	2020	2100	-80	-3.80952381	Run 11 is negative run
23	2025	2020	5	0.247524752	Run 12 is positive run
24	1960	2025	-65	-3.20987654	Run 13 is negative run
25	2015	1960	55	2.806122449	Run 14 is positive run
26	2070	2015	55	2.729528536	
29	2050	2070	-20	-0.96618357	Run 15 is negative run
30	2040	2050	-10	-0.48780488	

The above table shows the different share price of month June 2008 and thus showing as how the prices are traded in the days. The table and figure clearly showed that the three different runs and delivering fifteen different run of seven positive runs, seven negative runs and one zero run. Price of the share fluctuates over the month range of share price fluctuation is -80 to 192 in this month.

Figure-7

Share Price Movement

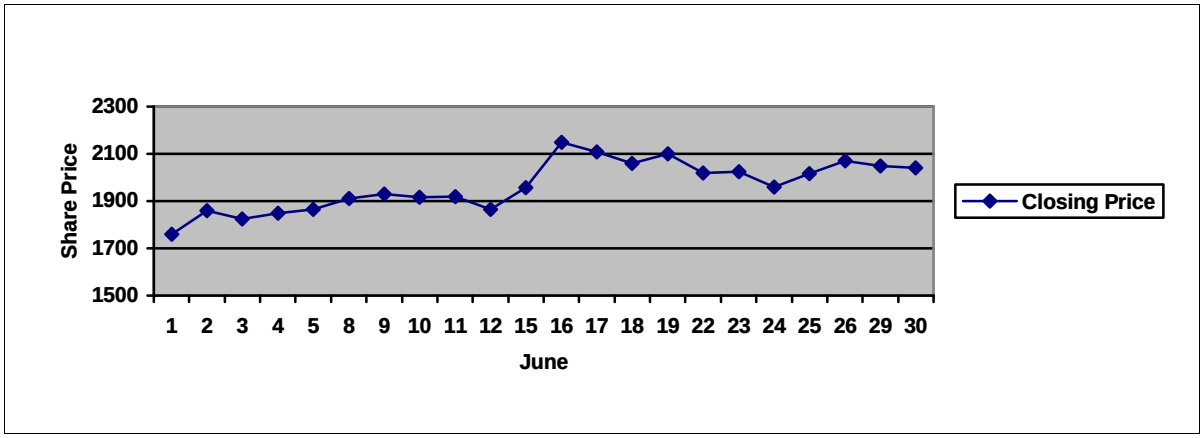
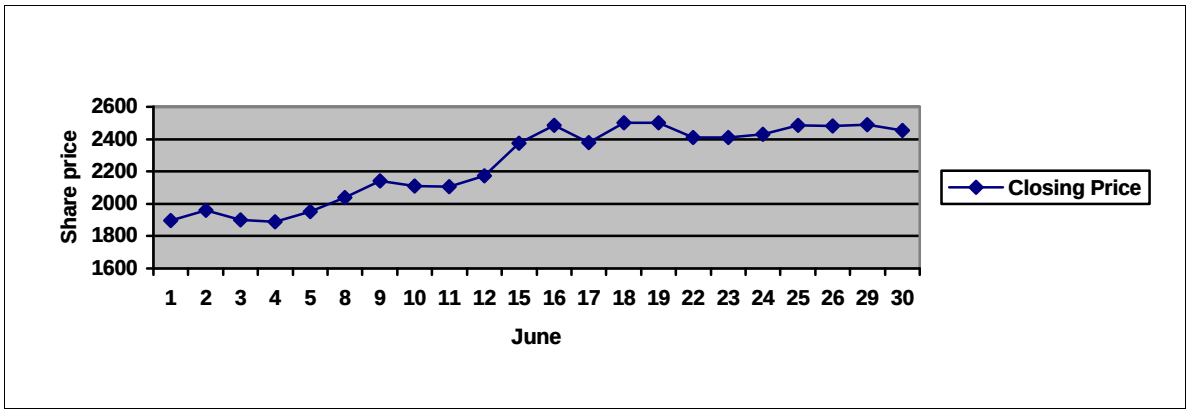


Table-9
Share trading for the month of June- Nepal Investment Bank

Day	Share Values in Rupees		Change (A-B)	% Change	Run Analysis
	Closing (A)	Previous Closing (B)			
1	1897	1825	72	3.945205479	Run 1 is positive run
2	1960	1897	63	3.32103321	
3	1900	1960	-60	-3.06122449	Run 2 is negative run
4	1890	1900	-10	-0.526315789	
5	1950	1890	60	3.174603175	Run 3 is positive run
8	2040	1950	90	4.615384615	
9	2142	2040	102	5	
10	2110	2142	-32	-1.493930906	Run 4 is negative run
11	2105	2110	-5	-0.236966825	
12	2175	2105	70	3.325415677	Run 5 is positive run
15	2375	2175	200	9.195402299	
16	2485	2375	110	4.631578947	
17	2380	2485	-105	-4.225352113	Run 6 is negative run
18	2500	2380	120	5.042016807	Run 7 is positive run
19	2501	2500	1	0.04	
22	2410	2501	-91	-3.638544582	Run 8 is negative run
23	2410	2410	0	0	Run 9 is zero run
24	2430	2410	20	0.829875519	Run 10 is positive run
25	2485	2430	55	2.263374486	
26	2480	2485	-5	-0.201207243	Run 11 is negative run
29	2491	2480	11	0.443548387	Run 12 is positive run
30	2455	2401	-36	-1.49937526	Run 13 is negative run

Figure-8
Share Price Movement



The above table shows the three different runs delivered in the month of June 2008. In this month the share price has shown more fluctuation in the share price thus delivering thirteen different runs showing six positive runs, six negative runs and one zero run. The range of share price fluctuation is -105 to 200.

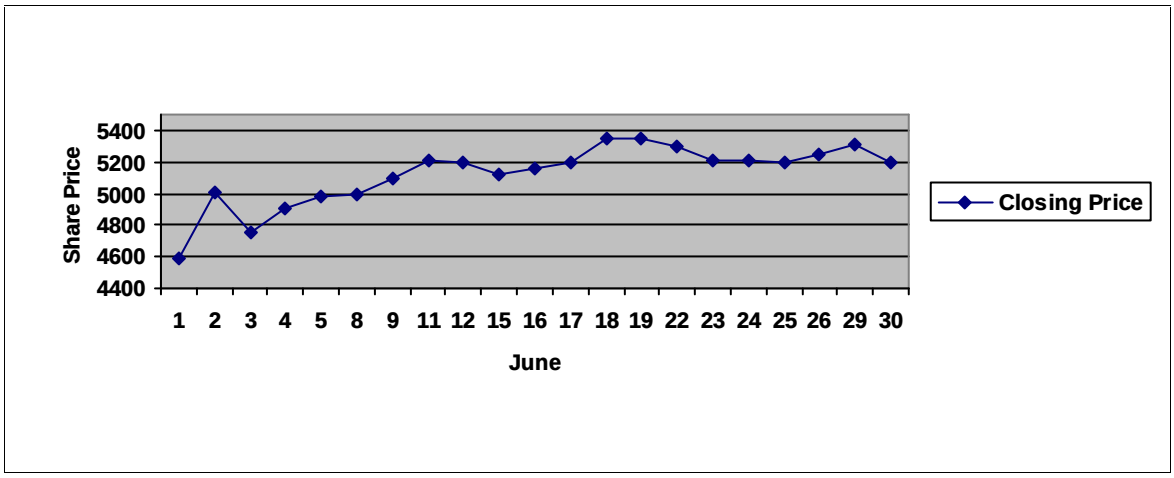
Table-10

Share trading for the month of June- NABIL Bank

Day	Share Values in Rupees		Change (A-B)	% Change	Run Analysis
	Closing (A)	Previous Closing (B)			
1	4590	4420	170	3.846153846	Run 1 is positive run
2	5010	4590	420	9.150326797	
3	4755	5010	-255	-5.089820359	Run 2 is negative run
4	4900	4755	145	3.049421661	Run 3 is positive run
5	4987	4900	87	1.775510204	
8	5000	4987	13	0.260677762	
9	5100	5000	100	2	
11	5205	5100	105	2.058823529	
12	5200	5205	-5	-0.096061479	Run 4 is negative run
15	5120	5200	-80	-1.538461538	
16	5160	5120	40	0.78125	Run 5 is positive run
17	5200	5160	40	0.775193798	
18	5350	5200	150	2.884615385	
19	5350	5350	0	0	Run 6 is zero run
22	5300	5350	-50	-0.934579439	Run 7 is negative run
23	5205	5300	-95	-1.79245283	
24	5205	5205	0	0	Run 8 is zero run
25	5201	5205	-4	-0.076849183	Run 9 is negative run
26	5245	5201	44	0.845991156	Run 10 is positive run
29	5311	5245	66	1.258341277	
30	5200	5311	-111	-2.090001883	Run 11 is negative run

Figure-9

Share price movement



The above table shows the share price of the month June 2008 and showing as how the prices are traded in the days. The table shows the three different runs and delivering eleven different runs of four positive runs, five negative runs and two zero runs. However, we can study that the variation of price fluctuation is less. Two times price of the share is constant or zero neither up nor down constant over the month June.

4.4 Risk and Return Analysis

Risk measures the degree of volatility in the market price movement of individual securities. The higher the magnitude of fluctuations, higher will be degree of risk though it is difficult to measure risk, some statistical tools like standard deviation, coefficient of variation and beta coefficient are used to measure the risk involved in individual security. All these are calculated by using the formula described in research methodology chapter.

4.4.1 Standard Deviation

Standard deviation is a strong statistical device to measure the total risk involved in an investment, which consists of both market risk and diversifiable risk. Moreover it denotes the volatility of the expected rate of return. The calculated value of expected realized return and standard deviation of four different banks are presented in the following table.

Table-11

Standard Deviation of Sampled Commercial Banks

Stock	Expected Realized Return $(\bar{R}_j)$ (%)	Standard Deviation (σ_j) (%)	Ranking of riskiness based on Standard Deviation
Standard Chartered Bank	63.51	49.90	2
Himalayan Bank	34.62	25.80	4
Nepal Investment Bank	57.34	51.94	1
NABIL Bank	52.62	29.58	3

Based on the assumption of the standard deviation, investment in the common stocks of Nepal Investment Bank are more risky followed by Standard Chartered Bank, stock of Himalayan Bank could be considered as less risky than the other three banks, being the standard deviation lower than other. The common stock of Nepal Investment Bank is associated with 51.94% of the highest risk, which indicates that the expected return can be deviated, by 51.94% in case of common stock investment than the other three sampled banks taken into study. It is shown the above calculation in the Appendix-C (I), C (II), C (III) and C (IV) respectively.

4.4.2 Coefficient of Variation

The standard deviation may not be appropriate measure of risk when the realized rates of returns are not same in all of the companies taken under consideration. Hence also the average realized rates of return are not same for the entire sample. Therefore, it is

recommended to use the coefficient of variation to measure the risk involved in individual bank. The coefficient of variation measures the risk per unit of return. The coefficients of variation of the realized rates of return of the sampled banks are shown in the following table.

Table-12

Coefficient of variation of Sample Commercial Banks

Stocks	Coefficient of Variation
Standard Chartered Bank	0.7857
Himalayan Bank	0.7453
Nepal Investment Bank	0.9059
NABIL Bank	0.5622

On the basis of coefficient of variation common stock of Nepal Investment Bank seems to be most risky. The common stock of NABIL Bank seems to be less risky in comparison with other banks. The above calculation has been derived in the Appendix - C (I), C (II), C (III) and C (IV) respectively.

4.4.3 Beta Coefficient

Standard deviation measures the total risk of an investment and the coefficient of variation measures the risk per unit of return. But the beta coefficient measures the market sensitivity or systematic risk of an investment. As we know, systematic risk is that portion of risk which is directly associated with market phenomenon and cannot be reduced by diversification. The beta coefficient of an individual stock provides the clear picture about the tendency of movement of the stock with market. It measures the stock volatility relative to that of the average stock. An average stock is that which trends to move up or down with the general market as measured by some index. Here, capital NEPSE index is taken into consideration to measure the movements of the general market regarding the stocks of listed commercial banks. Higher beta indicates the greater reaction by individual common stock with the given movement in the market status. The

following table shows the degree of rikiness of each stock of entire sample in relation to the general market.

Table-13

Beta coefficient of Sampled Commercial Banks

Stocks	Beta Coefficient	Ranking of riskiness based on Beta Coefficient
Standard Chartered Bank	1.589	1
Himalayan Bank	0.867	3
Nepal Investment Bank	0.5985	4
NABIL Bank	0.9852	2

By analyzing the above table, we note that Standard Chartered Bank is much-more sensitive to the market than the other three sampled banks because the coefficient of variation of these is more than one.

The stocks of standard Himalayan Bank, Nepal Investment Bank and NABIL Bank have beta coefficient less than one and can be concluded stocks. Following these Standard Chartered with 1.589 and NABIL Bank with 0.9852 as their coefficient of beta. For example in the case of Standard Chartered Bank , the calculated beta coefficient imply that one percent variation on the market rate of return leads to 1.589% variations in their realized rate of return. Hence highly sensitive stocks make quick response to the market change. The above calculation has been derived from Appendix- C (I), C (II), C (III) and C (IV) respectively.

4.4.4 Price Analysis

In this section the pricing of the shares of the sample companies were analyzed and interpreted. The result derived from the calculation by using security market line equation was presented in the below table, studying the period of 02/03 to 06/07.

Table-14

Valuation of Stocks of Sampled Commercial Banks

Stocks	Required Rate of Return	Expected Rate of Return	Status of the Bank
Standard Chartered Bank	42.27%	63.51 %	under valued
Himalayan Bank	24.62%	34.62 %	under valued
Nepal Investment Bank	18.05%	57.34%	under valued
NABIL Bank	27.50%	52.62 %	under valued

From the table No. 14- it was found that the all the banks taken as samples were found under prices. This shows that the market of the sampled banks was very much inefficient. The detailed calculation of the values of shares is presented in Appendix – C (I), C (II), C (III), and C (IV) respectively.

4.5 Major Financial Indicators of Sample Commercial Banks

In order to find whether the trend of the market price of the shares run on accordance to the key performance indicators in term of per share such as EPS, DPS and MPS have been as follows. These data have also been represented in respective term diagrams for the individuals' banks. All these have been extracted from the respective annual reports of the banks.

4.6 Correlation Analysis

Correlation analysis is performed in order to detect the relationship and to detect if there is any role of the various factors in forming the price of common stocks of sampled commercial banks. In this analysis product moment method had been used to find out the relationship between EPS and MPS, DPS and MPS, and BVPS and MPS. Generally, the correlation analysis is used to describe the degree to which one variable is related to another. Hence, in statistics, it is used in order to depict the co-variation between two or

more variables. It helps to determine that whether 1) a positive or a negative relationship exists. 2) The relationship is significant or in significant and 3) establish causes and effects relation if any. The statistical tools, correlation analysis is preferred in this study to identify the relationship between EPS, DPS and MPS whether the relationship is significant or not.

For the purpose of decision making under correlation, decision-making based on following interpretation terms:

1) When, r = +1, there is perfect positive correlation.
2) When, r = -1, there is perfect negative correlation.
3) When, r = 0, there is no correlation.
4) When, 'r' lies between 0.7 and 0.999, (-0.7 to -0.999), there is a high degree of Positive, (or negative) correlation.
5) When 'r' lies between 0.5 and 0.699, there is a moderate degree of correlation.
6) When 'r' is less than 0.5 there is low degree of correlation.

4.6.1 Correlation between EPS and MPS

4.6.1.1 Correlation between EPS and MPS of Standard Chartered Bank

The correlation between DPS and MPS of SCBNL calculated below revealed the solution of the question: was there any relation between the DPS of SCBNL and its MPS? In other words, was more MPS means more DPS by for the bank? If there was any degree of relationship between these two variables, what sort of relationship existed: positive or negative relationship?

Table-15

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error(r)	Significant or Insignificant
0.77	High degree of positive correlation	0.72	0.12	significant

Decision

From the above computation and table, the conclusion can be drawn that there was high degree of positive correlation between EPS of SCBNL and its MPS. That reveals more MPS means EPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between EPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is greater than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is significant.

4.6.1.2 Correlation between EPS and MPS of Himalayan Bank

The above correlation between EPS and MPS of HBL revealed the solution of the question: was there any relation between the EPS of HBL and its MPS? In other words, was more MPS means more EPS in it? If there is any relationship between these two variables, what sort of relationship exists: positive or negative?

Table-16

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error (r)	Significant or Insignificant
0.90	High degree of positive correlation	0.34	0.057	significant

Decision

From the above computation and table, the conclusion can be drawn that there was high degree of positive correlation between EPS of HBL and its MPS. That reveals more MPS means EPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between EPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is greater than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is significant.

4.6.1.3 Correlation between EPS and MPS of Nepal Investment Bank

The above correlation between EPS and MPS of NIBL revealed the solution of the question: was there any relation between the EPS of NIBL and its MPS? In other words, was more MPS means more EPS in it? If there is any relationship between these two variables, what sort of relationship exists: positive or negative?

Table-17

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error (r)	Significant or Insignificant
0.92	High degree of positive correlation	0.28	0.046	significant

Decision

From the above computation and table, the conclusion can be drawn that there was high degree of positive correlation between EPS of NIBL and its MPS. That reveals more MPS means EPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between EPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is greater than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is significant.

4.6.1.4 Correlation between EPS and MPS of NABIL Bank

The above correlation between EPS and MPS of NABIL revealed the solution of the question: was there any relation between the EPS of NABIL and its MPS? In other words, was more MPS means more EPS in it? If there is any relationship between these two variables, what sort of relationship exists: positive or negative?

Table-18

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error (r)	Significant or Insignificant
0.89	High degree of positive correlation	0.38	0.063	significant

Decision

From the above computation and table, the conclusion can be drawn that there was high degree of positive correlation between EPS of NABIL and its MPS. That reveals more MPS means EPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between EPS and MPS is measured by calculating probable error of correlation coefficient of correlation. Since the coefficient of correlation (r) is greater than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is significant.

4.6.2 Correlation between DPS and MPS

4.6.2.1 Correlation between DPS and MPS of Standard Chartered Bank

The correlation between DPS and MPS of SCBNL calculated below revealed the solution of the question: was there any relation between the DPS of SCBNL and its MPS? In other words, was more MPS means more DPS by for the bank? If there was any degree of

relationship between these two variables, what sort of relationship existed: positive or negative relationship?

Table-19

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error	Significant or Insignificant
-0.72	High degree of negative correlation	2.75	0.46	Insignificant

Decision

From the above computation and table, the conclusion can be drawn that there was high degree of negative correlation between DPS of SCNBL and its MPS.

Again, the probable error is used to measure the significance of the relation between two variables. In the case of this study, the significant relationship between DPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is lower than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is insignificant.

4.6.2.2 Correlation between DPS and MPS of Himalayan Bank

The correlation between DPS and MPS of HBL calculated below revealed the solution of the question: was there any relation between the DPS of HBL and its MPS? In other words, was more MPS means more DPS by for the bank? If there was any degree of relationship between these two variables, what sort of relationship existed: positive or negative relationship?

Table-20

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error (r)	Significant or Insignificant
0.42	Low degree of positive correlation	1.49	0.25	Insignificant

Decision

From the above computation and table, the conclusion can be drawn that there was low degree of positive correlation between DPS of HBL and its MPS. That reveals more MPS means DPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between DPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is lower than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is insignificant.

4.6.2.3 Correlation between DPS and MPS of Nepal Investment Bank

The above correlation between DPS and MPS of NIBL revealed the solution of the question: was there any relation between the DPS of NIBL and its MPS? In other words, was more MPS means more DPS in it? If there is any relationship between these two variables, what sort of relationship exists: positive or negative?

Table-21

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error (r)	Significant or Insignificant
-0.61	Moderate degree of negative correlation	2.48	0.41	Insignificant

Decision

From the above computation and table, the conclusion can be drawn that there was moderate degree of negative correlation between DPS of NIBL and its MPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between DPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is

lower than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is insignificant.

4.6.2.4 Correlation coefficient between DPS and MPS of NABIL Bank

The above correlation between DPS and MPS of NABIL revealed the solution of the question: was there any relation between the DPS of NABIL and its MPS? In other words, was more MPS means more DPS in it? If there is any relationship between these two variables, what sort of relationship exists: positive or negative?

Table-22

Correlation Table

Coefficient of correlation (r)	Relationship	6*P.E (r)	Probable Error (r)	Significant or Insignificant
0.92	High degree of positive correlation	0.28	0.046	Significant

Decision

From the above computation and table, the conclusion can be drawn that there was high degree of positive correlation between DPS of SCNBL and its MPS. That reveals more MPS means DPS.

Again, the probable error is used to measure the significance of the relation between two variables. In case of this study, the significant relationship between DPS and MPS is measured by calculating probable error of correlation coefficient of correlation (r) is greater than the 6 P.E. (r), therefore it can be concluded that the relation between the two variables is significant.

4.7 Major Findings

Based on the analysis of data and their interpretation, the major findings of the study in relation to the set could be summarized as follows:

- Because of the persistence in the stock price movement, professional traders either individual or intuitional 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.

- The run analysis of the month June of the sampled banks shows that the prices of stock tend to change from to time hence delivering three different run. The total number of run delivered in the June of standard Chartered Banks was 13 runs of six positive, one zero and six negative runs, likewise of Himalayan Bank there was 15 runs of seven positive, one zero and seven negative runs. Nepal Investment bank showed thirteen runs of six positive, one zero and six negative runs lastly NABIL Bank showed eleven runs of four positive runs, five negative runs and two zero runs. The study showed that the price of shares of each banks doesn't remain same all the time, it tend to fluctuate from time to time due to different factors.

- The average five-year market return for all the stocks in the market using the overall five year closing market indices was found to be just 27.86%. The overall market return was low due to lower trend of the prices of common stocks of most of the companies in the market except for few financial institutions, a handful of manufacturing, insurance and hydropower companies. The average risk-free rate of the five year period given by the rate of treasury bills issued by Nepal Rastra Bank was found to be average 3.43%. Similarly, the beta coefficients from the given figures of five year period were 1.589, 0.867, 0.5985and 0.9852 for the

banks SCBNL, HBL, NIBL and NABIL respectively. This stated that the market sensitivity of stock prices of SCBNL was the highest of all banks which means more aggressive to market changes as revealed by the highest beta coefficient. Likewise, the market sensitivity of the stocks of NABIL was also higher than the other two banks. The sensitivity of stocks of HBL was also higher. However, the stocks of NIBL were defensive one as compared to the other three. The realized average rates of returns over the five year period of SCBNL, HBL, NIBL and NABIL were obtained as 63.51%, 34.62% 57.34% and 52.62% respectively. In the same way, the equilibrium rates of returns given by the CAPM equation of the banks SCBNL, HBL, NIBL and NABIL were calculated as just 42.27%, 24.62%, 18.05%, and 27.50% respectively. Since the required rates of returns for all the sampled banks were lower than the calculated average annualized rates of returns, it can be clearly stated that the prices of the stocks of all the commercial banks were under-priced. Therefore, they are lucrative for holding long position in the sense that they have a tendency to increase in the future days also.

- Through the coefficient of variation analysis, it is found tat there is highest percent of unit risk for the stocks of NIBL, Which is 0.9059. And others 0.7857, 0.7453, 0.5622 SCBNL, HBL, NIBL and NABIL respectively. Regarding the total risk, Nepal Investment Bank consists of highest risk 51.94% of the total risk which is risky among the sample. The Himalayan Bank is recorded as least risky as it contains 25.80% of total risk which is less than other sampled banks in terms of standard deviation.

The key financial performance indicators such as EPS, DPS and MPS of the four sampled commercial banks for the past five year period were presented in respective tables.

- The correlation coefficients between EPS and MPS of SCBNL, HBL, NIBL and NABIL were calculated as +0.77, + 0.90, + 0.92 and +0.89 respectively. Likewise, the tests for significance of the coefficients also suggested the

calculated correlation coefficients as highly significant. There was a high degree of positive correlation between price formation and earnings of the sampled commercial banks.

- The correlation coefficients between DPS and MPS of SCBNL, HBL, NIBL and NABIL were obtained as -0.72, +0.42, -0.61 and 0.92 respectively. The calculated correlation coefficients were found highly negative, low degree of positive, moderate negative and high degree of positive. All of the calculated correlation coefficients were found insignificant except for the NABIL whose calculated correlation was found significant. There was a high degree of negative, positive moderate negative correlation between price formation and earnings of the sampled commercial banks except for NABIL there was a higher degree of positive correlation.

CHAPTER-V
SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter deals with the findings and conclusions derived from the study of share price behavior of four sampled commercial banks. The chapter consists of three sections: the first section provides the summary of the second section draws the conclusions of the study. Finally, the third section proposes recommendations to deal the problems observed on the basis of the findings.

5.1 Summary

The study was conducted with the main objective to analyze the share price behaviors and relationship between MPS, EPS and DPS of four commercial banks namely Standard Chartered Bank, Nepal Investment Bank, NABIL Bank and Himalayan Bank. It is mainly focused to developed the model accordingly and its empirical test in previous chapter. The model consists of run analysis along with standard deviations; coefficient of variation, beta coefficient and under and overpricing of shares were adopted as test methodologies.

Before analyzing the result of test, the overview of the Nepalese stock markets has been sketched. The recent position and performed of market in Nepal has been analyzed. The Nepalese stock market has not developed remarkably in the economy because of various market imperfections like limited number of buyers and sellers, stringent government policies, negligible development of corporate sector etc.

The run analysis of the sampled banks for the month of June showed that the prices of shares do not remain same. Due t various factors like internal and external the prices of the shares are sometimes valued at higher and sometimes lower. Hence, it can be

concluded that the market of the four sampled banks is inconsistent. It can be observed that there are more negatives run as compared to positive runs.

The required rate of return of all the sampled banks is less than expected rate of return. Hence, the share prices of all the banks are undervalued.

Beside these test, other statistical tools such as standard deviation, coefficient of variations and beta coefficient are also calculated to examine the risk involved in the common stock of commercial banks. And to measure the relationship of MPS, EPS and DPS coefficient of correlation is taken. Common stocks seem to be riskier than that of average stock; lots of investors are attracted in trading these stocks. This is due to the good track record of financial position, market penetration and continuous declarations of dividends, which encourage the potential investors to buy the shares of commercial banks.

5.2 Conclusion

The run test of the sampled banks showed that the prices of shares tends to fluctuate from time to time as a investors can buy shares when the value of shares decreases and hold till the share price increase. The dependence in the series of price changes observed implies that the price changes in the future market will not be independent from the price changes of the future days. It brings about that the information of the past price changes is helpful in future price changes. Therefore, sufficient opportunities are available to institutional and individual investors to make higher expected profits in future based in those historical price series. In the mean time the statistical analysis regarding the risk and return of the sampled stocks shows that the all the banks seems to be risky than the average stock. EPS and DPS have direct role in forming the market prices (MPS). In other words, MPS is a function of DPS, EPS. The study of the quantitative factors affecting share prices suggests that there are also major determinant roles of other seen and unseen forces in the market that determine the shape of the stock prices. That means the quantitative factors studied here are a part not all the factors that helps determine the stock prices of commercial banks

5.3 Recommendation

On the basis of review of existing studies and the major findings of the study, we can provide the following suggestions to the different parties involved:

Suggestions to investors:

Because of the persistence in stock price movements, professional traders either institutional or individual can beat the market. Thus, it is recommended that the inventors should be alert to exploit the opportunities through short-term speculation.

Investors need to be very careful and conscious before investing in shares of commercial banks in the secondary market. Wide range of information must be extracted, experts and brokers must be consulted and various techniques of analyzing the information obtained should be applied before investing in the shares of the commercial banks. The investors should not run after the whim of the market changes.

Suggestions to the companies:

Companies should play a decisive role in providing the genuine information to the public on a non-discrimination basis. The data and the information regarding the performance management policy and practices, etc should be provided to the public without making any kinds of manipulations. Then only the correct picture and the information can be generated.

Suggestions to the government:

Regulatory bodies should be watchful and alert all the time to cover up the issues of cartels, market makers, institutional investors and vested interests related with the shares and share prices. Public investors should be prioritized to invest.

There exist excessive price fluctuation as observed from the stock market while collection the data. To control such erratic price fluctuation the regulatory body should impose effective provision to the exchange members.

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Appendix – A (I)

Major financial indicators of sample commercial banks

EPS, DPS, MPS, Net Profit & Price Earning Ratio of Standard Chartered Bank

year	Closing Price Rs. (MPS)	DPS	Stock Dividend	Total dividend	EPS	Net Profit	Price Earning Ratio
01/02	1550	100	-	100	141.13	479.21	10.98
02/03	1640	110	10%	284.5	149.30	506.95	10.98
03/04	1745	110	-	110	143.55	537.82	12.06
04/05	2345	120	-	120	143.95	539.28	16.29
05/06	3775	120	10%	710	175.85	658.75	21.47
06/07	5900	80	50%	3452.5	167.46	692.05	35.23
07/08	6745						

(Source: http//www.standardchartered.com/np)

Total dividend = cash Dividend + % of stock dividend * next year MPS

Appendix – A (II)

EPS, DPS, MPS, Net Profit & Price Earning Ratio of Himalayan Bank

year	Closing Price Rs. (MPS)	DPS	Stock dividend	Total dividend	EPS	Net Profit	Price Earning Ratio
01/02	1000	27.50	30%	278.30	60.26	235.02	16.59
02/03	836	1.32	24%	202.92	49.25	212.13	16.91
03/04	840	0	20%	184	49.05	263.08	17.13
04/05	920	11.58	20%	220	47.91	308.27	19.20
05/06	1100	30	5%	117	59.24	457.48	18.57
06/07	1,740	15	25%	260	63.63	515.92	27.66
07/08	1980						

(Source: http//www.hbl.com.np)

Appendix – A (III)

EPS, DPS, MPS, Net Profit & Price Earning Ratio of Nepal Investment Bank

year	Closing Price Rs. (MPS)	DPS	Stock dividend	Total dividend	EPS	Net profit	Price Earning Ratio
01/02	760	0	-	0	33.59	275.96	22.63
02/03	795	30	40%	406	33.76	307.95	20.10
03/04	940	15	-	15	51.70	152.67	18.18
04/05	800	12.50	-	12.50	39.50	232.15	20.25
05/06	1,260	20	35.46%	633.10	59.35	350.54	21.23
06/07	1,729	5	25%	607.5	64.35	501.40	26.87
07/08	2410						

(Source: http//www.nib.com)

Appendix – A (IV)

EPS, DPS, MPS, Net Profit & Price Earning Ratio of NABIL Bank

year	Closing Price Rs. (MPS)	DPS	Stock dividend	Total dividend	EPS	Net Profit	Price Earning Ratio
01/02	735	30	-	30	55.25	57.09	13.30
02/03	735	50	-	50	84.66	116.7	8.68
03/04	1,000	65	-	65	92.61	455.32	10.80
04/05	1,505	70	-	70	105.49	518.64	14.27
05/06	2,240	85	-	85	129.21	635.26	17.34
06/07	5,050	100	40%	2210	139.45	685. 61	36.21s
07/08	5275						

(Source: http//www.nabilbank.com)

Appendix – B (I)

Average rate of return, variance and standard deviation of market returns

Year	NEPSE Index	$f R_m A$	$f R_m Z \overline{R_m} A$	$f R_m Z \overline{R_m} A^2$
01/02	227.50			
02/03	204.86	-0.0995	-37.804	1429.142
03/04	222.04	0.0839	-19.464	378.8473
04/05	286.67	0.2911	1.246	1.552516
05/06	386.83	0.3494	7.086	50.2114
06/07	683.95	0.7679	48.936	2394.732
	Total	1.3928		0.425451
	$f \overline{R_m} A$	0.27856	var. (Rm) (%)	0.08509
			S.D. $f \pm_m A$	0.2917

Where,

R_m = Return on market

$f \overline{R_m} A$ = Average market return

Var $f R_m A$ = variance on market return

S.D. $f \pm_m A$ = Standard deviation of market return

$$R_m = \frac{\text{Ending Price - Beginning Price}}{\text{Beginning Price}}$$

$$f \overline{R_m} A = \frac{R_m}{N}$$

$$\text{S.D. } f \pm_m A = \sqrt{\frac{\bullet R_m Z E f R_m A^2}{N}}$$

Appendix – C (I)

Standard Chartered Bank

year	(MPS)	D	R	X	X^2	Y	XY
01/02	1550	100					
02/03	1640	284.5	*0.2416	-0.39348	0.154827	-0.37806	0.148759
03/04	1745	110	0.1311	-0.50398	0.253996	-0.19466	0.098105
04/05	2345	120	0.4126	-0.22248	0.049497	0.01254	-0.00279
05/06	3775	710	0.9126	0.27752	0.077017	0.07084	0.01966
06/07	5900	3452.5	1.4775	0.84242	0.709671	0.48934	0.41223
07/08	6745						
Total			3.1754		1.245009		0.675963

D = Total dividend X = $(R_j - \bar{R}_j)$ Individual Bank

R = Annual Return Y = $(R_m - \bar{R}_m)$ Market

Risk Free rate of Return $(R_f) = 0.0343$

$$R = \frac{D \times (Ending price - Beginning price)}{Beginning price}$$

$$= \frac{284.5 \times (1640 - 1550)}{1550} = *0.2416$$

Average rate of return $(\bar{R}_j) = \frac{R}{N} = \frac{3.1754}{5} = 0.63508$

Standard Deviation $(\sigma_j) = \sqrt{\frac{(R_j - R_j)^2}{N}} = \sqrt{\frac{1.245009}{5}} = 0.4990$

Coefficient of Variation $(cv) = \frac{\sigma_j}{R_j} = \frac{0.4990}{0.63508} = 0.7857$

Covariance $(R_j, R_m) = \frac{(R_m - \bar{R}_m)(R_j - \bar{R}_j)}{N} = \frac{0.675963}{5} = 0.1352$

Beta Coefficient $(\beta) = \frac{\text{Covariance}(R_j, R_m)}{\sigma_m^2} = \frac{0.1352}{0.2917^2} = 1.589$

Required rate of return $f(Rj) = R_f + (R_m - R_f)$

0.0343+ (0.2786 – 0.0343)1.59

0.4227

Appendix – C (II)

Himalayan Bank Ltd.

year	(MPS)	D	R	X	X^2	Y	XY
01/02	1000	278.30					
02/03	836	202.92	0.03892	-0.30726	0.094411	-0.37806	0.116164
03/04	840	184	0.2249	-0.12128	0.01471	-0.19466	0.023609
04/05	920	220	0.3261	-0.02008	0.000403	0.01254	-0.00025
05/06	1100	117	0.3228	-0.02338	0.000547	0.07084	-0.00166
06/07	1,740	260	0.8182	0.472016	0.222799	0.48934	0.230976
07/08	1980						
Total			1.73092		0.33287		0.368841

Average rate of return $f(\bar{R}_j) = 0.3462$

Standard Deviation $f(\pm_j) = 0.258$

Coefficient of Variation $f(cv) = 0.7453$

Covariance $f(R_j, R_m) = 0.07377$

Beta Coefficient $f(\ ) = 0.867$

Required rate of return $f(Rj) = 0.2462$

Appendix – C (III)

Nepal Investment Bank

year	(MPS)	D	R	X	X^2	Y	XY
01/02	760	0					
02/03	795	406	0.5803	0.00694	0.0000482	-0.37806	-0.00262
03/04	940	15	0.2013	-0.37206	0.138428644	-0.19466	0.072425
04/05	800	12.50	-0.1356	-0.70896	0.502624282	0.01254	-0.00889
05/06	1,260	633.10	1.3664	0.79304	0.628912442	0.07084	0.056179
06/07	1,729	607.5	0.8544	0.28104	0.078983482	0.48934	0.137524
07/08	2410						
Total			2.8668		1.348997012		0.254614

Average rate of return $\bar{R}_j$ = 0.5734
Standard Deviation σ_j = 0.5194
Coefficient of Variation CV = 0.9059
Covariance $\mathrm{Cov}(R_j, R_m)$ = 0.05093
Beta Coefficient β = 0.5985
Required rate of return R_j = 0.1805

Appendix – C (IV)

NABIL Bank

year	(MPS)	D	R	X	X^2	Y	XY
01/02	735	30					
02/03	735	50	0.06803	-0.45818	0.209925247	-0.37806	0.173218
03/04	1,000	65	0.4490	-0.07721	0.005960766	-0.19466	0.015029
04/05	1,505	70	0.575	0.048794	0.002380854	0.01254	0.000612
05/06	2,240	85	0.5449	0.018694	0.000349466	0.07084	0.001324
06/07	5,050	2210	0.9941	0.467894	0.218924795	0.48934	0.228959
07/08	5275						
Total			2.63103		0.437541129		0.419142

Average rate of return $\bar{R}_j$ = 0.526206
Standard Deviation σ_j = 0.29582
Coefficient of Variation CV = 0.5622
Covariance $\mathrm{Cov}(R_j, R_m)$ = 0.08383
Beta Coefficient β = 0.9852
Required rate of return R_j = 0.2750

Appendix – D (I)

Fiscal Year (R)	Risk free rate
2002/03	3.48%
2003/04	2.93%
2004/05	4.32%
2005/06	2.79%
2006/07	3.65%
Total	17.17%
Average	**3.43%**

(Source: *Banking and Statistics division, Nepal Rastra Bank)*

Appendix – E (I)

Variance, Coefficient of Variation

Banks	Variance (%)	Coefficient of Variation
Standard Chartered Bank	24. 90	0.7857
Himalayan Bank	6.66	0.7453
Nepal Investment Bank	26.98	0.9059
NABIL Bank	8.75	0.5622

Appendix – F (I)

Correlation between EPS and MPS of Standard Chartered Bank (in Rs)

Fiscal Year	EPS (X)	MPS (Y)	x = $\int x - \bar{x}$	y = $\int y - \bar{y}$	x^2	y^2	xy
02/03	149.3	1640	-6.716	-1441	45.10466	2076481	9677.756
03/04	143.55	1745	-12.466	-1336	155.4012	1784896	16654.58
04/05	143.93	2345	-12.086	-736	146.0714	541696	8895.296
05/06	175.84	3775	19.824	694	392.991	481636	13757.86
06/07	167.46	5900	11.444	2819	130.9651	7946761	32260.64
Total	780.08	15405			870.5333	12831470	81246.12

X = EPS Y = MPS

$\overline{X} = \frac{X}{N} X \frac{780.08}{5}$ =156.016

$\overline{Y} = \frac{Y}{N} X \frac{15406}{5}$ =37081

$r X \frac{XY}{\sqrt{x^2 \quad y^2}} = \frac{81246.12}{\sqrt{870.5333 * 12831470}} = 0.77$

$P.E. \text{fr} AX \frac{0.6745 \mid 1 Z r^2}{\sqrt{n}} = \frac{0.6745 \mid 1 Z 0.77^2}{\sqrt{5}} = 0.12$

6P.E. = 6*0.12 = 0.72

Appendix – F (II)

Correlation between EPS and MPS of HBL (in Rs)

Fiscal Year	EPS (X)	MPS (Y)	x = $\text{fx} Z \overline{x} A$	y = $\text{fy} Z \overline{y} A$	x^2	y^2	xy
02/03	49.45	836	-4.446	-255.2	19.76692	65127.04	1134.619
03/04	49.25	840	-4.646	-251.2	21.58532	63101.44	1167.075
04/05	47.91	920	-5.986	-171.2	35.8322	29309.44	1024.803
05/06	59.24	1100	5.344	8.8	28.55834	77.44	47.0272
06/07	63.63	1,760	9.734	668.8	94.75076	447293.4	6510.099
Total	269.48	5456			200.4935	604908.8	9883.624

X = EPS Y = MPS

$\overline{X} = \frac{X}{N} X \frac{269.63}{5}$ = 53.869

$\bar{Y} = \frac{Y}{N} X \frac{5456}{5}$ =1091.2

$r X \frac{XY}{\sqrt{x^2 \quad y^2}} = \frac{9883.624}{\sqrt{200.4935 \mid 604908.8}} = 0.90$

$P.E.fr AX \frac{0.6745 \mid 1 Z r^2}{\sqrt{n}} = \frac{0.6745 \mid 1 Z 0.90^2}{\sqrt{5}} = 0.057$

6P.E. = 6*0.057 = 0.34

Appendix – F (III)

Correlation between EPS and MPS of Nepal Investment Bank (in Rs)

Fiscal Year	EPS (X)	MPS (Y)	x = $f_x Z \bar{x} F$	y = $f_y Z \bar{y} F$	x^2	y^2	xy
02/03	39.56	822	-11.332	-288.2	128.4142	83059.24	3265.882
03/04	51.70	940.00	0.808	-170.2	0.652864	28968.04	-137.522
04/05	39.50	800.00	-11.392	-310.2	129.7777	96224.04	3533.798
05/06	59.35	1,260.00	8.458	149.80	71.53776	22440.04	1267.008
06/07	64.35	1,729.00	13.458	618.80	181.1178	382913.4	8327.81
Total	254.46	5,551.00			511.5003	613604.8	16256.98

X = EPS Y = MPS

$\bar{X} = \frac{X}{N} X \frac{254.46}{5}$ =50.892

$\bar{Y} = \frac{Y}{N} X \frac{5551.00}{5}$ =1110.2

$$r = \frac{XY}{\sqrt{x^2 \; y^2}} = \frac{16256.98}{\sqrt{511.5003 \times 613604.8}} = 0.92$$

$$P.E. = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = \frac{0.6745 \times 1 - 0.92^2}{\sqrt{5}} = 0.046$$

6P.E. = 6*0.046 = 0.28

Appendix – F (IV)

Correlation between EPS and MPS of NABIL Bank (in Rs)

Fiscal Year	EPS (X)	MPS (Y)	x = $(x - \bar{x})$	y = $(y - \bar{y})$	x^2	y^2	xy
02/03	84.66	735	-25.624	-1371	656.5894	1879641	35130.5
03/04	92.61	1,000.00	-17.674	-1,106.00	312.3703	1223236	19547.44
04/05	105.49	1,505.00	-4.794	-601.00	22.98244	361201	2881.194
05/06	129.21	2,240.00	18.926	134.00	358.1935	17956	2536.084
06/07	139.45	5,050.00	29.166	2,944.00	850.6556	8667136	85864.7
Total	551.42	10,530.00			2200.791	12149170	145959.9

X = EPS Y = MPS

$$\bar{X} = \frac{X}{N} = \frac{551.42}{5} = 110.284$$

$$\bar{Y} = \frac{Y}{N} = \frac{10530}{5} = 2106$$

$$r = \frac{XY}{\sqrt{x^2 \; y^2}} = \frac{145959.9}{\sqrt{2200.791 \times 12149170}} = 0.89$$

$$P.E. = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = \frac{0.6745 \times 1 - 0.89^2}{\sqrt{5}} = 0.063$$

6P.E. = 6*0.063 = 0.38

Appendix – G (I)

Correlation between DPS and MPS of Standard Chartered Bank (in Rs)

Fiscal Year	DPS (X)	MPS (Y)	x = $(X - \bar{X})$	y = $(Y - \bar{Y})$	x^2	y^2	xy
02/03	110	1640	2	-1441	4	2076481	-2882
03/04	110	1745	2	-1336	4	1784896	-2672
04/05	120	2345	12	-736	144	541696	-8832
05/06	120	3775	12	694	144	481636	8328
06/07	80	5900	-28	2819	784	7946761	-78932
Total	540	15405			1080	12831470	-84990

X = DPS Y = MPS

$$\bar{X} = \frac{X}{N} = \frac{540}{5} = 108$$

$$\bar{Y} = \frac{Y}{N} = \frac{15405}{5} = 3081$$

$$r = \frac{XY}{\sqrt{x^2 \quad y^2}} = \frac{-84990}{\sqrt{1080 \times 12831470}} = -0.72$$

$$P.E. = 0.6745 \times \frac{1 - r^2}{\sqrt{n}} = \frac{0.6745 \times 1 - 0.72^2}{\sqrt{5}} = 0.46$$

6P.E. = 6*0.46 = 2.75

Appendix – G (II)

Correlation between DPS and MPS of Himalayan Bank (in Rs)

Fiscal Year	DPS (X)	MPS (Y)	x = $f x Z \bar{x} A$	y = $f y Z \bar{y} A$	x^2	y^2	xy
02/03	1.32	836	-10.26	-255.2	105.2676	65127.04	2618.352
03/04	0	840	-11.58	-251.2	134.0964	63101.44	2908.896
04/05	11.58	920	0	-171.2	0	29309.44	0
05/06	30	1100	18.42	8.8	339.2964	77.44	162.096
06/07	15	1,760	3.42	668.8	11.6964	447293.4	2287.296
Total	57.9	5,456			590.3568	604908.8	7976.64

X = DPS Y = MPS

$\bar{X} = \frac{X}{N} X \frac{57.9}{5}$ = 11.58

$\bar{Y} = \frac{Y}{N} X \frac{5456}{5}$ = 1091.2

$r X \frac{XY}{\sqrt{x^2 \quad y^2}} = \frac{7976.64}{\sqrt{590.3568 \mid 604908.8}}$ = 0.42

$P.E. fr A X \frac{0.6745 \mid 1 Z r^2}{\sqrt{n}} = \frac{0.6745 \mid 1 Z f 0.42 A}{\sqrt{5}}$ = 0.25

6P.E. = 6*0.25 = 1.49

Appendix – G (III)

Correlation between DPS and MPS of Nepal Investment Bank (in Rs)

Fiscal Year	DPS (X)	MPS (Y)	x = $f_x Z \bar{x} A$	y = $f_y Z \bar{y} A$	x^2	y^2	xy
02/03	30	822	13.5	-288.2	182.25	83059.24	-3890.7
03/04	15	940	-1.5	-170.2	2.25	28968.04	255.3
04/05	12.50	800	-4	-310.2	16	96224.04	1240.8
05/06	20	1,260	3.5	149.80	12.25	22440.04	524.3
06/07	5	1,729	-11.5	618.80	132.25	382913.4	-7116.2
Total	82.5	5551			345	613604.8	-8986.5

X = DPS Y = MPS

$$\bar{X} = \frac{X}{N} X \frac{82.5}{5} = 16.5$$

$$\bar{Y} = \frac{Y}{N} X \frac{5551}{5} = 1110.2$$

$$r X \frac{XY}{\sqrt{x^2 \quad y^2}} = \frac{-8986.5}{\sqrt{345 \mid 613604.8}} = -0.61$$

$$P.E.fr A X \frac{0.6745 \mid 1 Z r^2}{\sqrt{n}} = \frac{0.6745 \mid 1 Z f Z 0.61 Å}{\sqrt{5}} = 0.41$$

6P.E. = 6*0.41 = 2.48

Appendix – G (IV)

Correlation between DPS and MPS of NABIL Bank (in Rs)

Fiscal Year	DPS (X)	MPS (Y)	x = $f x Z \bar{x} A$	y = $f y Z \bar{y} A$	x^2	y^2	xy
02/03	50	735	-24	-1371	576	1879641	32904
03/04	65	1,000	-9	-1,106	81	1223236	9954
04/05	70	1,505	-4	-601	16	361201	2404
05/06	85	2,240	11	134	121	17956	1474
06/07	100	5,050	26	2,944	676	8667136	76544
Total	370	10,530			1470	12149170	123280

X = DPS Y = MPS

$$\bar{X} = \frac{X}{N} X \frac{370}{5} = 74$$

$$\bar{Y} = \frac{Y}{N} X \frac{10530}{5} = 2106$$

$$r X \frac{XY}{\sqrt{x^2 \quad y^2}} = \frac{123280}{\sqrt{1470 \mid 12149170}} = 0.92$$

$$P.E. fr A X \frac{0.6745 \mid 1 Z r^2}{\sqrt{n}} = \frac{0.6745 \mid 1 Z f 0.92 A}{\sqrt{5}} = 0.046$$

6P.E. = 6*0.046 = 0.28

Appendix-H

Brief Profile of Sampled Commercial Banks

Now, there are 23 commercial banks in operation. Among them two are under government control and other 21 are non-government and joint venture banks. One of the most important achievements of the growth of commercial banks is domestic savings. JVB's gave a new horizon to the financial sector of the country. They were expected to bring the foreign capital, technology, experience, healthy competition, expertise and skills in Nepal (Source: http://brf.nrb.org.np).

Among 23 commercial banks only 6 banks are taken as sample, i.e.:

- **Standard Chartered Bank Nepal Limited (SCBNL)**

Standard Chartered Bank Limited was established in 1985 as a second foreign joint venture bank under the Company Act 1964 by the name of Nepal Grindlays Bank Limited. ANZ Grindlays Bank PLC held 50 percent, 33.34 percent shares are held by Nepal Bank Limited and remaining 16.66 percent shares by general public of Nepal. ANZ Grindlays Bank PLC is managing the bank under joint venture and technical service agreement singed between ANZ Grindlays Bank Limited had changed its name as standard Chartered Bank Limited (SCBNL). Its share subscription is given as:

ANZ Grindlays Bank PLC	-	50.00%
Nepal Bank Limited	-	33.37%
Nepalese Public	-	16.66%

Share Capital of SCBNL

a. Authorized capital

10,000,000 ordinary shares @ Rs.100 per share = Rs. 1000,000,000.

b. Issued capital

5,000,000 ordinary shares @ Rs. 100 per share = Rs. 500,000,000.

c. Paid up capital

4,132,548 ordinary share @ Rs. 100 per share = Rs. 413,254,800.

The following extra facilities have been providing by the bank.

- Credit Cards
- Tele Banking
- Any Branch Banking
- ATM (Automatic Teller Machine)
- VISA Card
- 24 Hours Banking
- E-banking

(Source: Report of SCBNL, 2007/08)

Himalayan Bank Limited (HBL)

Himalayan Bank Limited was incorporated in 1992 by the distinguished business personalities of Nepal in partnership with Employees Provident Fund and Habib Bank Limited, one of the largest commercial banks of Pakistan. Banks operation was commenced from January 1993. It is the first commercial bank of Nepal with maximum share holding by Nepalese private sector. Beside commercial activities, the Bank also offers industrial and merchant banking. The promoters and their shares holding patterns of Himalayan Bank Ltd are as follows:

Nepali Promoters	-	51.00%
Habib Bank of Pakistan	-	20.00%
Karmachari Sanchaya Kosh	-	14.66%
General Public	-	15.34%

Share Capital of Himalayan Bank Ltd.

a. Authorized capital

10,000,000 ordinary shares @ Rs.100 per share = Rs. 1000,000,000.

b. Issued capital

6,500,000 ordinary shares @ Rs. 100 per share = Rs. 6500000

c. Paid-up capital

5362500 ordinary share @ Rs. 100 per share = Rs. 536250000

Beside banking facilities it provides other facilities too, they are given as:

- Tele Banking
- Credit Card Facilities
- Safe Deposit Locker
- International Trade and Bank Guarantee
- Western Union Money Transfer
- SWIFT (Society for Worldwide Inter bank financial Tele-communication)
- ATM (Automatic Teller machine)
- E-banking
- 24 hours banking
- Any branch banking

(Source: Annual Report, HBL, 2007/08)

Nepal Investment Bank Limited (NIBL)

Nepal Investment Bank Ltd. (NIBL), previous, Nepal Indosuez Bank Ltd. was established in 1986 as a Joint Venture between Nepalese and French Partners. The French partner (Holding 50% of the capital) was credit Agricole Indosuez, a subsidiary of one the largest banking groups in the world.

With the decision of credit Agricole Indusuez to divert, a group of companies comprising of bankers, professional, industrialists and businessmen, in April 2001, acquired 50% of the holdings of credit Agricole in Nepal Indusuez Bank.

The name of the bank was changed to Nepal Investment Bank Ltd. upon approval of the Bank's Annual General Meeting, Nepal Rastra Bank and company Register's Office.

The shareholders structure comprises of:

A group of companies	50%
Rastriya Banijya Bank	15%
Rastriya Beema Sansthan	15%
The general public	20%

Details of ownership capital

Particulars	Rs. (in million)
Authorized Capital	1000
Issued Capital	801.35
Paid-up Capital	801.35
Par value of share = Rs. 100 each	

(Source: NIBL, 2007/08)

NABIL Bank Limited (NABIL)

NABIL Bank Ltd, the first joint venture commercial bank in Nepal was established in 1984 under the company act 1964 as Nepal Arab Bank Ltd., Dubai Bank Ltd. was the initial joint venture partner with fifty percent (50%) equity investment. The shares owned by Dubai Bank Ltd., (DBL) were transferred to Emirates Bank International Limited, Dubai by virtue of its annexation with the letter. Later on, Emirates Bank International Limited, Dubai sold its entire 50% equity holding to National Bank Ltd., Bangladesh. Being the largest equity holder, National Bank Ltd., Bangladesh is managing the bank in accordance with the technical services agreement signed between it (NBIL) and the bank on June 1995. Nepal Arab Bank Limited changed its name as Nabil Bank Limited (NABIL).

The promoters and their shares holding patterns of Nabil Bank Ltd are as follows:

National Bank Limited, Bangladesh	-	50.00%
Financial Institutions	-	20.00%
Nepalese Public	-	30.00%

Share Capital of Nabil Bank Ltd.

a. Authorized capital

5,000,000 ordinary shares @ Rs.100 per share = Rs. 500,000,000.

b. Issued capital

4,916,544 ordinary shares @ Rs. 100 per share = Rs. 491,654,400.

c. Paid up capital

4,916,544 ordinary share @ Rs. 100 per share = Rs. 491,654,400.

The bank has changed its name as Nabil Bank Ltd. The bank expanded its banking services towards the different regions and part of the country by establishing altogether seventeen branches in urban as well as rural areas of the country.

Beside banking facilities it provides other facilities too, they are given as:

- Tele Banking
- Credit Card Facilities
- Safe Deposit Locker
- International Trade and Bank Guarantee
- Western Union Money Transfer
- SWIFT (Society for Worldwide Inter bank financial Tele-communication)
- ATM (Automatic Teller machine)
- 24 hours Banking
- Any Branch Banking
- E-banking

(Source: Annual Report, NABIL Bank, 2007/08).