

# **CHAPTER-I**

## **INTRODUCTION**

### **1.1. General Background**

**Capital market** is the place where financial instruments are traded. Financial instruments include shares, bonds, debentures, etc. Capital market is a market for long term funds having maturity period greater than one year. They are vital to long term growth and prosperity of economy since they provide channel through which needed fund can be raised. It is the mechanism through which public savings are channelised to industrial and business enterprises. Demand for the capital in the capital market comes from agriculture, industry, trade and government while the source of supply is from individuals, corporate savings, institutional investors and surplus of government. For mobilization of resources, capital market is an important intermediary through which effective bridging of the deficit units and surplus units can be ensured. Capital market institutions are engaged in mobilization of savings from surplus units to deploy funds into the deficit units for productive investment. In this respect, capital market plays a crucial role in mobilizing a constant flow of savings and channeling these financial resources for expanding productive capacity in the countries.

Capital market can be decomposed into securities market and non-securities market. Stock market is major component of securities market and a medium through which corporate sector mobilizes funds to finance productive projects by issuing shares in the market. Similarly, the stock market provides the best investment opportunity to the investors. Thus the effective collection of small amounts of savings and transferring funds into competitive and efficient uses require a well functioning capital market to facilitate the process. Securities market refers to the market for securities where securities like government bonds, corporate bonds or debentures, ordinary shares, mutual funds and certificates are bought and sold as other commodity. Security market is of two types, primary market and secondary market.

**Primary market and Secondary market:** Primary market is concerned with the

floatation and distribution of first hand securities to the general public which is also known as issue market. Secondary market is concerned with the trading of second hand securities. The second hand securities are bought and sold in the secondary market for investment and speculative motives. The secondary market ensures the liquidity to the securities. This encourages the investors to invest in the long term ventures and also enables them to convert their securities into cash before they mature. The liquid stock market helps promote the primary issuance of new securities because the investors will have easy access to the liquid stock market, which makes their investment less risky and more attractive. So it can be observed that both primary and secondary markets are positively and highly interrelated.

## **1.2. Development of Commercial banks and Securities market in Nepal**

The non-security market of Nepal came under regulatory framework when Nepal Rastra Bank, the central bank of Nepal was established in 1956. Prior to this, Nepal Bank Ltd. was the only financial institution operating under Nepal Bank Limited Act, 1937. Another commercial bank, Rastriya Banijya Bank was established under Rastriya Banijya Bank Act, 1966 in the public sector. A single commercial bank Act was enacted in 1974 to consolidate the functioning of all the commercial banks under one legal umbrella. Also the Finance Companies Act and Development Bank Act came in 1985 and 1966 respectively. At present, the country has many commercial banks including joint venture banks, development banks and finance companies.

The history of securities market began with the floatation of shares to the general public by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. in 1937. However the development of securities market could not be national policy for a long time. Then the industrial policy of Nepal led to the development of securities markets with the establishment of securities marketing center (SMC) in 1976. Before the establishment of SMC, there were no institutional arrangements to undertake and to manage the new issues of securities. Initial public offering (IPO) had to be made as per the provision of company act 1936, which were not adequate and relevant. The act had not even included preference share as corporate security. It was recognized as corporate security only by company act 1964.

SMC stated secondary trading of securities in 1981, which was restricted to government bonds. Till 1983, the concept of well structured secondary market had evolved in Nepal no separate Act existed to regulate the trading of securities. The securities exchange act 1983 was enacted in 1983, and then it restricted the exchange of unlisted securities.

The SMC was renamed Securities Exchange Center (SEC) in 1984 with an objective of facilitating and promoting the growth of capital markets. It was the only institution at that time managing and operating primary and secondary markets of long term government and corporate securities.

The first amendment in securities exchange act, 1983 made in 1983 paved the way for the restructuring of securities market in Nepal. This led to the establishment of securities board of Nepal (SEBON) on June 7, 1993 with a mandate to regulate and develop the securities market. The first amendment in the act also led to conversion of SEC into Nepal Stock Exchange limited with the basis objective of free market ability and providing liquidity to the corporate and government securities by facilitating the transaction in its trading floor through market intermediaries such as broker, market makers.

The second amendment in securities exchange act 1983 was made. The amendment made provision for registering securities business persons in SEBON as per the provision of the securities business persons in 1997. The amendment made mandatory provision for listed companies to submit annual and semi annual reports to SEBON. The amendment also required securities business persons to submit annual reports incorporating the securities transaction carried out by them to SEBON.

Nepal Stock Exchange, NEPSE was established in 1993. The basic objective of NEPSE is to impart free marketability and liquidity of the government bonds and corporate securities by facilitating transactions in its trading floor through market intermediaries, such as brokers, market makers, etc. NEPSE is the only one license holder mediator of SEBON. All the companies, who has received the certificate of stock trading and become

the member of NEPSE, trade on the trading floor of NEPSE. This is the secondary market of stock which provides liquidity to the stock.

Now Securities Ordinance 2062 is the main law to regulate the securities market in Nepal. Nepal Stock Exchange has just entered into automation or computerized trading system. During Fiscal Year 2066/067, there are 23 stockbrokers, 2 Security dealers, 1 issue manager, one stock exchange and 176 listed companies in the Nepalese Security market.

Efficiency in the stock market implies that all available relevant information regarding a given stock is instantly reflected in its price. An efficient market is one where the current price of security gives the best estimate of its true worth.

Market price of shares as the output of the demand and supply interaction is the most influencing factor in determining the price of the stock. Market price is determined at a given time on the basis of the prices and volumes of its past transaction and is the meaningful indication of future supply and demand. And such relationship is the most important element in determining the probable direction of the price movements. If the demand exceeds the supply, the price will rise and if the supply exceeds the demand the price will fall.

### **1.3. Focus of the Study**

Market price of the stock fluctuates daily in the Nepalese Securities Market. To find the main factor that affects the market price of the stock is the main focus of the study. The behavior of stock price has been the controversial subject matter among the academics of financial and economic circles. In general, price of the stock is determined by the demand and supply of the stock in the market. The demand and supply of the stock is affected by many signaling effects like the performance of the company, its dividend policy, economic and political situation of the country, etc. Efficient market price is the one which reflects the true worth of the company and represents the financial indicators like NWPS, EPS, DPS, etc. This study focuses on the efficiency of the Nepalese stock market

and behavior of the stock prices in Nepalese Security Market.

The main focuses of this study are outlined as follows:

1. To find the specific relationship between MPS and fundamental financial indicators (BVPS, EPS, DPS).
2. To find out whether the common stocks of the sampled companies are equilibrium priced or not.

#### **1.4. Statement of the Problem**

With the trend of economic liberalization and globalization policies adopted by the Nepalese government, many companies are emerging in the Nepalese Stock Market. Although Nepal's capital market history is short, the concept of capital market is growing rapidly within a short span of time and institutions like banks, insurance companies, finance companies, airlines, manufacturing companies, hotels and various other service sectors are floating their stocks in the market. It is mandatory to enlist these public limited companies in NEPSE. NEPSE creates liquidity on shares of such companies issued in the primary market and provides floor for trading of these shares.

Most of the investors are not aware of the financial position of the companies on which they are investing their money. They do not analyze the financial indicators of the company before they invest their funds through secondary market. The market price of the stock does not seem to be in accordance with the financial indicators- Book value per share (BVPS), Earning per share (EPS), Dividend per share (DPS), etc. Instead in determination of the market price of share, there has been major influence of rumors than the strength of the company. The market price of commercial banks especially foreign joint venture banks is much higher than the market price of other sectors.

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

The major problem of Nepalese financial market is that due to the dubious and haphazard movement of share prices, the investors are confused on investing their funds in the capital market. They are also not aware of the financial situation of the company and the financial indicators representing the market price due to which they are investing their funds haphazardly without considering the risk involved in their investment.

More specifically, the research problems are

1. Does the major financial indicator (like EPS, DPS, and BVPS) significantly affect the market price per share?
2. Is there specific relation of MVPS with fundamental indicator?
3. What is the trend of market price of listed commercial bank on NEPSE?
4. Are the common stocks of sampled bank's equilibrium price?
5. How much the information and other factor affected the share price?

### **1.5. Objectives of the Study**

The study is mainly focused on to evaluate the major factors affecting the share piece of the Nepalese commercial bank. With this regard the main objectives are;

1. To see the trend of volatility of major financial indicators and their relationship with MVPS.
2. To identify the trend of price volatility of commercial banks in Nepal.
3. To identify whether the stock of sampled banks are over price, under price or equilibrium price.
4. To study informational and other factor affecting the share price of the commercial bank.
5. To provide suggestion on the basis of findings.

## **1.6. Significance of the Study**

The study on the behavior of share prices in Nepalese security market is very significant to all the people related to stock market like investors, brokers, security dealers, issue managers, and the market makers. The significance of the study can be pointed out as follows:

1. The study helps to provide guidelines to the interested investors in the market.
2. The study is helpful to the people who are curious to know the price trend of the stock, volume of stock traded, list of new companies in the secondary market (NEPSE) and whether the financial indicators represent the market price.
3. The study is helpful to know the movement of share price of the corporate firms with respect to the change in the financial position of the firm.
4. The study provides literature to further researchers in this area.

## **1.7. Hypothesis of the Study**

The following hypotheses have been set for the study.

### **Hypothesis-I**

**H<sub>0</sub>**: there is no significant difference in banking index before and after constitution assembly election.

**H<sub>1</sub>**: there is significant difference in banking index before and after constitution assembly election.

### **Hypothesis-II**

**H<sub>0</sub>**: there is no significant difference in banking index before and after deadline of constitution assembly.

**H<sub>1</sub>:** there is significant difference in banking index before and after deadline of constitution assembly.

### **1.8. Limitations of the Study**

Every study is not free from some obstacles. Similarly, this study is also performed under various constraints and certain limitations. The major limitations are outlined as follows:

1. The study is based upon the secondary data which have been collected from books, financial statements, report of Nepal Stock Exchange Ltd. (NEPSE) and Security Board of Nepal (SEBON), selected company's website and other publications.
2. The study is based on the secondary data and no efforts have been made to verify the data provided by SEBON and NEPSE and other related corporate bodies.
3. The study has been made only on selected NEPSE stocks of selected Nepalese commercial banks.

### **1.9. Organization of the Study**

This study has been divided into five chapters, which are as follows:

#### **Chapter I: Introduction**

It includes general introduction, focus of the study, statement of the problem, objectives of the study, significance of the study, hypothesis of the study, limitations of the study and organization of the study.

#### **Chapter II: Review of Literature**

This chapter consists of the review of books and other relevant materials.

#### **Chapter III: Research Methodology**

It covers on research design, population and sample, source of data, data collection, procedure, analytical tools, etc.



#### **Chapter IV: Presentation and Analysis of data**

This chapter attempts to analyze and evaluate data with the help of analytical tools and interpret the results obtained.

#### **Chapter V: Summary, Conclusion and Recommendations**

It sums up the results obtained through analysis and recommends some suggestions.

The bibliography and appendix are included at the end of the study.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

Before doing analysis, it will be better to find out what research studies have been conducted in one's chosen field of study and to receive some ideas for developing a research design. So, here it is attempted to review some fundamental aspects of relevant literature as well as findings of the related previous studies because they provide the foundation to the present study.

The basic ideas about the research study on the share price behavior of Nepalese capital market is drawn from the past research study, books, journals, articles and dissertations published in the national and international level.

In this chapter, some of the basic literatures on the stock price behavior are reviewed. It includes literatures regarding theories on the topic and review of the empirical evidences of previous studies done. Few books, articles and research studies have been reviewed on this subject.

Thus, this chapter is broadly discussed under three sections:

- Conceptual review
- Review of Journals, Articles
- Thesis review

#### **2.2 Conceptual review**

For the purpose of the study, reviews from some books related to the topic are studied. The stock market, its growth and regulation is not so old in Nepalese security market. Currently, most of the investment sectors are influenced from the worldwide globalization and liberalization. The incident in one corner of the world brings the changes in the whole world. For example, we can take the recent economic recession in the world's most countries which had affected the worldwide investment sectors.

## **2.2.1 Common Stocks (Shares)**

### **2.2.1.1 Introduction**

Common stock is the basic form of ownership in a company. People who hold common stock have a claim on the assets of a firm after those of preferred stockholders and bond holders. (www.greekshares.com)

The common stocks are the permanent and vital source of capital since they do not have a maturity date. For the capital contributed by the shareholders by purchasing common stocks, they are entitled to dividends. The amount or rate of dividend is fixed by the company's Board of Directors. The common stock is, therefore, known as the variable income security. Being the owners of the company, the shareholders bear the risk of ownership; they are entitled to dividends after the claim of others have been satisfied. Similarly, when the company is wound up, they can exercise their claim on assets after the claim of other suppliers of capital have been met. (Pandey; 905)

The common 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 firm, 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; 132-133)

Common stockholders of a corporation are its residual owners, their claim to income and assets comes after creditors and preferred stockholders have been paid in full. As a result, a stockholder's return on investment is less certain than the return to a lender or to a preferred stockholder. On the other hand, the return to a common stockholder is not bounded on the upside, as are returns to others. A share of common stock can be authorized either with or without par value. The par value of stock is merely a stated figure in the corporate charter and is of little economic significance. A company should

not issue stock at a price less than par value, because stockholders who bought stock for less than par value would be liable for the difference between below the par price they paid and the par value. (Francis and Van Horne, 1997, p.85)

The founders of a corporation obtain a corporate charter from the state, have shares of common stock printed, and sell the shares to as many different people as they wish in order to raise the capital to start the new business. Thus, common stock is always the first security issued by every new corporation. (Francis, 1983, p.37)

Common stockholders have a residual claim on the earnings and assets of their corporation. This means that the law requires corporations first to pay employees' wages, suppliers' bills, and bondholders' interest; then, after all other bills are paid, the common stockholders share in whatever earnings or losses are left. Also, if the corporation comes to its demise in bankruptcy, the law says that all bills must be paid before common stockholders are free to divide up whatever assets remain, if any, from the bankrupt operation.

Common stockholders enjoy certain advantages from their investment. First, they enjoy limited liability, that is, if the corporation goes bankrupt and does not have enough assets to pay all of its bills, the common stockholders cannot be forced to participate in the payment of unpaid bills. Second, stockholders enjoy unlimited participation in the firm's profits if earnings become highly lucrative. Third, shares or common stocks are marketable securities designed to be bought and sold with ease. Finally, only common stockholders are entitled to vote at the stockholders' meetings of the corporation. Thus, stockholders have a voice in management.

When investors buy common stock, they receive certificates that state the number of shares purchased and their par value, if any. When stock is purchased on the market (that is, when it is not a new issue purchased directly from the company), the new owner and the number of shares bought are noted in the stock record book of a transfer agent. The transfer is usually a big city bank appointed by the corporation to keep track of all its shares' owners. After the sale, the former shareholder's certificate is cancelled and the

new certificate is sent to the registrar, which is usually another bank or trust company. The registrar checks to verify that no errors were made, and when all checks are completed, the certificate is sent to the new shareholder. (Francis, 1983, p.37-39)

### **2.2.1.2 Values**

#### **(a) Par Value**

Par value is the face value of a share or stock. It was originally used to guarantee that the corporation receives a fair price for the value of the firm represented by a share or stock. Another reason for the creation of par values was to keep stockholders with friends in the corporation from getting shares at a low price while other buyers of identical shares have to pay more. Selling shares at reduced prices to friends is a form of price discrimination against many potential investors. (Francis, 1983, p.40)

The face value of the stock, established at the time the stock is initially issued, is the par value. Without a stock split or other action by the board of directors, the par value of the stock does not change. (Cheney and Mosses, 1995, p.417)

The par value of new issue in Nepalese capital market is usually Rs.100, as directed by company act 1993.

#### **(b) Book Value**

Book value per share can be calculated by adding the common stock's total value (or par value plus paid-in surplus plus retained earnings accounts) in the net worth section of the balance sheet and then dividing by the number of shares of common stock outstanding. Book value gives a picture of the assets of the corporation, but it has no real relation to stock prices. Companies sometimes find their common stock selling for prices far different from book value. (Francis, 1983, p.40)

#### **(c) Market Value**

Market value in the secondary markets is determined by the demand and supply factors, and reflects the consensus opinion of investors and traders concerning the value\_ of the stock. The market value is influenced by many factors including economic and industry

conditions, expected earnings and dividends, and market and company risk considerations. (Cheney and Mosses, 1995, p.417-418)

### **2.2.1.3 Characteristics of common stocks**

#### ***a) Claim on Income***

The common stockholders have a claim to residual income, which is earnings available for ordinary shareholders, after paying expenses, interest charges, taxes and preference dividend, if any. The income may be split into two parts, dividends and retained earnings. Dividends are immediate cash flow to shareholders, whereas retained earnings are reinvested in the business. A company is not under a legal obligation to distribute dividends out of the available earnings.

As a matter of fact, shareholders have no right to receive income distribution from the corporation. As practice prevails, BOD declares cash dividends if enough financial resources are available. The dividends can be cash dividends, stock dividends, property dividends, etc. (Cheney and Mosses, 1995, p.415)

#### ***b) Claim on Assets***

The common stockholders have a residual claim on the company's assets in case of liquidation. Out of the realized value of assets, first the claim of debt holders and then preference shareholders are satisfied, and the remaining balance, if any, is paid to the common stockholders.

#### ***c) Right to control***

The ordinary shareholders have the legal power to elect directors to the board. If the board fails to protect their interests, they can replace the directors. They are able to participate in the management of the company through their voting right and right to maintain proportionate ownership.

#### ***d) Voting Rights***

Common stock is voting stock. The ordinary stockholders are required to vote in order to elect the directors and change the memorandum of association. For instance, if they want

to change its authorized capital or the objectives of business, they need ordinary shareholders' approval. The power to vote for the board of directors and to support or against major issues (such as mergers or expansions into new product lines) belong to the common stockholders because they are the owners of the corporation.

***e) Preemptive Right***

The law grants the shareholders the right to purchase new shares in proportion to their current ownership. Thus the preemptive right entitles a stockholder to maintain his proportionate share ownership in the company. The stockholder's option to purchase, a stated number of new shares at a specified price during a given period, is called rights which can be exercised at a subscription price which is generally much below the current market price of shares.

The pre-emptive right allows stockholders to subscribe to any new issue of stock so that they can maintain their previous fraction of the total number of shares sold (usually called the outstanding shares). Some states automatically make the preemptive right a part of every corporate charter: in others, its inclusion as part of the charter is optional. To grant the preemptive right is to recognize that stockholders are part owners of corporations and as such should have an interest in earnings and assets and a voice in management proportionate to the fraction of voting shares they own. The preemptive right, if exercised, prevents the dilution of ownership control inherent in additional stock shares. Thus, the preemptive right, if exercised, guarantees the investor's undiluted maintenance of voting control, share in earnings, and share in assets. (Francis, 1983, p.39)

***f) Limited Liability***

The common stockholders are the true owners of the company, but their liability is limited to the amount of their investment in shares. If a stockholder has already fully paid the issue price of shares purchased, he has nothing more to contribute in the event of financial distress or liquidation. The limited liability feature of share encourages unwilling investors to invest their funds in the company which helps company to raise funds. (Pandey, 1995:905-908)

Most of the investors are wise to invest their saving funds in stocks, with the expectation of future cash inflow as dividends and maximization of value of their holdings in the market. The dividends and value of the firm are linked with the earning power of the firms, which ultimately affects the market price of shares. So, brief discussions of some financial indicators, like earning per share, dividend per share, book value per share and market price per share, have been presented in the following paragraphs

***g) Earning per share (EPS)***

Accounting earnings that represent the difference between revenues and expenses, including the expenses associated with non-equity source of funds (such as interest to debt, dividend to preference share) is also known as total earnings available for common stock. If this portion of income is divided by number of outstanding shares, we get earning per share. (Sharpe, Alexander and Bailey, 2001:622)

***h) Retained Earnings***

The balance sheet account which indicates the total amount of earnings the firm has not paid out as dividend throughout its history; these earnings have been reinvested in the firm.

***i) Dividend per share (DPS)***

The percentage of earnings the firm pays in cash to its shareholders is known as dividend. The dividends, of course, reduce the amount of earnings retained in the firm and affect the total amount of internal financing. (Horne, 2000:305)

Nothing is more important than dividends to stockholders. They buy shares of firm with the hope of sharing profits earned by firms. The sole motive of stockholders is to receive return on their investment, nothing pleases them more than knowing the firm's earning and more profits mean more dividends coming in. (Pradhan, 1996:375-376)

Krishman opines that of two stocks with identical earning record and prospect, but the one paying a large dividend than the other, the former will undoubtedly command a higher price merely because stockholders prefer present to future values. Stockholders



often act upon the principle that a bird in the hand is worth two in the bush and for this reason, they are willing to pay a premium for the stock with the higher dividend rate. (Pandey, 1995:681)

The following table shows a glimpse of various financial indicators.

**Table 1: Financial Indicators**

Earning before interest and taxes (EBIT)	***
Less: Interest	***
Earning before taxes (EBT)	***
Less: Tax	***
Earning after tax (EAT)	***
Less: Preference dividend	***
Earning available to common stockholders (EACS)	***
No. of outstanding shares (n)	***
Earning per share (EPS) = EACS/n	***
Dividend per share (DPS) = EPS*DPR	***

(Pradhan, 1995:602)

### **Forms of dividend:**

*Cash dividend:* Payments made in cash to stockholders are termed cash dividends, for which a firm needs to have enough cash in its bank account. When cash dividend is declared, the cash account and reserves account of the firm will be reduced, thus both the total assets and the net worth of the firm are reduced in case of distribution of cash dividend.

*Stock dividend (Bonus share):* An issue of bonus share represents a distribution of shares in addition to cash dividend (known as stock dividend in USA) to the existing stockholders. This practice has the effect of increasing the number of outstanding shares of the company, which are distributed proportionately. Thus, a shareholder retains his/her proportionate ownership of the company. (Pandey, 1995: 705-706)

### **Stock splits**

Stock splits have an effect on a firm's share price similar to that of stock dividends. A stock split is a method commonly used to lower the market price of a firm's stock by increasing the number of shares belonging to each shareholder. Quite often, a firm believes that its stock is priced too high and that lowering the market stock will enhance the marketability of the stock and stimulates market activity. A stock split has no effect on the firm's capital structure. It commonly increases the number of shares outstanding and reduces the stock's per share par value. In other words, when a stock is split, a specified number of new shares are exchanged for a given number of outstanding shares. In a 2 for 1 split, two shares are exchanged for a given number of outstanding shares. Sometimes, a reverse split is made. A certain number of outstanding shares are exchanged for two old shares; in a 2 for 3 split, two new shares are exchanged for three old shares, and so on. (Gitman, 1988: 627-628)

### **Stocks repurchase**

In the recent past, firms have increased their repurchasing of shares of outstanding common stock in the marketplace. A stock repurchase is made for a number of reasons: to obtain shares to be used in acquisitions, to have shares available for employee stock option plans, to achieve a gain in the book value of equity when shares are selling below their book value, or merely to retire outstanding shares. The accounting entries that result when common stock is repurchased are a reduction in cash and the establishment of a contra capital account called 'treasury stock', which is shown as a deduction from stockholders' equity. The repurchase of stock can be viewed as a cash dividend, since it involves the distribution of cash to the firm's owners, who are the sellers of the shares. The advantages of stock repurchases are an increase in per share earnings and certain owner tax benefits. The tax advantage stems from the fact that if the cash is paid the owners will have to pay ordinary income taxes on it. Of course, when the stock is sold, if the proceeds are in excess of the original purchase price, the capital gain will be taxed as ordinary income. (Gitman, 1988: 628-629)

*j) Net worth per share (NWPS) / Book value per share*

A corporation will generate income, much of which is paid to creditors (as interest) and to shareholders (as dividend). Any remainder is added to the amount shown as cumulative retained earnings on the corporation's book. The sum of cumulative retained earnings and other entries (such as common stock and capital contributed in excess of the par value) under shareholder's equity is the book value of the equity. The book value per share is obtained by dividing the book value of the equity by the number of shares outstanding. (Sharpe, Alexander Bailey, 2001:506)

The book value of the equity reflects the historical costs of –brick and meter- the physical assets of the company. A well run company with strong management and an organization that functions efficiently should have a market value greater than the historical book value of its physical assets. (Weston and Copeland, 1992:695)

The accounting value of a share of common stock is equal to the common equity of the firm (common stock plus retained earnings) divided by the number of shares outstanding. (Weston and Brigham, 1987:674)

Book value is generally considered to be relatively unimportant in determination of the value of company, since it represents only the historical investments made in the company- investments that may have little relating to current values of price. (Weston and Copeland, 1992:1113)

***k) Market price per share (MPS)***

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: 20)

Once the shares, issued in the primary market, are listed in the stock exchange, investors are able to buy and sell the shares among themselves with the help of brokerage firm. Generally, the price of shares is determined by demand and supply preferences. Due to the market imperfection and uncertainty, shareholders may give a higher value to the near

dividends and capital gains. Thus, payment of dividend may significantly affect the market price of shares. Higher dividends increase the value of shares and low dividends reduce the value. (Pandey, 1995: 681)

Given the two companies in the same general position and with the same earning power, the one paying the larger dividend will always sell at higher price. (Pandey, 1995: 687)

The price of firm's stock reflects expectation about its future earnings and dividends. (Weston & Copeland, 1992: 1113)

Book value is generally considered to be relatively unimportant in determination of the value of company, since it represents only the historical investments made in the company- investments that may have little relation to current values of prices. (Weston & Copeland, 1992:1113)

## **2.2.2 Investment Return and Risk**

In the following paragraphs, brief discussions have been made on the various aspects of return and risk, which may be relevant to this study.

### **Types of Investment Return**

#### ***Holding Rate of Return***

The investment return is defined as the after tax increase in value of the initial investment. The increase in value can come from two sources: a direct cash payment to investor or an increase in the market value of the investment relative to the original purchase price. Investors prefer to express returns as percentage.

#### ***Risk-free Rate of Return***

It is the return, such as the return on treasury bills, which is a nominal and denoted by RF. It consists of a real rate of return and an inflation premium. In fact, inflation is presented in the economy, which insists to include a premium in the nominal RF rate. For instance, if real interest rate is 3% and anticipated inflation rate is 5%, the risk-free rate

should be approximately 8%. (Jones, 1988: 34)

### ***Required Rate of Return***

Consumption is forgone today; the investor is entitled to a rate of return that compensates for this deferred consumption. So, an investor must consider the real rate of return, expected inflation and risk. The investor expects to receive an increase in the real goals purchased later, and assuming, for the moment, zero expected inflation and risk, the required rate could equal to the real rate of return, in which case it would represent the pure time value of money. The capital markets determine this rate based upon the supply of money to be invested, relative to the demand for borrowed money.

Now, if the investor expects that the prices of the goods to be consumed will have increased by the time the investment provide a return, and then the investor will also require that the return be adjusted for those price increases of inflation in addition to the real return. Further, if the investor is uncertain about future returns, he/she will expect to be compensated for the uncertainty and will require an additional return from the borrower.

### ***Expected Rate of Return***

The expected rate of return is based upon the expected cash receipts (e.g. dividend or interest) over the holding period and the expected ending or selling price. The expected return is an unknown future return. Unless the rate of return is guaranteed, most investors recognize the several rates of return are possible. The investors summarize these possible rates of return into a single number called the expected rate of return. This return should be equal to or greater than the required rate of return for that investment. (Cheney & Moses, 1992: 34)

Each investment involves uncertainties that make the future investment return risky. So, a rational investor would agree that required return of investment should increase as the risk of investment increases.

### **Capital Asset Pricing Model**

The most important aspect of risk is the overall risk of the firm as viewed by investors in the market place. The overall risk significantly affects investment opportunities- and even more important, the owner's wealth. The basic theory that links together risk and return for all assets is commonly called the capital asset pricing model (CAPM). The total risk of security can be viewed as consisting of two parts:

Total security risk = Non-diversifiable risk + diversifiable risk

***Diversifiable risk***, which is sometimes called *unsystematic risk*, represents the portion of an asset's risk associated with random causes that can be eliminated through diversification. It is attributable to firm-specific events, such as strikes, lawsuits, regulatory actions, loss of a key account, and so forth. Non-diversifiable risk, which is also called systematic risk, is attributable to market factors that affect all firms. Factors such as war, inflation international incidents, and political events account for non-diversifiable risk. An investor can create a portfolio of assets that will eliminate all, or virtually all, diversifiable risk; the only relevant risk is non-diversifiable risk, which reflects the contribution of an asset to the risk of the portfolio. The measurement of non-diversifiable risk is thus of primary importance in selecting those assets possessing the most desired risk-return characteristics.

***Beta Coefficient*** (  $\beta$  ) is used to measure non-diversifiable risk. It is an index of the degree of movement of an asset's return in response to a change in the market return. The beta coefficient for an asset can be found by examining the asset's historical returns relative to the return for the market. The market return is the return on the stock portfolio of all traded securities. The return on a portfolio of the stocks in Standard & Poor's 500 Stock Composite Index or some similar stock index is used to measure the market return. The beta coefficient for the market is considered to be equal to 1.0; all other betas are viewed in relation to this value. Asset betas may take on values that are either positive or negative, but positive betas are the norm. The majority of beta coefficients fall between 0.5 and 2.

Using the beta coefficient, to measure non-diversifiable risk, the CAPM is given as below:

$$K_j = R_f + [(K_m - R_f) \beta_j]$$

Where  $K_j$  = required return on asset  $j$ ;  $R_f$  = risk-free rate of return;  $\beta_j$  = beta coefficient or index of non-diversifiable risk for asset  $j$ ;  $K_m$  = market return, the return on market portfolio of assets. The required return on an asset,  $K_j$ , is an increasing function of beta  $\beta_j$ , which measures non-diversifiable risk. In other words, the higher the risk, the higher the required return, and vice versa. The model can be broken into two parts, viz. risk-free rate ( $R_f$ ) and the risk premium [ $(K_m - R_f) \beta_j$ ]. The  $(K_m - R_f)$  portion of the risk premium is called the market risk premium, since it represents the premium the investor must receive for taking the average amount of risk associated with holding the market portfolio of assets.

### **2.2.3. Financial System and Market**

Financial market facilitates the transaction of financial assets like deposits, loan, bonds, securities, stocks, cheques, bills, etc. Financial market refers to all the activities of financial institution those transact on financial assets and liabilities.

Financial market is defined as place where fund suppliers and fund borrowers are brought together with the help of financial intermediaries directly or indirectly. These intermediaries channel nation's savings into most productive uses. Lenders or suppliers of funds exchange money for other financial assets that tend to provide a better future return. The net effect of such a transaction is that they buy a claim against someone's money holding at some future date. In fact, they create loan able funds in the financial market (Hemming and Piggott, 1975:11). Financial market in functional perspective is a rational system of collecting savings and allocating them efficiently to the ultimate users for investment in productive assets or current consumption (Kidwell and Peterson, 1981: 25).

Financial market can be better understood with a full fledged knowledge on their various types and categories. The lines of demarcation are not clear cut in practice. Even then for the purpose of simplification and to make it understandable, financial market is classified in the following order: money market and capital market.

### **Money market**

Money market is also known as short term financial market. The financial markets in which funds are borrowed are for short period is known as money market. Generally money market trades commercial papers, certificate to deposit, short term bonds and Government Treasury bills.

The money market is founded on the large amounts of funds, which companies, banks and other financial institutions wish to hold in highly liquid form to meet short term fluctuations in their finance. Generally, the money market is divisible under two sectors- organized and unorganized.

### **Capital market**

Capital market securities include such marketable debt securities, with maturity of a year or more, and equity securities. Most of associated markets come under the scope capital market. In fact, capital market deals with longer term and relatively riskier securities. All those who needed longer term funds depend on capital market. Likewise, business and industries issue shares and other securities to raise funds from capital market. In the context of our own country, capital market is slowly growing as well as improving. Growth of capital market has made it possible for the public limited companies to raise the long term capital by issuing shares and other industrial bonds to the investing public. On the whole, capital market is proving very significant to enhance the country's financial sector development. It is mainly because capital market is much more diverse than money market. Capital market is further classified into security market (stock market) and non-security market. Thus one can observe that stock market is the important part of capital market.

### ***Security market***

The business world today is entirely different from the one in the past. The changing life style has always been a challenge as well as opportunity to business houses. The social needs have increased tremendously in quantity as well as in quality. The expansion of business is impossible if there is no sufficient fund.



There are two sources of fund, internal and external, of fulfilling financial needs of a firm. Internal sources of financing mainly consist of retained profit and provision for depreciation whereas external source of financing is the securities issued to the general public.

Security market plays a vital role in collecting funds from issue of shares. Its fundamental work is buying and selling of securities. It also plays a vital role in the development of the country. Security market can be classified as primary market and secondary market.

**(i) Primary market**

The company to trade in the capital market issues the new securities. Market where new securities are sold is known as primary market. Here the securities of large business firms issued for the first time are bought and sold. It is the market place where instead of goods and services, securities are sold to mobilize the savings for the establishment and operation of the businesses. It is also known as original sale of securities. But this is misleading to some extent. This market is also known as IPO market because initial public offerings are done through this market. In this market, the securities can be sold either at par, or premium or discount. But in case of Nepal, Company Act, 2053 has restricted to sell the securities at discount. It means the securities can be sold at premium too. In Nepal, NEPSE has issued license to the interested organizations to perform the job of issue managers by operating primary market. SEBON, in order to regulate the primary market has issued issue management guidelines. Merchant Bankers manage issue in India and in U.S. it is done by Investment Bankers.

Investment Bankers generally hold the shares and pay the entrepreneurs. These shares can be sold either through private placements or through secondary market or through primary market. The price of securities may differ even in the primary market. There is also no equal opportunity for all the investors. The investors who have contact with investment bankers can get the shares. Investment bankers generally provide three basic services. They are: Advice and Counsel, Underwriting and Distribution.

The job of issue manager can be grouped in three different categories for the simplicity of understanding. They are:

- Pre-issue activities
- Issuing activities
- Post issue activities

## **(ii) Secondary Market**

Secondary market is the market place where second hand securities are traded. It means securities once purchased through primary market are traded in secondary market. Both the primary and secondary markets are complementary to each other. In the absence of one market other market cannot flourish. Secondary market provides the liquidity and marketability opportunity to stock market. Secondary market comprises stock exchange and Over-The-Counter market, popularly known as OTC market.

Unlisted securities are not traded in stock exchange. Exchanges generally do have their own listing rules, so unlisted securities are traded in OTC market. Stock exchanges are considered as an organized market whereas OTC market, from the earlier days, is considered as unorganized market. But presently, this market is also considered as organized as the stock exchanges. Nepal does not have OTC market. NEPSE is only the secondary market in the country.

Secondary markets arrange liquidity in listed securities. We generally used to say that marketable assets have liquidity. But marketability of the assets and liquidity of the assets are two different things. All the marketable assets may not be liquid assets. It depends upon the capacity of the market. Secondary market is also known as economic barometer of the country. This is because it reflects the economic policy of the country. All other things remain the same, the rising price shows the policy is favorable and the declining price indicates the opposite. Some of the academicians have compared the stock exchanges with the Ali Baba's Treasure. As in the story of 'Ali Baba and Forty Thieves', the door of the cave will open when someone pronounce rightly "khul ja sim sim" in the dusk, in the same way the investors can get return if the transactions are made at the right time with right decisions. (Bhattarai, 2003: 3-6)

#### **2.2.4. Behavior of Stock Market Prices**

There are numerous reasons that cause the share price fluctuation. Of them are economic, non-economic and other factors. The prices of securities are typically very sensitive, responsive to all events, both real and imagined, that cast light into the murky future. Though all factors give rise to the observed movement of share prices, it would be very hard to find a completely accepted price formation theory.

There are two approaches to explain the share price fluctuation. They are conventional and contrary approach. Market efficiency is the basis for both approaches. Conventional approach has considered that the market is inefficient, which includes technical analysis theory and fundamental analysis theory. Contrary approach argued that the market is efficient under which there are forms of efficient market hypothesis. Prior to the development of the efficient market theory, investors were generally divided into two groups: fundamentalists and technicians. (Reilly, 1986: 347).

Based on incorporation of various type of information set with speed and accuracy in pricing stock, there are three forms of efficient market theories such as weakly efficient market theory or Random walk theory, semi-strongly efficient market theory and strongly efficient market theory.

##### **2.2.4.1. Technical Analysis Theory**

Technical analysis theory involves study of past price and volume data of stocks in order to predict future price fluctuations. It is an alternative approach for predicting stock price behavior in the literature of investment management. Technical analysis is market oriented philosophy and it can concentrate on the force of supply of and demand for shares as reflected in the actions of market rather than the intrinsic worth of share. The analysts or prospective investors who analyze the security to predict the future price of a share on the basis of a study of its price movements in the past are known as technical analysts or technicians.

Technical analysts maintain that the price of a share at any time (present time) 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 a record of price movements over a period of time in the past, as the whole theory is based on the assumptions that history repeats itself, that human nature does not change and that man is likely to repeat his patterns of past movements, will repeat themselves in the future. (Raghu, 1991, p.172)

Technical analysis is the study of the internal stock exchange information as such. The word 'technical' implies a study of the market itself and not of those external factors which are reflected in the market. All the relevant factors, whatever they may be, can be reduced to the volume of the stock exchange transactions and the level of share prices: or more generally, to the sum of the statistical information produced by the market. (Felix Rosenfeld, 1975, p.297)

Technical analysis involves the study of stock market prices in an attempt to predict future price movements for the common stock of a particular firm. Initially, past prices are examined in order to identify recurring trends or patterns in price movements. Then more recent stock prices are analyzed in order to identify emerging trends or patterns that are similar to past ones. This analysis is done in the belief that these trends or patterns repeat themselves. Thus by identifying an emerging trend or pattern, the analyst hopes to predict accurately future price movements for that particular stock. (Sharpe, Alexander and Bailey, 2003, p.12)

The technician believes the forces of supply and demand are reflected in patterns of price and volume of trading. By examination of these patterns, technician predicts whether prices are moving higher or lower, and even by how much. Therefore, the patterns or a trend in prices is the basis of technical analysis. Various charts are prepared to determine trends and to determine whether prices are likely to rise or fall. Technicians tend to look

backward. The technicians think little (if at all) about future earnings and dividends. The technicians usually attempts to predict short term price movements and thus makes recommendations concerning the timing of purchases and sales of either specific stock or groups of stocks (such as industries) or stocks in general. It is sometimes said that fundamental analysis is designed to answer the question that? and technical analysis to answer the question then? \_ (Sharpe Alexander and Bailey, 2001: 844)

Technical analysis discern past patterns or trends, which they believe to repeat in the future and recommend for the timely holding and disposing mechanism, which is profitable, or that recommended for short term speculation based on its forecast of profitable pattern. The technical analysts estimate prices instead of values. They largely ignore the fundamental facts such as the firms' risks and earning growth rates in favor of concentration on various barometers of supply and demand that they have devised. (Dahal, 2002:30)

About this approach, Jack Clark Francis writes technical analysis is based on the widely accepted premise that security prices are determined by the supply of and demand for securities. The tools of technical analysis are therefore designed to measure supply and demand. Typically, technical analysts record historical financial data on charts, study these charts in an effort to find meaningful patterns, and use these patterns to predict future prices. Some charting techniques are used to predict the movements of a single security, some are used to predict the movements of a market index, and some are used to predict both the action of individual securities and the market action. The basic assumptions underlying technical analysis are listed below:

Market value is determined solely by the interaction of supply and demand. Supply and demand are governed by numerous factors, both rational and irrational. Aside from the effects of minor fluctuations in the market, stock prices tend to move in trends that persist for appreciable lengths of time. Changes in trends are caused by shifts in supply and demand. Shifts in supply and demand, no matter why they occur, can be detected sooner or later in charts of market action. Some chart patterns tend to recur, and these recurring patterns can be used to forecast price movements.

Technical analysts seek to estimate security prices rather than intrinsic values: that is, they try to forecast short run shifts in supply and demand that will affect the market price of one or more securities. They tend to ignore such factors as the firms risk and earnings growth in favor of concentrating on various barometers of supply and demand that they have devised. (Francis, 1983, p.434-435)

#### **2.2.4.2. Fundamental Analysis Theory**

One very important theory on the investment management appraisal scene is that of fundamental (intrinsic value) analysis. Fundamental analysis approach involves working to analyze different factors such as economic influences, industry factors, governmental action, firm's financial statement, its competitor and pertinent company information like product demand, earnings, dividends and management in order to calculate an intrinsic value for firm's securities. The analyst who believes on fundamental facts to determine the intrinsic value of stock is popularly known as fundamental analyst or fundamentalist.

The value of common stock is simply the present value of all the future income that the owner of the share will receive. And the actual price should reflect intrinsic value of the stock, i.e. good anticipation of cash flows and capitalization rate corresponding to future time period. But in practice, first, it is not known in advance what the appropriate discount rate should be for a particular stock. Therefore, fundamentalists estimate their intrinsic value by studying in details all the matters that are relevant to company. The study would involve examining its sales earnings, profit margins, dividends, management proficiency, industrial and business outlook, labor competence, any factor that would have a bearing on its performance in the future.\_ (Raghu, 1991: 167)

On the basis of such a study, fundamentalists project a company's future profits and earning capacity with reasonable accuracy what the price of a company's share ought to be. This estimated price is termed as intrinsic value. The intrinsic value of the stock is generally away from its present market value. Thus there is difference or gap between them. Fundamentalist reaches an investment decision by comparing this value with

current market value; it is believed that price will rise. In this situation, fundamentalists will acquire shares as this difference presents them with an opportunity to make a profit. Alternatively, if the intrinsic value is lower than the market value, the share is overpriced and is an indication to the fundamentalists to sell. Following this rule, they believe, above average return can be attained, given that market is inefficient in pricing the shares. (Dahal, 2002: 27)

Fundamental analysis begins with the assertion that the true (or intrinsic) value of any financial asset equals the present value of all cash flows that the owner of the asset expects to receive. Accordingly, the fundamental stock analyst attempts to forecast the timing and size of these cash flows and then converts them to their equivalent present value by using an appropriate discount rate. More specifically, the analyst must attempt not only to estimate this discount rate but also to forecast the stream of dividends that a particular stock will provide in the future; this process is equivalent to forecasting the firms' earning per share and payout ratios. Furthermore, the discount rate must be estimated. Once the true value of the common stock of a particular firm has been determined, it is compared with the current market price of the common stock. Stocks that have a true value less than their current market price are known as overvalued or overpriced, whereas stocks that have a true value greater than their current market price are known as undervalued or under priced stocks. The magnitude of the difference between the true value and the current market price is also important information, because the strength of the analyst's conviction that a given stock is mispriced will depend, in part, on it. Fundamental analysts believe that any notable cases of mispricing will be corrected by the market in the near future; meaning that prices of undervalued stocks will show unusual appreciation and prices of overvalued stocks will show unusual depreciation. (Sharpe, Alexander and Bailey, 2003, p. 12-13)

In the fundamental approach, the security analyst or prospective investor is primarily interested in analyzing factors such as economic influences, industry factors and pertinent company information such as product demand, earnings, dividends and management in order to calculate an intrinsic value for the firm's securities. He reaches an investment decision by comparing this value with the current market price of the security. The

fundamentalists tend to look forward. He is concerned with such matters as future earnings and dividends. It is sometimes said that fundamental analysis is designed to answer the question that? (Sharpe, Alexander and Bailey, 1998, p. 844)

Fundamental analysis uses different models like Top-Down versus Bottom-Up forecasting, probabilistic forecasting, econometric models, financial statement analysis, etc, to estimate the value of security. (Sharpe, Alexander & Bailey, 2001: 850)

Fundamental analysis theory claims that at any point of time an individual stock has an intrinsic value, which is equal to the present value of the future cash flows from the security discounted at appropriate risk adjusted discounted rate. The value of the common stock is simply the present value of all the future income which the owner of the share will receive. (Francis, 1991, p.398)

And the actual price should reflect the intrinsic value of the stock i.e. good anticipation of cash flows and capitalization rates corresponding to future time period. But in practice, first it is not known in advance what a stock's income will be in the future period, and second it is not clear what the appropriate discount rate should be for a particular stock. So, fundamentalists attempt to reach best estimate of the intrinsic value of share by studying company's sales, profit, dividends, management competency, and numerous other economic and industrial factors, which determine its future income and prospect of business opportunities. Fundamental analysis delves into companies, earnings, petition, market conditions, and many other factors. (Francis, 1986: 425)

Since in the world of uncertainty, the anticipation of values cannot be known exactly, there will be disagreement on the option about the estimation among the market participations. Then actual prices fluctuate closely around the economic value of share, because too far the true value is profitable for the participants and they do not miss to exploit the situation. Over the time, with continuous generation of new information related to company's coming prospect, the instructive value changes. As a result, price stocks just to intrinsic value. The actual value of securities therefore is considered to be function of a set of anticipation. Price changes as anticipation changes which in turn



changes as a result of new information. (Bhalla, 1983:283)

Whenever the stocks are priced over or under the true value of stock, the recommendation of sales or purchases is called for after extensive analysis, the investors derive an estimate of the intrinsic value of security, which is then compared to its market price. If the value exceeds the market price, the security should be acquired and vice versa. Following this rule, they believe above average return can be attained, given that market is inefficient in pricing the shares. (Reilly, 1986: 347)

### **Technical Analysis Vs Fundamental Analysis**

The two theories explained above have assumed that the pricing of the shares in the market is not efficient. Therefore, while making investment decision, technical analysis theory suggests for the right time of purchasing and selling whereas fundamental analysis theory recommends for the selection of appropriate stocks. It is sometimes said that fundamental analysis is designed to answer the question ‘what?’ and technical analysis to answer the question ‘when?’ (Sharpe, Alexander and Bailey, 1998, p.844)

Technical analysis and fundamental analysis are inefficient theories based on conventional approach, where technical analysis theory is based on the right time of purchasing and selling and fundamental analysis theory is based on the selection of the appropriate stocks.

Security prices are not controlled by any one buyer or seller; there are many independent buyers and sellers. Most security traders are not powerful enough to affect prices significantly. The few investment institutions that are large enough to do so are restrained by law from manipulating prices (although they do sometimes temporarily affect prices by their actions).

There are many independent sources of opinion about security prices. Fundamental analysts and technical analysts have expectations and use techniques that are very different from one another. Thus, often some so called experts will predict price rises for a security that other so called experts consider overvalued.

Economists and fundamental analysts, who test various tools of technical analysis, are essentially testing security prices to see if they equal intrinsic values. The problem is that it is impossible to tell exactly what the intrinsic value of a common stock is, because different fundamental analysts develop different estimates of the intrinsic value of a stock. Thus, there is no generally accepted observable value to compare to the stock's market price. As a result, technical analysis is subjected to indirect tests.

The indirect tests used to assess technical analysis are based on the notion that stock prices should fluctuate randomly. That is, the stock market mechanism described above proposes that the intrinsic value of a stock changes whenever news about it becomes known. If the stock market is in continuous equilibrium, then the stock's market price equals its intrinsic value, and they should fluctuate together. Technical analysts, however, claim that stock prices do not fluctuate in this way.

The chartists search for, and claim they find patterns of price fluctuations, patterns that repeat themselves and that can be used for forecasting. Stated differently, technical analysis is based on a belief in trends and patterns in stock prices such that prices fluctuate inefficiently away from their randomly fluctuating intrinsic values. Looking at stock market prices to see whether they fluctuate in discernible patterns is not only a test of the worth of technical analysis, but can also be a test of the hypothesis that prices fluctuate randomly in continuous equilibrium.

If stock prices did not fluctuate efficiently with their intrinsic values, fundamental analysis would be an unprofitable activity. That is, why should an investor bother to estimate a stock's intrinsic value if the stock's market price fluctuates inefficiently away from its value? (Francis, 1991, p.463-464)

Another approach to describe share price behavior has supposed that the market is efficient in pricing the share. The detail explanation of efficient market theory is followed in the following section.

### **2.2.5. Efficient Market Theories**

The term efficiency may be defined in various ways: allocative efficiency, operational efficiency and informational efficiency. A market is allocatively efficient when rates of return adjusted for risk are equated at the margin for all investments. A market is operationally efficient when investment funds can be transferred (shifted) at minimum cost. Capital market efficiency exists when prices reflect all available information. Efficient markets imply that all relevant information regarding a given stock is reflected in its current market price. (Weston & Copeland, 1992, p.94)

The Efficient Market Hypothesis states that at any given time, security prices fully reflect all available information. The implications of the efficient market hypothesis are truly profound. Most individuals that buy and sell securities (stocks in particular), do so under the assumption that the securities they are buying are worth more than the price that they are paying, while securities that they are selling are worth less than the selling price. But if markets are efficient and current prices fully reflect all information, then buying and selling securities in an attempt to outperform the market will effectively be a game of chance rather than skill. ([www.investorhome.com](http://www.investorhome.com))

The Efficient Market Hypothesis evolved in the 1960s from the Ph.D. dissertation of Eugene Fama. Fama persuasively made the argument that in an active market that includes many well-informed and intelligent investors, securities will be appropriately priced and reflect all available information. If a market is efficient, no information or analysis can be expected to result in out performance of an appropriate benchmark.

According to Fama, an 'efficient' market is defined as a market where there are large number of rational, profit-maximizers actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants. In an efficient market, competition among the many intelligent leads to a situation where, at any point in time, actual prices of individual securities already reflect the effects of information based both on events that have already occurred and on events which, as of now, the market expects to take place in the future. In other words, in an efficient market at any point in time, the actual price of a

security will be a good estimate of its intrinsic value.\_ (www.investorhome.com)

The primary role of the capital market is allocation of ownership of the economy's capital stock. In general terms, the ideal is a market in which prices provide accurate signals for resource allocation: that is a market in which firms can make production-investment decisions, and investors can choose among the securities that represent ownership of firms' activities under the assumption that security prices at any time fully reflect all available information. A market in which prices always fully reflect available information is called 'efficient'. (Fama, 1970, p.383-417)

Market efficiency may be defined in the context of number of areas for instance organizational efficiency, investment efficiency and so on. The word efficiency\_ as applied to securities market has unfortunately been used to represent a variety of logically distinct concept. In particular, it may mean as follows (Rubin Stein, 1979: 812):

(a) Exchange efficiency (b) Production efficiency (c) Information efficiency

However, in this study it is concerned only with informational efficiency in pricing of stocks. Efficient market theory contends that in free and perfect competitive market, stock price always reflects all available information and adjust instantaneously every influx of new information. In an efficient market, security prices fully reflect\_ available information. (Fama, 1977: 133)

About the assumptions of the efficient market theory, Fama asserts that first it is easy to determine sufficient conditions for the capital market efficiency. For example, consider a market where (i) there is no transactions costs in trading securities (ii) all information are less available to all market participants, and (iii) all agree on the implications of current information for the current prices and distribution of future prices of each security. In such a market the current price of a security obviously fully reflects all available information. Similarly according to Rubin Stein On a perfect and competitive economy composed of rational individual with homogeneous beliefs about future prices, by any meaningful definition present security prices must fully reflect all available information

about future prices. (Fama, 1975: 812)

The subject to market efficiency has been much concerned area of the study for the academicians and researchers in recent times. An initial and very important premise for the efficient market is that there are large numbers of knowledgeable and profit maximizing independent buyers and sellers as such new information is generated randomly and investors adjust the information rapidly. (Reilly, 1986: 166)

According to Malkiel (1992), 'A capital market is said to be efficient if it fully and correctly reflects all relevant information in determining security prices. Formally, the market is said to be efficient with respect to some information set, if security prices would be unaffected by revealing that information to all participants. Moreover, efficiency with respect to an information set implies that it is impossible to make economic profits by trading on the basis of that information set.' (www.e-m-h.org)

A weaker and economically more sensible version of the efficiency hypothesis says that prices reflect information to the point where the marginal benefits to acting on information (the profits to be made) do not exceed marginal costs. (Jensen, 1978) (www.e-m-h.org)

In such a market a security's price will be a good estimate of its investment value, where investment value is the present value of the security's future prospects, as estimated by well informed and capable analysts, and can be thought of as the security's fair value. Thus a (perfectly) efficient market is one in which every security's price equal its investment value at all times. A market is said to be efficient if it is impossible to make abnormal profits by using a particular set of information to formulate buying and selling decisions. In an efficient market, investors should expect to make only normal profits and earn a normal rate of return on their investments. In such a market, any new information is immediately and fully reflected in prices. New information is just that new, meaning a surprise. In a perfectly efficient market, price changes are close to random. (Sharpe, Alexander and Bailey, 1999, p.106)

According to Robert C. Higgins, *Analysis for Financial Management* (3rd edition 1992), market efficiency is a description of how prices in competitive markets respond to new information. The arrival of new information to a competitive market can be likened to the arrival of a lamb chop- to a school of flesh-eating piranha, where investors are- plausibly enough- the piranha. The instant the lamb chop hits the water; there is turmoil as the fish devour the meat. Very soon the meat is gone, leaving only the worthless bone behind, and the water returns to normal. Similarly, when new information reaches a competitive market there is much turmoil as investors buy and sell securities in response to the news, causing prices to change. Once prices adjust all that is left of the information is the worthless bone. No amount of gnawing on the bone will yield any more meat, and no further study of old information will yield any more valuable intelligence.\_  
([www.investorhome.com](http://www.investorhome.com) )

The efficient market theory being extreme hypothesis i.e. prices fully reflected all the information, cannot be tested in the empirical data in its precise form. However, postulating pricing mechanism with the types of information jet being impounded in the stock market, it can be done.

When tests of the efficient market hypothesis are carried out, securities markets are tested for varying degrees of efficiency. There are three forms of market hypothesis depending upon types of information set impounded into the prices.

First, the weakly efficient market hypothesis is examined. The weakly efficient market hypothesis says that historical stock price and volume data for securities contain no information that can be used to earn a trading profit above what could be attained with a buy-and-hold investment strategy. This suggests that technical analysis is worthless. The stock market data support the hypothesis. If the pricing in the stock market has absorbed all the information available in the stock market, it is considered as weakly efficient and participation of the technical analysis approach in the market becomes futile. In this market, past information has already been discounted in price, so excess profit cannot be derived from the investment strategy based on past information.

Also examined is the semi-strong efficient market hypothesis, which says that markets are efficient enough for prices to reflect all publicly available information. Consequently, only a few insiders, trading on short run price changes, can earn a profit larger than what could be earned by using a buy-and-hold strategy. Securities markets in the United States are probably semi-strong efficient. If current prices of the stocks reflect all the publicly available information i.e. past price and volume data and all the published accounting information, the market is semi-strongly efficient. In that market, even fundamental analysis of the published accounting information has no value, because it would have been discounted by participants accurately and instantaneously when are disclosed.

Finally, the strongly efficient market hypothesis is examined, when stock prices fully reflect all the relevant information, i.e. published and unpublished, that has impact on the future prices. In this market, insider information cannot beat the market because no single participant has monopolistic access to that kind of information. It claims that no one can consistently earn a profit larger than what could be earned with a buy-and-hold strategy. The reason given is that no one has monopolistic profit making and are found to violate this hypothesis. (Francis, 1983, p.464-465)

Generally, Efficient Market Theory believes that the stock market prices in the market are always comparative. It means stock prices are neither overvalued nor under valued, that is stock prices is always correctly valued.

Above three hypotheses are not mutually exclusive or the three hypotheses about pricing efficiency overlap. They differ only in the degree of market efficiency. If the market is semi-strongly efficient, it must be efficient in the weak sense also, because the past prices data is one form of published information which must have been important for the price. If the market is not efficient in weak sense, past price information could be used to predict the future prices to exploit abnormal profit. It implies that information contained in past price has not been reflected fully into the current prices. Similarly, for the market to be strongly efficient it must also be efficient at the semi-strong and weak levels, otherwise prices are not reflecting all relevant information. These literatures are the brief description about the theories of stock market prices. In the following section, detail

explanation of weakly efficient market or random walk theory will be explained, testing of which is the prime objective of this study, so that it makes clear about the study traced in the succeeding chapter.

#### **2.2.6. Market prices of shares as the output of the demand and supply interaction**

These are the short conceptual frameworks about the theories of stock price behavior. The share price is determined in the floor by the interaction of market forces, i.e. demand and supply. The price is determined by the point of equilibrium between supply and demand. The shifting of this balance results in incessant adjusting of price in search of the ever changing new equilibrium. Then market price moves upward and downward. There are many reasons that causes the stock price fluctuation, major of them are economic, non-economic and market factors. One basis for the determination of stock prices is dividend. Dividends are strongly influenced by the earning power of the enterprises. There is a very close correlation between corporate earnings and dividend. Earning power, in turns, is strongly influenced by interest rates. In this way, the most fundamental factor in stock price fluctuations lies in changes in corporate earnings, which together with interest rates and business cycle trends, contribute to making up the economic factors influencing the stock price. The next influencing factors are non-economic factors, including changes in political conditions, such as war or administrative changes, changes in the weather and other natural conditions, and changes in cultural conditions, such as technological advance and the like. Market factors, or internal factors of the market, consisting of the tone of the market and supply-demand relations, may be cited as the third category that influences the stock prices. The tone of the market is a form of overestimating the intrinsic value of the stock when the stock price is high because of business prosperity while underestimating its value at the time of market decline. The relationships of supply-demand are reflected directly in the volume of transactions, but there is also considerable effect from the actions of institutional investors, margin transactions, etc. Although margin transactions increase purchases when the stock price is going up, once the price begins to fall they become a selling factor and accelerate price decline. The practice of margin in finance has not been introduced, so far, in Nepal. (Sharma, 1996, p.63-64)



Securities market in Nepal witnessed a sharp growth during the past few years. The volume of trading has increased. The size of the market has been widened. The number of investing population has grown up in aggregate. The tendency of raising capital from general public is rising. Most importantly the market consciousness has been developed, so that the investors have began to think about risks, return and availability or timely corporate information regarding the investment. The market seems losing confidence of investors. There is poor liquidity for the stocks. A scarcity of floating stocks prevails in the market. Professionalism is still lacking in the service of investors and investment prevailed, where the primary motive is to derive benefit from short term price fluctuations. It appears that a very small fraction of transactions represents purchases/sales by genuine investors. The rest is driven mainly by the speculative motive. The corporate sector is still reluctant on disseminating information timely. The kinds of securities trading in the market are confined only to ordinary and preference shares. These are various major problems observed in the market nowadays. (Sharma, 1996, p.65-66)

### **2.3. Financial Market in Nepal**

The history of financial market in Nepal is not so old and it is in the growth stage. However, the development pace of share market is not completely satisfactory compared to the development and emergence of various financial and non-financial institutions.

The financial market is still in infancy in Nepal. Since, the financial market plays an important role in the efficient distribution and use of resources, it is extremely important in a poor country like Nepal. The system of lending and borrowing in an unorganized way is prevalent in Nepal since the ancient time. Substantial portion of rural credit is available for everybody from unorganized sectors. The system of providing loan through the organized sector was initiated by Tejarath Adda established in 1993 B.S. The scope of this institution, which made loans available only to the government employees in the beginning, was limited.

The system of collecting deposit and granting loans in the organized manner has started with the establishment of Nepal Bank Ltd. in 1994 B.S. The mobilization of funds by selling the securities to the general public had, however, started with the establishment of Biratnagar Jute Mill in 1993 B.S.

In fact, the prosperity of a nation and her people depends much on the manner how financial market plays a role in the transfer of funds. This helps in integrating the various sectors of the economy. Taking the case from our own country, financial system is slowly bringing significant macro-economic policy transformation effects. It is because the government role is proving vital in the growth of financial institutions as well as financial market. Altogether there exist at present 23 commercial banks, 40 development banks, 62 finance companies, 18 insurance companies are listed in NEPSE till now, many saving and credit cooperatives with NRB license and NGO's licensed to perform limited banking functions under the supervision of NRB. There are numerous other cooperatives with multi purpose functions and characteristics registered under department of cooperatives. Moreover, there are two non bank financial institutions like CIF (Citizen Investment Fund) and Provident Fund.

The total network of the financial system in the economy constitutes financial institutions and countless cooperatives. These institutions differ in age, scope, size, capital base, magnitude, function, and risk-return considerations. Because of the government's economic and financial liberalization policies, funds transfer effects between users and suppliers of capital tend to be positive.

There are mainly two types of financial market. First one is money market and second one is capital market. Short term funds of firms are raised from money market and middle term funds of firms are raised from secondary market.

### **2.3.1. Money market in Nepal**

The organized market in Nepalese context comprises Nepal Rastra Bank and commercial banks. It is called organized because the activities of commercial banks are

systematically coordinated by the Central Bank. The unorganized market is largely made of indigenous bankers and money lenders. It is unorganized because Nepal Rastra Bank does not systematically coordinate the activities of these indigenous bankers and money lenders.

Nepalese money market is not well developed in terms of securities dealt with and institution involved in the market. Institution that dealt completely on money market instrument is absent. Similarly, many of the instruments which are in developed money market like commercial paper, banker's acceptances, have not yet entered the Nepalese money market. Therefore the institutions that operate in the money market are basically Nepal Rastra Bank and commercial banks and instruments dealt are treasury bills, commercial bills and short term bank loan.

Treasury bill market is a major component of money market in Nepal, started in the year 1961-62. Since then it has been an important source of short term fund for the government except for few years taking from 1968 to 1974. But, because of low yield and absence of active secondary market with brokers, it remained mostly at the hand of the Central Bank. The holding of Treasury bill by commercial banks, though it was counted for the purpose of statutory liquid ratio, was uneven in the past particularly because of low yield. The interest rate was 5% until mid November 1988. Since then, the rate is determined through auction in the market. The weighted average (annualized) ratio on 91-day Treasury bill increased from 5.2% in 1993/94 to 10.93% in 1995/96 and again declined to 2.33% in 1998/99. It then slightly increased to 4.96% in 2000/01. Treasury bills are being held mostly by commercial banks. (Shrestha and Bhandari, 2003:105). In 2008/09, 364-day Treasury bill increased to 9.2077%.

Commercial banks are major borrowers and lenders in the short term money market. Although, commercial banks have been dealing with commercial bills since long, the bill market has its position as underdeveloped in Nepal. Only a small amount of commercial banks lending is exported and domestic bills and larger amount is invested in import and LCs and the purchase of export bills. Besides treasury and commercial bills, short term credits also forms another important money market in Nepal. Though short term credit

has not fully developed to encourage growth of money market in Nepal, even then it has been the convenient vehicle for lending and borrowing. This type of finance was largely the monopoly of commercial banks in the past but in recent years, NIDC and other development banks also provide such finance.

### **2.3.2. Capital market in Nepal**

#### ***Historical development of Capital Market in Nepal***

The history of Nepalese capital market is not too long. The systematic and organized development of capital market is a recent phenomenon in Nepal. Securities market being major component of capital market also remained undeveloped for long time. History of security market began with the floatation of shares by Biratnagar Jute Mills Ltd., Nepal Bank Ltd. in 1937 (1993 B.S.), introduction of Company Act in 1964 and the first issuance of Government Bond in 1964.

The trading on securities in Nepal was recognized too late in 1976, when Nepal Industrial Development Corporation (NIDC) and Nepal Rastra Bank (NRB) through their joint efforts initiated the establishment of Securities Marketing Center (SMC) to mobilize the public savings for ensuring public ownership in the shares of public limited companies.

In order to promote the stock exchange business, the center made a series of studies in the beginning regarding both the public limited companies and devising the ways and means of undertaking the business of buying and selling in securities. In pragmatic reality, however, the center became nothing more than the satellite organization of NRB to undertake the over-burdened functions of the latter in selling Government securities that comprise treasury bills, development bonds, etc. after a long period of seven years, doing nothing substantial in the frontiers of stock exchange business, SMC passed a new Securities Exchange Act 1983-84, to revitalize its role in the capacity of a merchant banker in view of acting as a legally acknowledged stock exchange house.

In its early period of incorporation, the center focused much on the long list of objectives without really understanding the operational mechanism of securities exchange activities.

As such, while referring to its introductory brochure, multifold objectives such as promoting public savings, and mobilizing capital funds for investment, encouraging people's participation in ownership of business and industries, providing marketing facilities for channeling securities exchange business, were prescribed. Mention was also made of underwriting, listing of securities, management of share prices, collection of essential information, etc. But, in reality, for many years, the center served in the capacity of an extra hand to support the selling function of NRB in disposing Government securities comprising treasury bills, development bonds, promissory notes, etc. There is nothing substantial done about the business of buying and selling of securities despite laudable objectives enunciated without being pragmatic about possibilities of regulating and operating the stock exchange business. merely having an executive director at the helm of center does not serve the purpose of conducting the stock exchange business transaction without encouraging the brokers' networks that are essential in creating linkage between buyers and sellers of securities. Despite making study regarding the stock exchange mechanism, the center followed a reverse practice of doing securities business without developing the floor of securities exchange by membership through their brokers' network for a long period of its establishment. As a result, the securities of existing companies that would have been brought by brokers to manage buyers and sellers of securities could not come forthwith in view of the center's strategy to monopolize the business by strict legal measures not attractive to unorganized stock brokers dealing in the securities business. (Shrestha, 1996:156)

After 1980s onwards, the center tried to create some securities exchange norms. But, all it became discouraging to develop the securities exchange business in view of lack of dashing leadership since the level of understanding about the pros and cons of stock exchange was relatively poor. The enactment of new securities exchange act in 1984 became a landmark in the Nepalese history of stock exchange and this brought change in nomenclature to the extent that the title of the center changed to Securities Exchange Center. As a result of this, the center prepared its new booklet to ensure its role in the capacity of a merchant banker, as it is the only legally acknowledged stock exchange house in national perspective. As per its information relating to listing the securities, eight public limited companies got listed in 1984.

Initially, SEC limited its function for trading the Government bonds and national saving certificates only. Then, it acted as an issue manager for corporate securities and started to list and provides market for corporate stocks from fiscal year 1984/85, under the Securities Exchange Act, 1983. Thus, the SEC served to promote the primary as well as secondary market for Government and corporate securities from fiscal year 1984/85.

In 1993, His Majesty's Government, under a program initiated to reform capital market, converted Securities Exchange Center into Nepal Stock Exchange (NEPSE) and established Security Board, Nepal (SEBON) under the Securities Exchange Act, 1983. The incorporation of SEBON and the conversion of SEC into NEPSE under the government policy on capital market reform have greatly contributed to the development of primary as well as secondary market for the corporate securities.

### **Constituents of Capital Market in Nepal**

#### **SEBON (Security Board, Nepal):**

SEBON was established on 26May, 1993 (Jestha, 2050) under the provision of the Securities Exchange Act, 1983 which was the first amendment. It was established with the objective of promoting and protecting the interest of investors by regulating the securities market. Besides the regulatory role, it is also responsible for the development of securities market in the country. So, SEBON has identified the policy development, legal and regulatory reform, standardizing disclosures, bringing enforcement to ensure compliance and promoting broad based market as a priority area to reform. The private sector has also been participating equally in establishing a sound system of securities exchange. In private sectors- investors, listed companies, financial and market intermediaries and in government sectors- Ministry of Finance, registrar of companies (Ministry of Industry, Commerce and Supply), Nepal Rastra Bank, Nepal Stock Exchange, Federation of Nepalese Chamber of Commerce and Industries (FNCCI), Institute of Chartered Accountants of Nepal (ICAN) and Association of Chartered

Accountants have been playing vital role in promoting the capital market of the country. SEBON develops the policies for the development of the market, issue licenses to establish and operate stock exchanges, registration of public issues and others.

SEBON works under the Ministry of Finance. The board is striving from the very beginning as a market developer and regulator. It is mentioned in the act that a board will be established in order to protect the interest of the investors, to systematize the securities transactions and to develop the capital market. SEBON has its own Board of Directors for the accomplishment of its objectives. The Governing Board of SEBON comprises of seven members representing various government and private sectors. The seven member board includes a full time Chairman appointed by the Government of Nepal for the tenure of four years. Other members of the Board are joint secretary from Ministry of Finance, joint secretary from Ministry of Law, Justice and Parliamentary Affairs, a representative from Nepal Rastra Bank (the central bank), a representative from Institute of Chartered Accountants of Nepal, a representative from Federation of Nepalese Chambers of Commerce and Industries, and a member appointed by the Government of Nepal amongst market experts.

Since its establishment, SEBON has been concentrating its efforts to improve the legal and statutory frameworks, which are the bases for the healthy development of the capital market. As a part of its continuous effort to build a sound system, the Securities Exchange Act, 1983 was amended for the second time on January 30, 1997. This amendment paved the way for establishing SEBON as an apex regulatory body as it widened the horizon of SEBON by bringing market intermediaries directly under its jurisdiction and also made it mandatory for the corporate bodies to report to SEBON annually as well as semi-annually regarding their performance. Although the second amendment in the Act established direct relationship of SEBON with the market intermediaries and the listed companies, supremacy in its jurisdiction is yet to be established and clearly recognized.

In order to improve such a situation, SEBON, focusing on the major areas where improvement was necessary, launched a four year strategic plan (1998-2002) with major

thrust in four major policy development areas. SEBON has also drafted a new Security Exchange Act, which has sought to improve inconsistencies observed in the present Act and established SEBON as an apex regulator of the securities market.

### ***General Objectives of SEBON***

The general objectives of SEBON can be listed as follows:

- ) To promote and protect the interest of the investors by regulating the issuance, sale and distribution of securities and purchase, sale or exchange of securities.
- ) To supervise, look after and monitor the activities of the stock exchange, corporate bodies and other related firms carrying on securities business.
- ) To render contribution to the development of capital market by making securities transactions fair, healthy, efficient and responsible.

The duties and responsibilities of SEBON are as follows:

- ) Register securities and approve prospectus of public companies.
- ) Provide license to operate stock exchanges.
- ) Provide license to operate securities businesses.
- ) Give permission to operate collective investment schemes and investment funds.
- ) Draft regulations, issue directives and guidelines, and approve bylaws of stock exchanges.
- ) Supervise and monitor stock exchanges and securities business activities.
- ) Take enforcement measures to ensure market integrity.
- ) Review reporting of issuer and listed companies, and securities business persons.
- ) Conduct research, study and awareness programs regarding securities market.
- ) Coordinate and cooperate with other domestic as well as international regulators.
- ) Frame policies and programs relating to securities markets and advise the Government of Nepal in this regard.

### **Nepal Stock Exchange (NEPSE):**



NEPSE was established in 1993. It was earlier known as Securities Exchange Center. It is a non-profit making organization, operating under Securities Exchange Act, 1983. It is the only secondary securities market in Nepal.

The basic objectives of NEPSE is to impact free marketability and liquidity to the government and corporate securities by facilitating transactions in its trading floor through members, market intermediaries, such as brokers, market makers, etc. NEPSE opened its trading floor on 13th January 1994.

Government of Nepal, Nepal Rastra Bank, Nepal Industrial Development Corporation and members are the shareholders of the NEPSE.

The Board of Directors of NEPSE consist 9 directors in accordance with Securities Exchange Act, 1983. Six directors are nominated by Government of Nepal and different institutional investors. Two from the licensed members and the General Manager of the NEPSE is the Ex-Officio Director of the Board. The authorized and issued capital of the exchange is Rs.50millions. Of this Rs.30.41millions is subscribed by Government of Nepal, Nepal Rastra Bank, Nepal Industrial Development Corporation and licensed members. Members of NEPSE are permitted to act as intermediaries in buying and selling of Government bonds and listed corporate securities. At present, there are 27 member brokers and 2 market makers, who operate on the trading floor as per the Securities Exchange Act, 1983, rules and by-laws. Besides this, NEPSE has also granted membership to issue and sales managers and securities traders (Dealers). Issue and sales managers work as managers to the issue and underwriter for public issue of securities whereas securities traders (Dealers) work as individual portfolio manager. At present there are 11 issue and sales managers and 2 dealers (Secondary market). Trading on the floor of the NEPSE is restricted to listed corporate securities and government bonds. At present, 135 companies have listed their securities to make them eligible for trading. Besides this, NCM Mutual Fund enlisted its units to make them eligible to trade in the floor. There are 135 companies whose securities have been listed in the NEPSE by the end of the fiscal year 2005/06. Among them, 15 are commercial banks, 8 are development banks, 50 are finance companies, 15 are insurance companies, 4 are hotels, 29 are manufacturing and processing companies, 8 are trading companies and 6 are other

companies.

NEPSE has adopted an open Out-Cry\_ system. It means transactions of securities are conducted on the open auction principle on the trading floor. The buying broker with the highest bid will post the price and his code number on the buying column, while the selling broker with the lowest offer will post the price and code number on the selling column on the quotation board. The market 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 on the floor. (www.nepalstock.com)

#### **2.4. Review of Articles**

Articles, journals and bulletins are of great significance for thesis writing. So in order to make this study more comprehensive, some articles, books and dissertations, etc. related to stock market are consulted and reviewed.

Investors were enlightened and they started inquiring about company's financial health and future prospect before buying or selling shares. People turned to price-earning multiples; NEPSE indexes informed trading became sort of a norm when stock market entered 1995. Many who could not cope with the system of intelligent speculation left the ground. As a result, the numbers of buyers gradually came down and so did the prices. (The Katmandu Post; Pradhan, May 18, 1999)

ADB experts have seen many obstacles to the growth of the capital market. This includes low level of investors' confidence, disclosure of poor and manipulated financial information, weak enforcement of regulation, absence of institutional investors, lack of diversity in range of financial instruments and the scope of active participation for the various intermediaries limited by vertical barriers. (The Rising Nepal, Neupane, Jan 20, 2001).

The current downtrend in share market is not so easy to recover unless strong regular

measures are not enforced. The honeymoon days of share market exist no more but there are still unlimited financial fortunes by sharp practices that went undetected during the period of share market boom. Among all, the regulation of share market to control on the unfair trade practice would be done of the strong measures to revive the share market in future. In order to curb the fraudulent practices and discourage the dissemination of misleading information in the current share market of Nepal, the regulating authorities must govern the activities in the share market. There should be immediate check on the unfair share trading practices. Wash sales should be discouraged by immediate action. Nepal Stock Exchange can form a watchdog team to investigate on the real existence of a share transaction. The present practice of share trading by mutual consent is a kind of wash sales that should be discouraged as it creates distortion in the price determined by the market forces. Such action helps in avoidance of fiction names created by several different share brokers in share transaction and also to check on the creation of illusion of rising price. Moreover, the challenge for the regulating authority is to control on the hidden establishment of share market corners and pool by some market price manipulators. Surprise inspection and secret vigilance by a professional team (without making known who are its members and advisors) can check on the functioning of the office of such price manipulators interested to corner a share market in the hope of trapping or squeezing short sellers. If found, dishonest in share market dealings, action should be taken against such price manipulators by imposing heavy penalties and punishment, depending upon the nature of offence.

At the same time, the concerned authority has to discourage the practice of churning by the brokers since it helps brokers to generate sales commissions regardless of benefits of such transaction to the client. Moreover, it is a right time for the concerned authorities to develop transparent guidelines to have strict vigilance and control on misuse. Insiders should be debarred from leaking price sensitive information by imposing heavy penalties and punishment for breach of legal provision. The revival of the share market requires minimum fulfillment of the responsibilities and accountabilities among company management to be shareholder focused. Time has come for company management to respond to shareholders expectation of return from their investment in shares of companies. Management should make it a habit to change attitude to think what is good

for shareholders is good for company as a whole.

Immediate measures lies in giving attention to shareholders' grievances like timely conduction of annual general meeting, improving the quality, standard and coverage of reporting, developing minimum return on investment strategy and index. In order to the downtrend in share market, various reformative measures are urgently necessary to curb on unfair share market practices through the development of comprehensive and transparent stock exchange guidelines by the concerned authorities. The existing company management has to reorient its positive attitude towards investors and shareholders by improving the quality of timely reporting and providing the expected return to win the losing confidence of shareholders. Investors should be self-conscious in the selection of brokers for trading in securities and organize themselves to be active to protect their rights. All these will help in the revival of share market to make it more active by attracting the investing public. (The Rising Nepal, Thapaliya, Feb. 22, 2002)

Capital market is a crucial element in the national economy. Its role in reinvigorating and boosting the economic activities in the country holds significance. The strategic plan released by security board can, to a great extent, energize the investor's dealer by increasing investor interest in it. Security market experience both boom and boost soon after the beginning of securities trading through brokers' members in the stock exchange floor. Though the market started to function quickly boosting the prices of shares to an unexpected level, it could not sustain. There is an urgent need for proficient development of a market standard and information dissemination system focusing mainly on corporate financial disclosure practices and transparency, corporate accounting and auditing, securities market regulation and corporate governance. To implement the above, Security Board has a great responsibility as to reviewing and developing regulatory standards to make them relevant with the need of issuers, investors along with promoting efficient capital formation. (Business Age, Dahal, April 1999: 15)

Rating the institutions on the basis of price earning ratio or dividend has traditionally done investment in share. Hardly do investors compare current assets with current liabilities or take a look at the debt equity ratio. Unless investors begin analyzing the

intricate financial details of corporate institutions before making investment decision, the market cannot develop smoothly. Share investment has traditionally been guided by the investors' returns. Most earnings of investor here have been in the form of dividends rather than capital gains, though high dividend is often seen, in corporate finance theory as a wasteful use of scarce capital. With the commercial banks becoming the only potential investment destination, with other stock market participants hardly making profit, and even if they did fail to meet investor's expectations, demand for shares of commercial banks outpaced supply and their prices boomed.

There are many loopholes in our Stock Exchange Act. Investors feel insecure here. A few years back there was a company called Nimrod Pharmaceutical Company that floated in shares, but where is it now? Similarly, it has been more than a year that Bansbari Leather has allotted its shares, but why didn't the company list its shares in the market? It has been three years that Gorakhkali Rubber Udhyog hasn't called for its AGM. Government remained silent in all these cases. This is why the general public as well as the institutional buyers are not feeling secure in investing in stock market. (Business Age, Bhattarai, Jan 2000: 25)

Share trading scandal formed the headline of major dailies of Nepal a few days ago. The news was that some of the staff of Nepal Merchant Banking and Finance Ltd. (NMB), the share registrar of Standard Chartered Bank Nepal Ltd were involved in unauthorized sale of the shares of investors not present in the country. They were also alleged of cheating such shareholders of their dividend. As a share registrar, the company's duties were to update the shareholders' information, distribute the benefits provided by the client company to the latter's shareholders and to verify the signature of the shareholder at the time of ownership transfer of shares. But the staff forged the signatures of the company's shareholders so as to sell their shares without the knowledge of the shareholders and to claim themselves the dividend allotted to such shareholders. When the media reported this scandal, NMB blamed on its staff and registered a forgery case in the District Police Office, Kathmandu. The accused is still learnt to be in the police custody. As stated in the news, though some other staffs were also involved in this scandal, NMB has registered the case against only one of its staff. Another of the NMB staff accused in this scandal is

reported to have escaped out of the country. If such types of scandals, whether they are reported by the media or not, are repeated frequently and no attempts are made to rectify the flaws in the system and to punish the guilty, there is no doubt that sooner or later the capital market will lose the investors.

Investment in the capital market now has become very uncertain, sending the investors in search of avenues of more certain returns. The equity investment is considered riskier than investment in bond, preferred stock, etc. The secondary market is not performing well. The NEPSE index is hovering around 208 and 215 since long. After great slump in Nepal Stock Market in fiscal year 2000/01, dissatisfaction has increased in the mind of investors. The NEPSE index on 23rd November 2000 had reached the peak of 545.82 and after that it is continuously on the decline. (The Business Age, Bhattarai, March 2004: 42)

## **2.5. Thesis review**

There are many dissertations written by various researchers in the past years. Among them some dissertations are reviewed here for analysis of literature under this section.

Mr. Mukti Aryal (1995) has conducted the research titled '*The General Behavior of Stock Market Prices*'. The main objectives of this study were to discuss the movement of stock market prices and develop the empirical probability distribution of successive price change of an individual common stock and a stock market as a whole. This study is based on secondary information obtained from Nepal Stock Exchange. This study covers almost 8 months period (13 Jan 1994 to 13 Sep 1994) and took about 21 stocks listed in NEPSE. He has applied run test as statistical tool to analyze the data and get results. He has concluded that the assumption of independence, as predicted by random walk model of security price behavior, has been refuted at least for Nepalese context as the first approximation even in the rough way for early days of stock market operation. This rejection of hypothesis made clear that the knowledge of past and now becomes useful in predicting the future movements of stock market prices. The investors, on the floor of stock exchanges for securities, can make higher expected profits in the future based on

these historical price series. In other words, the dependence nature of price series produced by general market fluctuation statistically implied today's price change is positively depending upon yesterday's price change. This implied that there is a sufficient lack of financial and market analysts who are sophisticate and superior in analyzing the general market fluctuations, predicting the occurrence of future potential and economic events and their eventual effects on price series.

Mr. Surya Chandra Shrestha (2001) has conducted the research on '*Stock Price Behavior in Nepal*'. This study has focused to examine the efficiency of the stock market in Nepal. The serial correlation coefficient of the daily price changes for 1 and 2 lag days, and runs of the series of daily price changes lead to conclude that the successive price changes are not independent random variable for the 30 sample stocks listed in the Nepal Stock Exchange Ltd. (NEPSE). Therefore, the random walk theory is not a suitable description for the stock market price behavior in Nepal. The dependence in the series of price changes observed imply that the price changes in the future market will not be independent from the price changes of the previous days. It implies that the information of the past price changes is helpful in predicting future price changes in a way that the speculation through technical analysis can make higher expected profit than they would be under buy-and-hold policy (i.e. average market return). Therefore, opportunities are available to sophisticated (both institutional and individual) investors to earn higher return in the market. The existence and participation of the sophisticated investors have not been realized from the findings of the study. It is realized that mostly the investors have dominated in the market that can cause prices to diverge significantly from intrinsic values because the very existences of the sophisticated traders cause to erase the opportunities of persistence in prices which establish independence of successive price changes.

Mr. Jas Bahadur Gurung (1999) has also conducted the research on the '*Share Price Behavior of listed companies in Nepal*'. There are altogether 104 companies listed in the stock exchange. The number of listed companies is in increasing trend. The number of the companies listed in the stock exchange was 72 in 1994/95. It was 83 in 1995/96, 90 in 1997/98 and 104 companies up to December 1998. The correlation coefficient between

the number of traded and listed companies is 0.97. Thus, the relationship is significant. The correlation between the number of traded and listed companies is negative in trading group whereas it is perfectly positive in the case of banking group. Paid up capital, in general, is in increasing trend in each year and in each group except in the last year of manufacturing and processing group. The paid up capital is the highest in manufacturing and processing industries whereas it is the lowest in trading group.

Prices of shares are fluctuating during the study period. Market prices of shares have dramatically gone up in the first year and sharply decreased in the same year. Prices, in general, have declined in the successive years. Further, there is high variation in prices, high, low and closing, in the initial years than that of latter ones. Capital market in Nepal was bullish in the initial periods but it turned into bearish in the successive years. 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 later years. Thus, now the capital market is passing through the bearish trend in Nepal. There is lack of investment opportunities and the economy is passing through the recession year by year.

Mr. Bidur Khadka (1997) has also done the research on '*A study on the Share Price Behavior*'. This study is focused on the analysis of the relation of MPS with different financial indicators and the level of risk associated with the common stock investment of the sample companies comprising commercial banks and finance companies. The general public investors do invest their scare saving funds in the common stock of the public companies through primary or secondary market, with the expectation of good returns in the future. The determination of MPS of any public companies should be in accordance with their financial performance. There is not a single financial indicator that has 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 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.



Mr. Dipak Raj Adhikari (2008) has done the research on '*Factors affecting the share price of Nepalese Commercial Banks Listed in NEPSE*'. He tried to explore the factors that have significant influence on the stock price in NEPSE. He concluded his study by quoting; Nepalese investors have not adequate education about the capital market. They do not have good knowledge and information to analysis the scenario and to forecast share price, perhaps due to rather shows irrational behavior. In NEPSE, DPS, BVPS, and EPS individually do not have constituent relationship with the market price of the share. So, there are other major factors affecting the share price significantly.

Mr. Shyam Raj Joshi (2008) has conducted his study on '*Financial Performance Indicators and Stock Market Behavior: A study of listed commercial banks in Nepal*'. The major objectives of his study were to examine the relation of financial performance, dividends with stock price as well as to explore the signaling effect on the stock price determination. The findings of his study were market price moves insignificantly. Investors and sellers of stocks were not aware with the financial indicators (DPS, BVPS, EPS, ROA and ROE). Stocks were not traded because of good financial parameters but because of non-financial factors such as lack of alternative investment opportunity, expectation of bonus shares, right shares, rumors, speculations etc.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

Research Methodology refers to the various sequential steps to be adopted by researcher in studying a problem for the sake of attaining certain research objective. In other words, it is a systematic way to solve the research problem. This chapter refers to the overall research methods from the theoretical aspects to the collection and analysis of data. This study covers quantitative methodology in a greater extent and also uses the descriptive part based on both technical aspect and logical aspect. Its focus is made on the application of the technique and procedure to analyses the relevant variables to see the basic relationship between relevant topics. To achieve the basis objectives both financial and statistical tools has been adopted.

#### **3.2. Research Design**

In order to make any type of research well set research design is necessary to fulfill the objectives of study. Generally, research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research questions and to control variance. It is arrangement for collection and analysis of data. To achieve the objective of this study, descriptive and analytical research design has been used. Some financial and statistical tools have been applied to examine facts and descriptive techniques have been adopted to determine factors affecting share price of commercial banks in the NEPSE. To determine the affect of EPS, BVPS and DPS on stock price, historical research design is adopted along with correlation and regression analysis and secondly this study includes exploratory and analysis approach to identify the qualitative factors affecting share price of the exact scenario of the Nepalese stock market.

#### **3.3. Research variables**

A variable is a symbol to which numerals or values are assigned. So the variables can take on values. This research intends to identify the factors that affect share price in

Nepalese commercial bank. So the market price of the share is the dependent variable, which affected by many variables, such variables are regarded as the independent variables in the study. The entire factors that affects the market price of share such as earnings, dividends, book value per share, interest rate, liquidity, economy of the nation, peace and prosperity, rumors and whims, political factors and other signaling factors are independent variables.

### **3.4. Population and Sample**

This study intends to identify the factors affecting the stock price of Nepalese commercial banks listed in NEPSE. So the population of the study is all the listed commercial bank in NEPSE till now i.e. 29 banks. In this study five sample organizations representing the private commercial banks are taken into sample. The following table reflects the detail of the samples.

**Table 3.1**  
**Sampled Commercial Banks**

<b>S. No.</b>	<b>Sampled Banks</b>
1	Standard Chartered Bank Limited
2	Nabil Bank Limited
3	Everest Bank Limited
4	Bank of Kathamandu Limited
5	Nepal Investment Bank Limited

The secondary data of sample organizations are analyzed to determine the relationship of earning, dividend and book value with market price of shares in Nepalese commercial banks.

### **3.5. Nature and Sources of Data**

The study is based on secondary data. To show the relationship between market price per share with earnings, book value and dividend, secondary data are used but to determine

the factors which affect the stock price.

### **3.6. Data Collection Techniques**

The research consists of secondary data. To collect the secondary data the searcher has visited the different websites, libraries, concerned companies, NEPSE, SEBO-N and other useful book stores, and collection related publications and periodicals. Official websites were searched in order to collect required information. Furthermore, secondary data related to common stocks of concerned companies have been downloaded from the official website of NEPSE, [www.nepalstock.com](http://www.nepalstock.com).

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### **3.7. Data Analysis Tool**

The data collected from various sources leads to the logical conclusion, only if the appropriate tools and techniques are adapted to analyze such data. The collected data has been no meaning if such data are not analyzed. To analyze the data in this research, the researcher has used some statistical and financial tools which are explained here.

#### **3.7.1. Financial Tools**

Except the statistical tools, some financial tools are also used in this research work. The major financial tools used in this research are.

#### **Earning per Share**

The Earning per Share (EPS) is the share of a stock on the earning of the company.

$$\text{EPS} = \frac{\text{Total Earning of company}}{\text{No. of shares outstanding}}$$

#### **Dividend per Share**

The DPS is the amount paid as dividend to the holder of one share of the stock.

$$\text{DPS} = \frac{\text{Total Dividend paid}}{\text{No of Shares Outstanding}}$$

### **Market Price per Share**

The MPS is the amount in which a share of the stock is traded in the market.

$$\text{MPS} = \frac{\text{Total Market Capitalization}}{\text{No of shares outstanding}}$$

### **Book Value per Share**

The BVPS represents the real net worth per share. It is simply the ratio of net worth (share capital plus retained earnings i.e. ownership capital) and the number on existing share.

$$\text{BVPS} = \frac{\text{Net Worth}}{\text{No. of shares outstanding}}$$

### **Holding Period Return**

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

$$\text{HPR} = \frac{\text{Ending Price} - \text{Beginning Price} + \text{Cash Dividend}}{\text{Beginning Price}}$$

Symbolically;

$$\text{HPR} = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

Where;  $P_t$  = Price of stock at time t.

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

$D_t$  = Dividend per share at time t

### **Risk and Return Analysis of Market**

### **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 a value weighted index and comprises of all the stocks listed in NEPSE. The NEPSE Index is used for the study.

$$\text{Annual Market Return } (R_m) = \frac{\text{Ending NEPSE Index} - \text{Beginning NEPSE Index}}{\text{Beginning NEPSE Index}}$$

$$\text{Average Market Return} = \frac{R_m}{n}$$

Where;  $R_m$  = summation of annual market return

$n$  = number of observations.

### **Risk of Market Return**

Risk of market return is also measured by the standard deviation of the return of market.

The standard deviation of market is computed as;

$$\text{Standard Deviation of Market Return } (\sigma_m) = \sqrt{\frac{\sum R_m - R_m \bar{A}}{n - 1}}$$

### **3.7.2. Statistical Tools**

Statistical tools are the measures or the instruments to analyze the collected data from different sources. In statistics, there are numerous statistical tools to analyze data of various matures. In this study, the researcher has used the following statistical tools to analyze the data.

### **Correlation Coefficient**

When the relationship is of quantities nature, the appropriate statistical tool for discovering and measuring the relationship and expressing it in a brief formula is known as correlation. If the values of the variables are directly proportional then the correlation is said to be positive. On the other hand, if the values of the variables are inversely proportional, the correlation is said to be negative, but the correlation coefficient always

remains within the limit of +1 to -1. By Karl Pearson, the simple correlation coefficient (r) is;

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

Where r = the correlation coefficient between two variables X and Y

When r = +1, there is perfect positive correlation

When r = -1, there is perfect negative correlation

When r = 0, there is no correlation

When r = ±0.7 to ±0.999, there is high degree of positive or negative correlation

When r = ±0.5 to ±0.699, there is moderate degree of positive or negative correlation

When r < ±0.5, there is low degree of positive or negative correlation.

### Probable Error (P.E.)

The Probable Error denoted by P.E. is used to measure the reliability and test of significance of correlation coefficient. Significance of relationship has been tested by using the probable error and it is denoted by the following model;

$$\text{Probable Error (P.E.)} = 0.6745 \left| \frac{1 Z r^2}{\sqrt{n}} \right|$$

Where; r = the value of correlation coefficient

n = number of pairs of observations

If r < P.E., it is insignificant, i.e. there is no evidence of correlation

If r > 6P.E., it is significant

If P.E. < r < 6P.E., nothing can be concluded

### Simple Regression

The analysis used to describe the average mathematical between two variables is called simple linear regression analysis. Here, simple means, only one independent variable and linear because the relationship between the independent and dependent variables is

assumed to be a linear. The regression line is the line, which gives the best estimate of one variable for any given value of the other variable. In case of two variables X and Y, we will have two regression lines i.e. lines is called the regression equation and also estimating equations.

X and Y are the independent and dependent variable respectively.

The Regression equation of Y on X is expressed as;

$$Y = a + bX$$

We get the normal equation for estimating 'a' and 'b' as;

$$\sum X = n a + b \sum Y$$

$$\sum XY = a \sum Y + b \sum Y^2$$

Where; X = the value of independent variable

Y = the value of dependent variable

a = Y-intercept

b = slope of the trend line/coefficient of regression

n = number of pairs of observations

$$a = \bar{Y} - b\bar{X}$$

### **Coefficient of Regression**

The coefficient 'b' which is the slope of line of regression of y on x is called the coefficient of regression of Y on X. It represents the increment in the value of the dependent variable Y for a unit change in the value of the independent rate of change.

The convenient way to calculate the variable of 'b' is as;

$$b = \frac{\sum XY - \frac{\sum X \sum Y}{n}}{\sum X^2 - \frac{(\sum X)^2}{n}}$$

### **Multiple Regression**

Multiple regression is defined as the statistical device, which is used to estimate for the value of one dependent variable when the values of two or more independent variables are given. It means it is the statistical technique to find out the relationship between one



dependent variable and two or more independent variables at same time.

Multiple regression equation describes the average relationship between one dependent variable with other two and more independent variables which is used to forecast the value of dependent variable.

$$\text{Here, } X_1 = a + b_1X_2 + b_2X_3$$

Where,  $X_1$  is dependent variable

$X_2$  and  $X_3$  are independent variables

$a$  = value of  $X_1$  when  $X_2 = 0$  and  $X_3 = 0$  (i.e. intercept made by regression line)

$b_1$  = Partial regression coefficient of  $X_1$  on  $X_2$ , when  $X_3$  is constant

$b_2$  = Partial regression coefficient of  $X_1$  on  $X_3$ , when  $X_2$  is constant

$a$ ,  $b_1$  and  $b_2$  are the parameter of the equation whose values are to be determined as follows;

$$X_1 = Na + b_1X_2 + b_2X_3 \dots\dots\dots (i)$$

$$X_1X_2 = a X_2 + b_1X_2^2 + b_2X_2X_3 \dots\dots\dots (ii)$$

$$X_1X_3 = a X_3 + b_1X_2X_3 + b_2X_3^2 \dots\dots\dots (iii)$$

**Coefficient of Multiple Determination ( $R^2$ )**

The coefficient of determination gives the percentage variation in the dependent variable that is accounted for by the dependent variables. In other words, the coefficient of determination gives the ratio of expected variance to the total variance. The coefficient of determination is given by the square of the correlation coefficient, i.e.  $R^2$ .

$$R^2 = \frac{\text{Explained Variation}}{\text{Total Variation}}$$

## **CHAPTER-IV**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1. Introduction**

This chapter is the main part of this study. The basic objectives of this chapter are to analyze and elucidate the collected data following the conversion of unprocessed data to an understandable presentation. The data are collected in unprocessed form. Such collected data are presented in systematic formats and techniques. The analysis of data consists of organizing tabulating and performing statistical analysis. In this chapter, the secondary data collected from different sources, are presented in an understandable presentation. And it is analyzed and interpreted using quantitative measures whichever is appropriate.

This chapter presents the analysis and result of issues relating to the market price volatility in Nepalese commercial banks.

This chapter investigates on potential responsible factors in the price of commercial banks, instructions responsible for present market status of commercial banks, potential factors affecting the share price and some potential strategies to make the better stock market practices by the commercial banks.

In the some way, the study try to check the impact of signaling effect on fluctuation of stock price with the help of different major events during the different time. To see the relationship between EPS, DPS and BVPS with MVPS after correlation has to be tested. After calculating correlation, it can be found that there is positive or negative correlation of EPS, DPS and BVPS with MVPS by help of  $r$ ,  $r^2$ , P.E., and test price with help of pair t-test.

The total number of listed companies reached 176 till now. At the end of review period 23 companies were listed under commercial banks group. Similarly, there were 40 companies in development bank group, 62 companies in finance group, 19 companies in insurance group, 18 manufacturing group, 4 companies each in hotel group, hydropower group and trading group and two in other group. Out of 176 companies only 5

commercial banks are taken for the study.

### **Analysis of individual Commercial Bank**

From among the listed companies, the researcher has chosen 5 listed private commercial banks that falls in group 'A'. the summary of the financial data of the sample listed banks of the study are presented with 5 years data (from 2003/04 to 2008/09) including market value per share (MVPS), Earning per share, dividend per share and book value per share.

**Table 4.1**

### **Analysis of individual commercial banks**

#### **Standard Chartered Bank Limited.**

<b>Fiscal Year</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>
<b>EPS</b>	143.14	175.84	167.37	131.92	109.99
<b>DPS</b>	120	130	80	80	50
<b>BVPS</b>	422.37	468.22	512.12	401.52	327.53
<b>MVPS</b>	2345	3775	5900	6830	6010

#### **Nabil Bank Limited**

<b>Fiscal Year</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>
<b>EPS</b>	105.49	129.21	137.08	108.31	106.76
<b>DPS</b>	70	85	100	60	35
<b>BVPS</b>	337	381	418	345	324
<b>MVPS</b>	1505	2240	5050	5275	4899

#### **Everest Bank Limited**

<b>Fiscal Year</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>
<b>EPS</b>	54.22	62.78	78.42	91.82	99.99
<b>DPS</b>	20	25	10	20	30
<b>BVPS</b>	219.87	217.67	280.82	321.77	313.64
<b>MVPS</b>	870	1379	2430	3132	2455

### **Bank of Kathmandu**

<b>Fiscal Year</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>
<b>EPS</b>	30.10	43.67	43.50	59.94	54.68
<b>DPS</b>	15	18	20	2.11	7.37
<b>BVPS</b>	213.60	230.37	164.68	222.51	206.25
<b>MVPS</b>	430	850	1375	2350	1825

### **Nepal Investment Bank Limited**

<b>Fiscal Year</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>
<b>EPS</b>	39.5	59.35	62.57	57.87	37.42
<b>DPS</b>	12.50	20	5	7.50	20
<b>BVPS</b>	201	240	234	223	162
<b>MVPS</b>	800	1260	1729	2450	1388

## **4.2. Correlation Coefficient Analysis**

Correlation analysis is the relationship between dependent variables so it is called constant variable also. Correlation is denoted by 'r' and ranges from +1 indicating perfect correlation to -1, indicating perfect negative correlation. If the correlation is zero, then the factors are independent or uncorrelated.

In this chapter, correlation between MVPS and EPS, DPS and BVPS have been calculated. The result have analyzed and interpreted and then significance of correlation coefficient has been tested using Karl Pearson's correlation of coefficient with the help of Probable Error.

### **4.2.1. Correlation Coefficient Analysis between MVPS and EPS and Test of its Significance by using Probable Error**

This table is presented to show the relationship between MVPS and EPS. It is know that the correlation coefficient helps to determine any relationship exists among variables and the test of significant of this correlation coefficient. The statistical table 4.3 clearly demonstrates that the degree of relationship between MVPS and EPS.

**Table 4.2**  
**Correlation Coefficient Analysis between MVPS and EPS**

<b>S. No.</b>	<b>Name of Banks</b>	<b>Correlation coefficient (r)</b>	<b>Coefficient of Determination (r<sup>2</sup>)</b>	<b>Probable Error (P.E.)</b>	<b>6 P.E.</b>	<b>Result</b>
<b>1</b>	Standard Chartered Bank Ltd.	0.362	0.132	0.262	1.571	Nothing can be concluded
<b>2</b>	Nabil Bank Ltd.	0.080	0.006	0.299	1.799	Insignificant
<b>3</b>	Everest Bank Ltd.	0.891	0.795	0.062	0.371	Significant
<b>4</b>	Bank Of Kathmandu Ltd.	0.959	0.894	0.032	0.192	Significant
<b>5</b>	Nepal Investment Bank Ltd.	0.570	0.325	0.204	1.222	Nothing can be concluded

Source: Annex-I

From the above table 4.4, we can clearly see that the correlation of MVPS with EPS 0.362, 0.080, 0.891, 0.959 and 0.570 in SCB, NABIL, EBL, BOK and NIBL respectively which shows the increase in the value of EPS by 13.2%, 0.6%, 79.5%, 89.4% and 32.5% respectively cause to increase MVPS by 100% . Thus there is high degree of positive correlation of EBL and BOK. And there is moderate degree of positive correlation in NIBL and low degree of positive correlation in SCB and NABIL. Such an increasing value of MVPS with EPS is healthy indicator of the financial activities of companies in the least development countries like Nepal.

The value of 'r' is less than six times P.E. and greater than P.E. ( $P.E. < r < 6P.E.$ ) in case of SCB and NIBL, in such situation nothing can be concluded for significance of correlation coefficient. But the value of 'r' is greater than six times P.E. ( $r > 6P.E.$ ) in case of EBL and

BOK, so it is concluded that the correlation coefficient between MVPS and EPS is significant. In other words, there is definitely evidence of correlation between MVPS and EPS. An exceptional case is shown in NABIL, the value of 'r' is lower than P.E. this indicates that the correlation coefficient between MVPS and EPS is insignificant. In other words, there is no evidence of correlation between MVPS and EPS.

#### 4.2.2. Correlation Coefficient Analysis between MVPS and DPS and Test of its Significance by using Probable Error

This table is presented to show the relationship between MVPS and DPS. It is know that the correlation coefficient helps to determine of any relationship exists among variables and this test the significant of correlation coefficient.

**Table 4.3**  
**Correlation Coefficient Analysis between MVPS and DPS**

<b>S. No.</b>	<b>Name of Banks</b>	<b>Probable Error (P.E.)</b>	<b>Correlation coefficient (r)</b>	<b>Coefficient of Determination (r<sup>2</sup>)</b>	<b>6 P.E.</b>	<b>Result</b>
<b>1</b>	Standard Chartered Bank Ltd.	0.104	0.809	0.654	0.626	Significant
<b>2</b>	Nabil Bank Ltd.	0.287	0.222	0.049	1.721	Insignificant
<b>3</b>	Everest Bank Ltd.	0.297	0.115	0.013	1.786	Insignificant
<b>4</b>	Bank Of Kathmandu Ltd.	0.122	0.771	0.594	0.735	Significant
<b>5</b>	Nepal Investment Bank Ltd.	0.214	0.538	0.289	1.287	Nothing can be concluded

Source: Annex-I

The statistical table 4.5 clear demonstrates that the degree of relationship between MVPS and DPS seems to be significant in all the banks. It reveals that there is positive correlation between DPS and MVPS.

From the above table 4.4, it is shown that the correlation coefficient of MVPS with DPS of SCB, NABIL, EBL, BOK and NIBL are 0.809, 0.222, 0.115, 0.771 and 0.538 respectively. This shows that increase in value of MVPS is increased by 100% due to increase in DPS by 65.4%, 4.9%, 1.3%, 59.4%, and 28.9% of SCB, NABIL, EBL, BOK and NIBL respectively.

We can see clearly that there is existed high degree of positive correlation of SCB and BOK. Moderate degree of positive correlation exists in NIBL and low degree of positive correlation is existed in case of EBL and NABIL.

The value of 'r' is greater than six times P.E. ( $r > 6P.E.$ ) in case of SCB and BOK. This means that the correlation coefficient between MVPS and DPS is significant. In other words, there is definitely evidence of correlation between MVPS and DPS. The value of 'r' is lower than P.E. ( $r < P.E.$ ) in case of NABIL and EBL, this means that the correlation coefficient between MVPS and DPS is not significant. In other words there is no evidence of correlation between MVPS and DPS. But the value of 'r' is greater than P.E. and lower than six times P.E. ( $P.E. < r < 6 P.E.$ ) in case of NIBL. This means that it can not conclude about the test of significance of the correlation coefficient.

#### **4.2.3. Correlation Coefficient Analysis between MVPS and BVPS and test of its Significance**

This table presents to show the relationship between MVPS and BVPS. It is know that correlation coefficient helps to determine if any relationship exists among variables and this test the significant of correlation coefficient.

**Table 4.4****Correlation Coefficient Analysis between MVPS and BVPS**

<b>S. No.</b>	<b>Name of Banks</b>	<b>Probable Error (P.E.)</b>	<b>Correlation coefficient (r)</b>	<b>Coefficient of Determination (r<sup>2</sup>)</b>	<b>6 P.E.</b>	<b>Result</b>
<b>1</b>	Standard Chartered Bank Ltd.	0.288	0.210	0.044	1.730	Insignificant
<b>2</b>	Nabil Bank Ltd.	0.297	0.113	0.013	1.786	Insignificant
<b>3</b>	Everest Bank Ltd.	0.031	0.946	0.896	0.188	Significant
<b>4</b>	Bank Of Kathmandu Ltd.	0.301	0.047	0.002	1.806	Insignificant
<b>5</b>	Nepal Investment Bank Ltd.	0.277	0.283	0.080	1.665	Insignificant

Source: Annex-I

The statistical table 4.6 clearly demonstrates that the degree of relationship between MVPS and DPS seems to be significant in all the banks. It reveals that there is positive correlation between MVPS and BVPS.

From the above table 4.4, it is shown that the correlation coefficient of MVPS with BVPS of SCB, NABIL, EBL, BOK and NIBL are 0.809, 0.222, 0.115, 0.771 and 0.538 respectively. This shows that increase in value of MVPS is increased by 100% due to increase in DPS by 65.4%, 4.9%, 1.3%, 59.4%, and 5.2% of SCB, NABIL, EBL, BOK and NIBL respectively.

We can see clearly that there is existed high degree of positive correlation of SCB and BOK. Moderate degree of positive correlation exists in NIBL and low degree of positive correlation is existed in case of EBL and NABIL.

The value of 'r' is greater than six times P.E. ( $r > 6P.E.$ ) in case of EBL. This means that the correlation coefficient between MVPS and BVPS is significant. In other words, there



is definitely evidence of correlation between MVPS and BVPS. The value of 'r' is lower than P.E. ( $r < P.E.$ ) in case of rest sampled banks, this means that the correlation coefficient between MVPS and BVPS is not significant. In other words, there is no evidence of correlation between MVPS and BVPS.

### 4.3 Regression Analysis

Regression analysis is the basis for this chapter because the analysis part is mostly covered by simple and multiple regression analysis. Under this analysis, influence of independent variables upon dependent variable is measured and evaluated. In other words, Simple Regression helps to establish the functional relation between dependent and an independent variable and Multiple Regression analysis helps to establish the functional relation between dependent and independent variables and provides a mechanism for estimate. The purpose of multiple regression analysis in this study is to analyze the combined effect of EPS, DPS and BVPS on MVPS of the sampled banks, further more, how the selected variables influence equity price, is also being tested using regression model. As stated earlier, multiple regression analysis is the best way to project or estimate the value of dependent variable on the basis of independent variables. This chapter presents the estimated MVPS with respect to the selected financial indicators.

#### 4.3.1. Regression Equation of MVPS on EPS

**Table 4.5**  
**Regression Equation of MVPS on EPS**  
( $MVPS = a + b \cdot EPS$ )

S. No.	Name of Banks	Regression Coefficient		R <sup>2</sup>
		Constant (a)	Slope (b)	
1	Standard Chartered Bank Ltd.	3647.639	-25.236	0.132
2	Nabil Bank Ltd.	2652.249	9.726	0.006
3	Everest Bank Ltd.	-1228.332	42.372	0.795
4	Bank Of Kathmandu Ltd.	-1569.421	63.293	0.894
5	Nepal Investment Bank Ltd.	12.893	29.459	0.325

Source: Annex-I

Table 4.7 depicts the major output of simple regression between market price and EPS of the sampled banks. Above table shows that the constant coefficient (a) of SCB, NABIL and NIBL is positive which indicates that when value of EPS is zero, market prices of stock of SCB, NABIL and NIBL would be positive with above values. But in case of EBL and BOK, the constant coefficient (a) is negative which indicates that when value of EPS is zero, MVPS would be negative with above values.

The regression coefficient (b) of all sampled commercial banks (except SCB) is positive. They indicate that there exists positive relationship between MVPS and EPS which identifies a positive indicator of the development of the commercial banking sector in our country. Whereas there is a negative relationship between given variable in case of SCB. Such a situation is not a healthy indicator for the commercial banking sector in the country.

The prediction of MVPS is strong for EBL and BOK but it is moderately depended in SCB and NIBL and very low for NABIL because the coefficients of determination ( $r^2$ ) are 0.132, 0.006, 0.795, 0.894 and 0.325 with respect to SCB, NABIL, EBL, BOK and NIBL respectively.

#### 4.3.2. Regression Equation of Market Price on DPS

**Table 4.6**

**Regression Equation of Market Price on DPS (MVPS = a + b. DPS)**

S. No.	Name of Banks	Regression Coefficient		$R^2$
		Constant (a)	Slope (b)	
1	Standard Chartered Bank Ltd.	9186.589	-45.811	0.645
2	Nabil Bank Ltd.	4911.371	-15.965	0.049
3	Everest Bank Ltd.	2351.114	-14.186	0.013
4	Bank Of Kathmandu Ltd.	2339.667	-77.918	0.594
5	Nepal Investment Bank Ltd.	2144.740	-47.642	0.289

Source: Annex-I

Table 4.8 depicts the major output of simple regression between market price and DPS. The regression constant coefficient (a) of all sample banks is positive. This indicates that when DPS is zero, the value of MVPS is positive by above values.

The regression coefficient (b) of all the sample banks is negative. This indicates that there exists negative relationship between market price and DPS. This means that when DPS increases by 100 percentage then market price decreases by this percent and vice versa which is not true in practical. Such a situation is not healthy indicator for the commercial banking sector in the country.

The prediction of MVPS is medium for the SCB and BOK because the respective coefficients of determination ( $r^2$ ) are 0.645 and 0.594 but MVPS is predicted low for rest sampled banks.

#### 4.3.3. Regression Equation of MVPS on BVPS

**Table 4.7**  
**Regression Equation of Market Price on BVPS (MVPS = a + b. BVPS)**

S. No.	Name of Banks	Regression Coefficient		R <sup>2</sup>
		Constant (a)	Slope (b)	
1	Standard Chartered Bank Ltd.	7349.441	-5.576	0.044
2	Nabil Bank Ltd.	1889.016	5.276	0.130
3	Everest Bank Ltd.	-2628.565	17.292	0.896
4	Bank Of Kathmandu Ltd.	1658.920	-1.412	0.002
5	Nepal Investment Bank Ltd.	358.713	5.503	0.080

Source: Annex-I

Table 4.9 depicts the major output of simple regression between market price and BVPS of the sampled banks. The regression constant coefficient (a) of all sample banks except

EBL is positive. This indicates that when BVPS is zero, the value of MVPS is positive with above values. But the constant coefficient (a) is negative in case of EBL which shows that when BVPS is zero, market price would be negative by above value.

The regression coefficients (b) of all sampled commercial banks are positive except SCB and BOK. They indicate that there exists positive relationship between MVPS and BVPS of NABIL, EBL NIBL but negative relationship between MVPS and BVPS in case of SCB and BOK. Positive regression coefficient (b) is good indicator for banking sector but the negative coefficient is not healthy indicator for Nepalese commercial banking sector.

The prediction of MVPS is strong for EBL. It is very low for SCB, NABIL, BOK and NIBL because the coefficients of determination ( $r^2$ ) are 0.044, 0.130, 0.896, 0.002 and 0.080 with respect to SCB, NABIL, EBL, BOK and NIBL respectively.

#### **4.4 Multiple Regression Analysis**

##### **4.4.1 Standard Chartered Bank Ltd.**

##### **MVPS on EPS, DPS, BVPS of SCBNL**

$$\text{MVPS} = 6676.41 + 42.07\text{EPS} - 65.27\text{DPS} - 4.29\text{BVPS}$$

The multiple regression equation is abstracted from Annex-II that implies that the multiple regression constant (a) is 6676.41 suggest that when the value of EPS, DPS and BVPS is zero, MVPS would be 6676.4. The constant for EPS ( $b_1$ ) is Rs.42.07 implies that when EPS increase by Re.1, MVPS increases by Rs.42.07 by keeping DPS and BVPS constant. The regression coefficient DPS ( $b_2$ ) is -65.27 which implies that increase of one rupee in DPS results decrease in MVPS by Rs.65.27 on average if other factors remain constant. The regression coefficient of BVPS ( $b_3$ ) is -4.29 which implies that an increase of one rupee in BVPS results decreases MVPS by rupees Rs.4.29 on average if other factor EPS and DPS remain constant. But estimate of a,  $b_1$ ,  $b_2$  and  $b_3$  varies by 5809.409, 144.798, 48.095, and 46.183 respectively as indicated by standard error. The analysis shows that Multiple Coefficient is 0.864 and coefficient of Multiple

Determination is 0.746 which indicates that 74.60% change in MVPS due to variation by EPS, DPS and BVPS has been explain by the regression model with 1867.16 standard error of estimate.

#### **4.4.2 Multiple Regression for Nabil Bank Limited.**

##### **MVPS on EPS, DPS, BVPS of NABIL**

$$\text{MVPS} = -30824.40 - 300.34\text{EPS} - 191.25\text{DPS} + 230.63\text{BVPS}$$

Above multiple regression equation is followed by Annex-II that implies that the multiple regression constant (a) is -30824.40 suggest that when the value of EPS, DPS and BVPS is zero, MVPS would be negative 30824.40. But this could not be practical because the value of MVPS can not go down to the zero level. The constant for EPS ( $b_1$ ) is -300.34 implies that when EPS increase by Rs.1, MVPS decreases by Rs.300.34 by keeping DPS and BVPS constant. The regression coefficient DPS ( $b_2$ ) is -191.25 which implies that increase of one rupee in DPS results decrease in MVPS by Rs.191.25 on average if other factors remain constant. The regression coefficient of BVPS ( $b_3$ ) is 230.63 which implies that an increase of one rupee in BVPS results increase in MVPS by Rs.230.63 on average if other factor EPS and DPS remain constant. But estimate of a,  $b_1$ ,  $b_2$  and  $b_3$  varies by 8070.97, 119.27, 42.25 and 60.72 respectively as indicated by standard error. The analysis shows that Multiple Coefficient is 0.977 and coefficient of Multiple Determination is 0.819 which indicates that 81.90% change in MVPS due to variation in EPS, DPS and BVPS has been explained by the regression model with 491.79 standard error of estimate.

#### **4.4.3 Multiple Regression for Everest Bank Ltd.**

##### **MVPS on EPS, DPS, BVPS of EBL**

$$\text{MVPS} = -1548.00 + 21.61\text{EPS} - 30.89\text{DPS} + 9.51\text{BVPS}$$

The Regression equation is derived from Annex-II that implies that the multiple regression constant (a) is -1548.00 suggest that when the value of EPS, DPS and BVPS is

zero, MVPS would be negative 1548. The constant for EPS ( $b_1$ ) is 21.61 implies that when EPS increase by Rs.1, MVPS increases by Rs.21.61 by keeping DPS and BVPS constant. The regression coefficient DPS ( $b_2$ ) is -30.89 which implies that increase of one rupee in DPS results decrease in MVPS by Rs.30.89 on average if other factors remain constant. The regression coefficient of BVPS ( $b_3$ ) is 9.51 which implies that an increase of one rupee in BVPS increases MVPS by rupees Rs.9.51 on average if other factor EPS and DPS remain constant. But estimate of a,  $b_1$ ,  $b_2$  and  $b_3$  varies by 2701.03, 68.35, 49.78, and 25.46 respectively as indicated by standard error. The analysis shows that Multiple Coefficient is 0.963 and coefficient of Multiple Determination is 0.927 which indicates that 92.70% change in MVPS due to variation by EPS, DPS and BVPS has been explain by the regression model with 491.79 standard error of estimate.

#### **4.4.4 Multiple Regression for Bank of Kathmandu**

##### **MVPS on EPS, DPS, BVPS of BOK**

$$\text{MVPS} = 1284.02 + 49.27\text{EPS} - 33.81\text{DPS} - 8.58\text{BVPS}$$

The equation is derived from Annex-II that implies that the multiple regression constant (a) is 1284.02 suggest that when the value of EPS, DPS and BVPS is zero, MVPS would be 1284.02. The constant for EPS ( $b_1$ ) is 0.49.27 implies that when EPS increase by Rs.1, MVPS increases by Rs.49.27 by keeping DPS and BVPS constant. The regression coefficient DPS ( $b_2$ ) is -33.81 which implies that increase of one rupee in DPS results decrease in MVPS by Rs.33.81 on average if other factors remain constant. The regression coefficient of BVPS ( $b_3$ ) is -8.58 which implies that an increase of one rupee in BVPS results decrease in MVPS by rupees Rs.8.58 on average if other factor EPS and DPS remain constant. But estimate of a,  $b_1$ ,  $b_2$  and  $b_3$  varies by 1279.999, 11.54, 19.40 and 3.82 respectively as indicated by standard error. The analysis shows that Multiple Coefficient is 0.994 and coefficient of Multiple Determination is 0.988 which indicates that 98.80% change in MVPS due to variation by EPS, DPS and BVPS has been explained by the regression model with 167.61 standard error of estimate.

#### **4.4.5 Multiple Regression for Nepal Investment Bank Ltd.**

##### **MVPS on EPS, DPS, BVPS of SCBNL**

$$\text{MVPS} = 3097.74 + 83.56\text{EPS} - 29.37\text{DPS} - 25.85\text{BVPS}$$

The Regression equation is derived from Annex-II that implies that the multiple regression constant (a) is 3097.74 suggest that when the value of EPS, DPS and BVPS is zero, MVPS would be Rs.3097.74. The constant for EPS ( $b_1$ ) is 83.56 implies that when EPS increase by Rs.1, MVPS increases by Rs.83.56 by keeping DPS and BVPS constant. The regression coefficient DPS ( $b_2$ ) is -29.37 which implies that increase of one rupee in DPS results decrease in MVPS by Rs.29.37 on average if other factors remain constant. The regression coefficient of BVPS ( $b_3$ ) is -25.85 which implies that an increase of one rupee in BVPS results decrease in MVPS by Rs.25.85 on average if other factor EPS and DPS remain constant. But estimate of a,  $b_1$ ,  $b_2$  and  $b_3$  varies by 2951.82, 66.82, 53.37 and 24.394 respectively as indicated by standard error. The analysis shows that Multiple Correlation Coefficient is 0.851 and coefficient of Multiple Determination is 0.725 which indicates that 72.50% change in MVPS due to variation by EPS, DPS and BVPS has been explain by the regression model with 646.22 standard error of estimate.

#### **4.5. Price Situations of the Stock of Listed Sampled Commercial Banks**

Under this topic, we examine the pricing status of common stock i.e. whether common stocks are overpriced or under priced or equilibrium priced. The pricing status of stocks of particular firm is evaluated by comparing the require rate of return with actual realized rate of return. This chapter presents calculations of actual rate or return that a particular security has provided during the study period and its corresponding required rate of return. Comparison between the actual realized rate of return and required rate of return gives the way which classification of stocks whether overpriced or under priced is possible, to analyze the stock market sensitivity, beta coefficient has been used in this study since beta is considered as a measure of undiversified risk. The greater the beta of a security, greater will be the risk and the greater the expected return required. Like wise, the lower the beta, lower will be the risk. This means that the stocks become the more valuable and lower will be the expected return required. The beta coefficient, risk

premiums and required rate of return on the stocks of sampled commercial banks have been summarized in table 4.10 required calculations have been shown in Annex-II.

**Table 4.8**

**Price Situation of Common Stock of Listed Sampled Commercial Banks**

<b>Name of Banks</b>	<b>Beta coefficient ( )</b>	<b>R<sub>f</sub></b>	<b>R<sub>m</sub></b>	<b>Risk Premium</b>	<b>Required rate of return</b>	<b>Average rate of return</b>	<b>Status of the stock</b>
SCB	0.69	9.2077	31.89	22.68	24.83	34.41	U.P.
NABIL	1.24				37.27	48.21	U.P.
EBL	0.98				31.43	35.65	U.P.
BOK	0.97				31.14	53.17	U.P.
NIBL	0.91				29.85	16.71	O.P.

Source: Annex-III

From table 4.10 it has been observed that the overall average market return is 27.86%. The Treasury bill rate in 364 days is 9.2077%. The risk premium for the stocks of all the commercial bank in the market is the difference between risk free rate and market rate of return i.e. 31.89%.

In the commercial banking sector, actual rate of return of SCB, NABIL, EBL, BOK and NIBL are 34.41%, 48.21%, 35.65% 53.17% and 16.71% respectively where as required rate of return during the study period are 24.83%, 37.27%, 31.43%, 31.14% and 29.85% respectively.

Comparing actual rate of return with required rate of return during the study period, required rate of return of SCB, NABIL, EBL and BOK are below than actual rate of return. It shows that the stock price of these banks are under priced or undervalued. Where as the required rate of return of NIBL is greater than the actual rate of return. It shows that the stock price of NIBL is overpriced.

Beta coefficient of SCB, NABIL, EBL, BOK and NIBL are 0.69, 1.24, 0.98, 0.97 and 0.91 respectively. Beta coefficient of SCB, EBL, BOK and NIBL are less than 1 which



suggests that stocks of these banks are defensive. Since, the beta coefficient of these banks are less than 1, it is considered that its risk adjustment factor is less than the risk adjustment factor for the market. But the beta coefficient of NABIL is 1.24 which is greater than 1 which suggests that stock of NABIL is aggressive. Since, the beta coefficient is greater than 1; it is considered that its risk adjustment factor is more than the risk adjustment factor for market.

#### 4.6 The Impacts of Signaling Factors

Nepalese Stock Market is not perfect. It was seen that there was lack of the knowledge or awareness in investors, lack of the proper rules and regulations and government policies and manipulated activity of broker in stable politics has directly affected the stock market. Sometimes, national and international signaling factors may be the price determining factors of Nepalese Security market.

For seeing signaling effect pure hypothesis tools paired t-test is done for the data for analyzing the impact of signaling factors on NEPSE index with reference to selected four major events of that time with the help of NEPSE Index before and after the events are analyzed with the help of paired t-test with the help of following working formula t-statistic is calculated and interpreted as follows;

$$t = \frac{\bar{d}\sqrt{n}}{S_d} \quad S_d = \sqrt{\frac{1}{n} \sum_{i=1}^n d_i^2 - \frac{(\sum_{i=1}^n d_i)^2}{n}}$$

Where; t = paired t-test

$S_d$  = Standard error/deviation

n = no. of observation

d = difference between two data

For analyzing the impact of signaling factors on commercial banking index with reference to selected two major events of this period.

1. Constitution Assembly Election (10 April, 2008)

## 2. First Deadline of Constitution Assembly (28 May, 2010)

Hypothesis between major event of the country and commercial banking index are made to find out the result for the purpose, null hypothesis and alternative hypothesis is the base of the study.

### **Null Hypothesis: $H_0$ :**

1. There is no significant difference in banking index before and after constitution assembly election.
2. There is no significant difference in banking index before and after the first deadline of constitution assembly.

### **Alternative Hypothesis: $H_1$**

1. There is significant difference in banking index before and after constitution assembly election.
2. There is significant difference in banking index before and after the first deadline of constitution assembly.

**Table 4.9**  
**Impact of Signaling Factors**

<b>Events</b>	<b>Tabulated values at 9 d.f. and 5% level of significance</b>	<b>Calculated value</b>	<b>Remarks</b>
Constitution Assembly Election	1.833	0.792	Null hypothesis accepted
First Deadline of Constitution Assembly	1.833	5.160	Alternative hypothesis accepted

Source: Annex-IV

From above table 4.11, it is cleared that paired t test tabulated value of t-test at 9 degree of freedom at 5% level of significant is 1.88 where as the calculated values are different according to the events happened during different period. If the calculated value of t-test is lower than tabulated value, in such situation alternative hypothesis is accepted. If calculated t-value is higher than tabulated value, null hypothesis is accepted. So it is explained that signaling factor affects the stock price or not.

After the constitution assembly Election dated on 10<sup>th</sup> April, 2008, it brought hopeful investment environment in Nepalese economy. That election will bring good constitution to the country. All the investor had not positive attitude toward the new making constitution because they were in confusion that the new constitution will be made or not and will provide good investment environment or not for them. So it leads stock market and banking index fluctuates. It was also verified by paired t-test that the null hypothesis is accepted; this means there is no significant difference between commercial banking index before and after the Constitution Assembly Election.

Before the First Deadline of Constitutional Assembly (28<sup>th</sup> May, 2010), it was not sure to add the time for constitutional assembly. In that situation it was not suitable time for investors. But when the constitutional assembly took legality after its deadline, all the investors had positive attitude toward the new political environment which indicated good environment for them. So it leads stock market positively and index rose. It was also verified by paired t-test that the alternative hypothesis was accepted; this means that there is significant difference between commercial banking index before and after the Deadline of Constitutional Assembly.

#### **4.7 Empirical Finding of Study**

In this study, secondary data are analyzed. The researcher with the help of secondary data, the relationship of market price per share with dividend, earning as well as book value per share were determined. Here the empirical findings from secondary data analysis are presented separately below;

- ) According to correlation coefficient analysis, relationship between MVPS and other selected financial indicator of all sampled banks are positive. Hence positive correlation coefficient shows that the movement of MVPS and selected financial indicators is similar. That is positive fluctuation shall bring positive change in MVPS.
- ) The regression coefficient (b) of all sampled banks except SCB exist positive relationship between market price and EPS. It shows that MVPS and EPS are positively correlated which is healthy indicator of the development of the commercial banking sector in the country. But regression coefficient (b) of SCB shows negative relationship between market price and EPS. Such a situation is not a healthy indicator for the commercial banking sector in the country.
- ) Regression coefficient (b) of all sampled banks exist negative relationship between MVPS and DPS which indicates inverse relationship between market price and DPS. Such a situation is not healthy indicator for the commercial banking sector in the country.
- ) Regression coefficient (b) for MVPS on BVPS of most of sample banks is positive. They indicate that there exists positive relationship between MVPS and BVPS. But in case of SCB and BOK, the value of 'b' is negative which shows that there is inverse relationship between market price and book value per share. Negative relationship between market price and BVPS is not a healthy indicator for the commercial banking sector in the country. But positive relationship between market price and BVPS shows a healthy indicator of the development of the commercial banking sector in our country.
- ) From multiple regression analysis, market price of all sampled banks is determined by three financial indicators. There are positive significance relationship between MVPS and financial indicators.
- ) Stock Price situation analysis of sampled banks has shown that SCB, NABIL, EBL and BOK were under priced during the study period because actual returns were higher than required rate of return. But NIBL is overpriced during the study period because actual rate of returns were less than required rate of return. 364 days Treasury bill (T-bill) rate is considered as the risk free rate of return.
- ) Beta coefficients are calculated to assign required return. These beta coefficients

show the nature or behavior of stocks whether individual stock is aggressive or defensives. The stock of SCB, EBL, BOK and NIBL are defensive because their beta coefficients are less than 1 where as stock of NABIL are aggressive because its beta coefficient is greater than 1. Defensive stocks indicate that they are less volatile in comparison to market were as aggressive stock are more volatile than that of market return.

- ) In the event of constitution assembly election and deadline of constitution assembly, banking index should increase but the paired t-test showed that the null hypothesis is accepted for the event 'constitution assembly election' and null hypothesis is rejected for First deadline of constitution assembly at 9 degree of freedom as 5 percent level of significance. The figures suggest that the event first deadline of constitution assembly affect the share price or index in this sector.
- ) Finally it can be concluded that financial indicators and signaling factors played vital role in determining share price or NEPSE index value.

## CHAPTER – V

### SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter deals with the summary of the study, conclusion and recommendation based on the major finding of the study. All these are presented separately after summarizing and concluding the research work, recommendations are made to concerned persons and organization on the basis of major finding of the research.

#### 5.1 Summary

The smooth continuity of the economic development widely depends upon the adequate and steady of medium as well as long term capital fund for productive investment. Capital plays highly significant role for future growth and prosperity of the organization.

Industrialization and economy prosperity of a nation heavily depend upon effective mobilization of saving. Stock markets are the corner stone for the mobilization of people's saving, equity or common stock in Nepalese commercial banks the largest category of security listed with the Nepal Stock Exchange (NEPSE) and commercial banks have to play enormous role with respect to the capital formation and its effective development of the country.

Securities market price refers to the buying and selling price of the stock, bond, share and debt. The development of the modern day economy, the history of securities market began with floatation of share by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd in 1973. 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 were other significant development relating to capital markets.

Securities Exchange Centre was established with an objective of facilitating and promoting the growth of capital markets. Before conversion into Stock Exchange in 1993, Nepal Stock Exchange (NEPSE) is a non-profit organization operating under

Security Exchange Act. 1983. The basis objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transaction in its trading floor through member, market intermediaries, such as broker, market makers etc. NEPSE opened its trading floor on 13<sup>th</sup> January 1994. Automated trading system started with the completion of trading floor automation of NEPSE.

The regulatory and controlling body of security market, the Security Board Nepal was established on May 26, 1993 with the basic objective of the promoting and protecting the interest of investors by regulating securities market. Currently SEBON is operating under Security Act 2006.

Nepalese Capital Market is still in primary stage, average citizens and investors have not proper ideas about the capital market, share book value, par value, market price, pricing mechanism and the factors affecting the market price of share. They are willing to invest but are not able to do so due to the lack of knowledge in this subject. In spite of poor condition of the security market in Nepal, government of Nepal has not given priority in its three years interim plan, government has not been able to create basic infrastructures, sound policies and laws and their effective implementation, for the capital market development. As a result, there is not transparency in the performance of the listed companies and the capital market due to which capital is struggling to mature.

Market price of the stock moves daily in the NEPSE. The securities market is essential; cause of price change may be signaling effect, low return and high risk, lack of knowledge, low income of the investors and high price of the stock. Price of the stock is determined by the demand and supply, this situation is in security market or not. These are burning issues regarding stock price determining of secondary market in Nepal.

The researcher has tired to explore the factors affecting share price in Nepalese commercial banks. The main objectives of this research was to measure the relationship of financial indicators (EPS, DPS & BVPS) with the market value per share (MVPS) and to examine and study impact of signaling factors on commercial banking index and share price.

Second chapter based on the Literature survey on the area of the study on which conceptual review and review of related studies.

Due to many limitation or restriction researcher have taken five commercial banks as the sample. As per the nature of the study, secondary data is followed with analytical and descriptive way. The study is based on secondary data from the fiscal year 2004/05 to 2008/09. Secondary data were collected from annual report of NEPSE, SEBO-N, NRB and annual reports of concerned banks. Information is tabulated as per requirement of the study for the fulfillment of the objectives of the study. Both financial as well as statistical tools have been used to analyze and interpret the facts and information. Mainly, the researcher identified the effect of quantitative factors, EPS, DPS and BVPS with MVPS by correlation and regression analysis of secondary data.

Analysis of financial indicator has shown that Nepalese commercial banks still is not good financial performance. EPS, DPS, and BVPS are not much more stable. But potential investors are highly attracted in commercial banking sector.

To analysis the signaling effect researcher set the hypothesis and used the pair t-test.

Stock market is backbone to development for the nation. The corporate environment plays vital roles on improving the capital market of the nation. People invested in companies through primary market they represent their fractional ownership through their investment proportions. Investment in common stock of a corporate firm neither ensures an annual return nor ensures the return of principal. Therefore investment in common stock is very sensitive on the ground of risk. Prices of common stock especially commercial banking sectors are affecting by different factors. In general demand and supply set the prices of common stocks are influenced by various factors. One of the major factors is corporate performance. Adequate knowledge and information regarding the capital market is lacking in Nepalese investor. Some environment changes bring unpredictable issues in the stock market. This is precisely the reason the Nepal Stock Exchange shows rather irrational behavior. Most of the listed commercial banks do not



provide sufficient and timely information to NEPSE as well as their shareholders. And supplied information does not have consistent in provided area. It means that they try to attract information regarding their performance.

## **5.2 Conclusion**

The correlation coefficient analysis relationship between MVPS and financial indicators EPS and BVPS of all sampled banks are positives. That can be conducted if independent variables (EPS, DPS and BVPS) increase than it cause to increases dependent variable (MVPS) by 100% in case of positive correlations. Such an increasing value of MVPS with EPS, DPS and BVPS is healthy indicator of the financial activities of companies in the least development countries like Nepal. It can be concluded that commercial banking sectors have good financial environment in Nepal.

The regression coefficient (b) all sampled banks that these exist positive relationship between MVPS and selected financial indicators except DPS of all sampled banks with market is significantly negatively relationship. The majority of indicators have positive relationship with the market price in all sampled banks. In case of slope if one variable increases than other variable increases where as positive relationship is existed and vice verse. Most of banks' financial indicators are resulted as healthy indicators for the entire sector in the country. Positive regression coefficient can be recognized as positive indicators of the development of the entire sector in the country. The mix result getting from Regression Analysis, some banks have positive relationship with indicators and some have negative relationship.

Pricing status analysis; most of sample banks' prices were under priced during the study period because actual returns were remarkably higher than the required return. But the stock of NIBL is over priced. From the price status, investor can take investment decision about individual stock should purchase or sell in the market. Investor can sell the over price stock and purchase the under price stock in short period of time.

If stocks are under priced, their demand in stock market heavily mounts up. Insufficient supply of stocks caused price to rise. At present, this situation is prevailing in Nepalese stock market due to which equity price of commercial banking sector has appropriated to maximum point without having any concrete financial reason.

Thought, beta coefficients are calculated to assign required return, these coefficients tell the nature or behavior of stock whether individual stocks are aggressive or defensive. The stock of SCB, EBL, BOK and NIBL are defensive because their beta coefficients are less than one where as stock of NABIL is aggressive because its beta coefficient is greater than one. Defensive stock indicates that they are less volatile in comparison to market where as aggressive stock are more volatile than that of market return.

Beta coefficient is a measurement of systematic risk, which is defined by market. Beta shows mixed result, some of the banks are sensitive to the market where as other are not sensitive to the market. Hence, it can be concluded that the overall market is sensitive which proved that market can be affected by any external change in the economy.

The study concludes that signaling factors play major role for determining share price and banking index value in some events.

Even though current political situation in Nepal is not stable, investors hope brings good investment environment in Nepalese commercial banks. Most of the investors take decision investment in stock of commercial banks on the basis of current market prices and bank performance.

Adequate knowledge and information regarding the securities market lacking in Nepalese investors. Small group of aware investors are only getting high level of return from investment but irrational investors suffering the loss cheated by concerned companies. The professional investors are lacking in Nepalese stock market.

Due to poor rules and regulation as well as ineffective regularity mechanism, the Nepalese securities market is difficult to develop so the shareholders are not confident

enough to invest in the share. After this change happened in our country, we hope better development in entire sectors.

In spite of the several constrains, the NEPSE has been growing gradually. Commercial banking group has covered highly in market capitalization, no of share trade and turnover in NEPSE. So, the commercial banking sector is the best performer among the other groups listed in NEPSE.

Thus, it can be concluded that three financial indicators EPS, DPS & BVPS heavily determine the common stock price. Other extra factors also caused equity price to fluctuate. Investors must look after all factors, which explicitly or implicitly affect common stock price so that they can arrive at rational decision.

### **5.3. Recommendations**

Based on the research work, the researcher has reached the following recommendations. Perfect market requires that all information concerning future risks and return of securities be readily available to all investors. As there exist various market imperfection relevant information are not easily available to the investors. They are often published in national dailies, but most of the information is highly aggregated and not reliable. Because of the lack of technical knowledge, majority of the investors is unable to analyze the available information. As such a single buyer and a single seller can affect the price of securities. NEPSE has to ensure listed companies relevant information. Similarly can expand its service to regional and local level so that it gives the equal opportunity to all the potential investors after adopting automatic trading system, it should provide regarding information to investors. Investors should be provided with investment guidelines and relevant information through. It should monitor the activities of broker as well as listed companies.

- Every investor should read the monthly journal as well as daily newspaper. It provides extensive statistical data, financial news and event a bit of rumor.

- They should always be aware of the daily stock price and volume trader figure of stock price record published by NEPSE.
- Investors are suggested to raise their voice and complain about the misconduct of relevant company or NEPSE, SEBO-N as well as of government. They have to encourage enriching their level of knowledge and making the investment opportunities fruitful.
- Investors should be alert to exploit the opportunities through short term speculation.
- Signaling factors play major role for making investment decisions, so investors should analyzed impact of signaling factors before making investment decision.
- Commercial banks should diversify their investment in difference productive sectors.
- Banks should hire financial experts.
- The commercial banks group should comminute timely real financial statement and non financial information to the concern group.
- Government should provide better environment to develop Nepalese securities market.
- SEBON should control leak out the inside information from companies.
- Nepal stock exchange should analyze the controversial factors which determine the share price.
- NEPSE index should play a major role for creating investment opportunities. So for removing stock markets difficulties such as transaction facilities, investor's protection policies etc.
- It is recommended that SEBON should operate investors' awareness program regarding stock market and share investment decision.
- It is recommended also that SEBON should operate investors' awareness program regarding stock market and share investment decision.
- The security board of Nepal is an apex body for monitoring and regulating the Nepal stock exchange regularly regimes up to international standard.
- As per the study, it has been found out that EPS, DPS, BVPS and price appreciation are the foundation upon which equity price built. So investors are

recommended for the details study of the financial indicators before investing and trading stock of any banks.

- Research is an ongoing process. Study of security is as vast field sector. Through this research, it has tried to explore the future researcher can even carry out research based on primary survey. This study might not cover all sectors due to time constraints and other related factors. Therefore searchers are advice to cover up role of economic factors, role of internal and external environment of the listed companies toward the stock market in their research.

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## APPENDIX

### ANNEX – I

#### Summary of Simple Correlation and Regression Analysis

##### Standard Chartered Bank Ltd

Relationship	Correlation coefficient (r)	Coefficient of Determination ( $r^2$ )	Standard Error of Estimate	MPS intercept (a)	Variable intercept (b)
MVPS on EPS	0.364	0.132	1992.48	8647.639	-25.24
MVPS on DPS	0.809	0.654	1855.387	9186.589	-45.811
MVPS on BVPS	0.210	0.044	6451.435	7349.441	-5.576

##### Nabil Bank Ltd

Relationship	Correlation coefficient (r)	Coefficient of Determination ( $r^2$ )	Standard Error of Estimate	MPS intercept (a)	Variable intercept (b)
MVPS on EPS	0.080	0.006	8220.66	2652.25	9.726
MVPS on DPS	0.222	0.049	2969.182	4911.371	-15.965
MVPS on BVPS	0.113	0.013	9671.136	1889.016	5.276

##### Everest Bank Ltd

Relationship	Correlation coefficient (r)	Coefficient of Determination ( $r^2$ )	Standard Error of Estimate	MPS intercept (a)	Variable intercept (b)
MVPS on EPS	0.891	0.795	476.775	-1228	42.372
MVPS on DPS	0.115	0.013	1551.915	2351.114	-14.186
MVPS on BVPS	0.946	0.896	935.066	-2628.565	17.292



### Bank of Kathmandu Ltd

Relationship	Correlation coefficient (r)	Coefficient of Determination ( $r^2$ )	Standard Error of Estimate	MPS intercept (a)	Variable intercept (b)
MVPS on EPS	0.959	0.894	510.007	-1569.421	63.293
MVPS on DPS	0.771	0.458	528.297	2339.667	-77.918
MVPS on BVPS	0.047	0.002	3582.823	1658.920	-1.412

### Nepal Investment Bank Ltd

Relationship	Correlation coefficient (r)	Coefficient of Determination ( $r^2$ )	Standard Error of Estimate	MPS intercept (a)	Variable intercept (b)
MVPS on EPS	0.570	0.325	1284.088	12.893	29.459
MVPS on DPS	0.538	0.289	621.477	2144.74	-47.642
MVPS on BVPS	0.283	0.080	2299.407	358.713	5.503

### Annex-II

#### Summary of Multiple Regression Analysis

Name of Bank	Correlation coefficient	Coefficient of determination	Standard Error of Estimate	MPS intercept (a)	EPS intercept ( $b_1$ )	DPS intercept ( $b_2$ )	BVPS intercept ( $b_3$ )
SCB	0.864	0.746	1867.164	6676.412	42.070	-65.271	-4.285
NABIL	0.977	0.955	756.26	-30824.395	-300.343	-191.252	230.629
EBL	0.963	0.927	491.792	-1548.004	21.613	-30.888	9.514
BOK	0.994	0.988	167.609	1284.017	49.270	-33.806	-8.583
NIBL	0.851	0.724	646.222	3097.744	83.559	-29.371	-25.852

### ANNEX-III

#### Calculation of Market rate of Return

Fiscal Year	NEPSE Index	Annual Return( $R_m$ )	[ $R_m - \bar{R}_m$ ]	[ $R_m - \bar{R}_m$ ] <sup>2</sup>
2003/04	222.04			
2004/05	286.67	29.11	-2.79	7.76
2005/06	386.83	34.94	3.05	9.28
2006/07	683.95	76.81	44.92	2017.41
207/08	963.36	40.85	8.96	80.26
2008/09	749.10	-22.24	-54.13	2930.52
<b>Total</b>		$R_m = 159.47$		$[R_m - \bar{R}_m]^2 = 5045.23$

$$\text{Annual Return } \bar{R}_m = \frac{NI_{t+1} - NI_t}{NI_t}$$

Where;  $NI_{t+1}$  = NEPSE Index at year t+1

$NI_t$  = NEPSE Index at year t

$$\text{Average Market Rate of Return } \bar{R}_m = \frac{R_m}{N} = \frac{159.47}{5} = 31.89\%$$

$$\begin{aligned} \text{Variance of Market Return ( } \sigma^2 \text{)} &= \frac{(R_m - \bar{R}_m)^2}{N} \\ &= \frac{5045.23}{5} \\ &= 1261.31\% \end{aligned}$$

## Calculation of Actual Rate of Return and Required Rate of Return

### Standard Bank Ltd

Fiscal Year	Closing Price	Cash Dividend	Annual Return( $R_j$ )	( $R_j - \bar{R}_j$ )	( $R_m - \bar{R}_m$ )	( $R_m - \bar{R}_m$ )( $R_j - \bar{R}_j$ )
2003/04	1745	110				
2004/05	2345	120	41.26	6.85	-2.79	-19.12
2005/06	3775	130	66.52	32.12	3.05	97.95
2006/07	5900	80	58.41	24.00	44.92	1078.19
2007/08	6830	80	17.12	-17.29	8.96	-154.91
2008/09	6010	50	-11.27	-45.68	-54.13	2472.76
			$R_j = 172.04$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j) = 3474.88$		

$$\text{Average Rate of Return } \bar{R}_j = \frac{R_j}{N} = \frac{172.04}{5} = 34.41\%$$

$$\text{Covariance, Cov}(R_m, R_j) = \frac{(R_m - \bar{R}_m)(R_j - \bar{R}_j)}{N - 1} = \frac{3474.88}{5 - 1} = 868.72\%$$

$$\text{Beta Coefficient } (\beta) = \frac{\text{Cov}(R_m, R_j)}{\text{Var}(R_m)} = \frac{868.72}{1261.31} = 0.69$$

$$\begin{aligned} \text{Required Rate of Return } (R) &= R_f + \beta(R_m - R_f) = 9.2077 + (31.89 - 9.2077) 0.69 \\ &= 24.83\% \end{aligned}$$

## Calculation of Actual Rate of Return and Required Rate of Return

### Nabil Bank Ltd

Fiscal Year	Closing Price	Cash Dividend	Annual Return( $R_j$ )	( $R_j - \bar{R}_j$ )	( $R_m - \bar{R}_m$ )	( $R_m - \bar{R}_m$ )( $R_j - \bar{R}_j$ )
2003/04	1000	65				
2004/05	1505	70	57.50	9.29	-2.79	-25.91
2005/06	2240	85	54.49	6.27	3.05	19.12
2006/07	5050	100	129.91	81.70	44.92	3669.77
2007/08	5275	60	5.64	-42.57	8.96	-381.44

2008/09	4899	35	-6.46	-54.68	-54.13	2959.80
Total			241.07			6241.35

$$\text{Average Rate of Return } \bar{R}_j = \frac{R_j}{N} = \frac{241.07}{5} = 48.21\%$$

$$\text{Covariance, Cov } (R_m, R_j) = \frac{(R_m - \bar{R}_m)(R_j - \bar{R}_j)}{N - 1} = \frac{62.41.35}{5 - 1} = 1560.34\%$$

$$\text{Beta Coefficient } (\beta) = \frac{\text{Cov}(R_m, R_j)}{\text{Var}(R_m)} = \frac{1560.34}{1261.31} = 1.24$$

$$\begin{aligned} \text{Required Rate of Return } (R) &= R_f + \beta(R_m - R_f) \\ &= 9.2077 + (31.89 - 9.2077)1.24 \\ &= 37.27\% \end{aligned}$$

### Calculation of Actual Rate of Return and Required Rate of Return

#### Everest Bank Ltd

Fiscal Year	Closing Price	Cash Dividend	Annual Return( $R_j$ )	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_m - \bar{R}_m)(R_j - \bar{R}_j)$
2003/04	680	20				
2004/05	870	20	30.88	-4.77	-2.79	13.30
2005/06	1379	25	61.38	25.73	3.05	78.47
2006/07	2430	10	76.94	41.29	44.92	1854.69
2007/08	3132	20	29.71	-5.94	8.96	-53.22
2008/09	2455	30	-20.66	-56.31	-54.13	3048.00
Total			178.26			4941.25

$$\text{Average Rate of Return } \bar{R}_j = \frac{R_j}{N} = \frac{178.26}{5} = 35.65\%$$

$$\text{Covariance, Cov (R}_m, R_j) = \frac{(\sum R_m - \bar{R}_m)(\sum R_j - \bar{R}_j)}{N - 1} = \frac{4941.25}{5 - 1} = 1235.31\%$$

$$\text{Beta Coefficient ( } \beta) = \frac{\text{Cov}(R_m, R_j)}{\text{Var}(R_m)} = \frac{1235.31}{1261.31} = 0.98$$

$$\text{Required Rate of Return (R)} = R_f + \beta (\bar{R}_m - R_f) = 9.2077 + (31.89 - 9.2077)0.98 = 31.43\%$$

### Calculation of Actual Rate of Return and Required Rate of Return

#### Bank of Kathmandu Ltd

Fiscal Year	Closing Price	Cash Dividend	Annual Return(R <sub>j</sub> )	(R <sub>j</sub> - $\bar{R}_j$ )	( $\bar{R}_m - \bar{R}_m$ )	( $\bar{R}_m - \bar{R}_m$ )(R <sub>j</sub> - $\bar{R}_j$ )
2003/04	295	10				
2004/05	430	15	50.85	-2.32	-2.79	6.49
2005/06	850	18	101.86	48.69	3.05	148.50
2006/07	1375	20	64.12	10.95	44.92	491.67
2007/08	2350	2.11	71.06	17.89	8.96	160.30
2008/09	1825	7.37	-22.03	-75.20	-54.13	4070.53
Total			265.86			4877.47

$$\text{Average Rate of Return } \bar{R}_j = \frac{\sum R_j}{N} = \frac{265.86}{5} = 53.17\%$$

$$\text{Covariance, Cov (R}_m, R_j) = \frac{(\sum R_m - \bar{R}_m)(\sum R_j - \bar{R}_j)}{N - 1} = \frac{4877.47}{5 - 1} = 1219.37\%$$

$$\text{Beta Coefficient ( } \beta) = \frac{\text{Cov}(R_m, R_j)}{\text{Var}(R_m)} = \frac{1235.31}{1261.31} = 0.97$$

$$\begin{aligned} \text{Required Rate of Return (R)} &= R_f + \beta (\bar{R}_m - R_f) \\ &= 9.2077 + (31.89 - 9.2077)0.97 \end{aligned}$$

= 31.14%

### Calculation of Actual Rate of Return and Required Rate of Return

#### Nepal Investment Bank Ltd

Fiscal Year	Closing Price	Cash Dividend	Annual Return(R <sub>j</sub> )	(R <sub>j</sub> - $\bar{R}_j$ )	(R <sub>m</sub> - $\bar{R}_m$ )	(R <sub>m</sub> - $\bar{R}_m$ )(R <sub>j</sub> - $\bar{R}_j$ )
2003/04	940	15				
2004/05	800	12.5	-13.56	-30.30	-2.79	84.52
2005/06	1260	20	60.00	43.27	3.05	131.97
2006/07	1729	5	37.62	20.89	44.92	938.26
2007/08	2450	7.5	42.13	25.40	8.96	227.61
2008/09	1388	20	-42.53	-59.26	-54.13	3207.87
Total			83.66			4590.23

$$\text{Average Rate of Return } \bar{R}_j = \frac{\sum R_j}{N} = \frac{83.66}{5} = 16.73\%$$

$$\text{Covariance, Cov (R}_m, R_j) = \frac{(\sum (R_m - \bar{R}_m)(R_j - \bar{R}_j))}{N - 1} = \frac{4590.23}{5 - 1} = 1147.56\%$$

$$\text{Beta Coefficient ( } \beta) = \frac{\text{Cov}(R_m, R_j)}{\text{Var}(R_m)} = \frac{1147.56}{1261.31} = 0.91$$

$$\begin{aligned} \text{Required Rate of Return (R)} &= R_f + \beta (R_m - R_f) \\ &= 9.2077 + (31.89 - 9.2077)0.91 \\ &= 29.85\% \end{aligned}$$

## ANNEX – IV

### Paired t-test

#### Constitutional Assembly Election (On 10<sup>th</sup> April, 2008)

Date	Before the event (X)	Date	After the event (Y)	d=Y-X	d- $\bar{d}$	(d- $\bar{d}$ ) <sup>2</sup>
June 30, 2007	730.46	April 30, 2008	732.21	1.75	-19.97	398.88
July 31, 2007	759.67	May 31, 2008	834.76	75.09	53.37	2848.14
August 30 2007	824.91	June 30, 2008	960.78	135.87	114.15	13029.77
September 29 2007	995.52	July 31, 2008	1081.05	85.53	63.81	4071.46
October 30, 2007	951.46	August 29, 2008	1079.38	127.92	106.20	11278.02
November 28, 2007	952.23	September 30, 2008	1019.15	66.92	45.20	2042.86
December 31, 2007	979.70	October 27, 2008	899.06	-80.64	-102.36	10477.98
January 31, 2008	785.90	November 30, 2008	745.06	-40.84	-62.56	3914.00
February 30, 2008	739.29	December 31, 2008	657.93	-81.36	-103.08	10625.90
March 29, 2008	690.48	January 31, 2009	617.46	-73.02	-94.74	8976.05
	Total			217.22		67663.05

$$\text{Mean of the Difference } \bar{d} = \frac{\sum d}{n} = \frac{217.22}{10} = 21.72$$

$$\begin{aligned} \text{Standard Deviation of the Difference } s_d &= \sqrt{\frac{1}{n} \sum (d - \bar{d})^2} \\ &= \sqrt{\frac{1}{10} \times 67663.05} \\ &= 86.71 \end{aligned}$$

$$\text{Calculated t-value} = \frac{\bar{d}\sqrt{n}}{S_d} = \frac{21.72\sqrt{10}}{86.71} = 0.792$$

**First Deadline of Constitutional Assembly (on 28<sup>th</sup> May, 2010)**

Date	Before 28 <sup>th</sup> May 2010 (X)	Date	After 28 <sup>th</sup> May 2010 (Y)	Difference (d) = X-Y	$\sum d$	$\sum d^2$
30-May-2010	427.43	13-May-2010	493.81	66.38	32.39	1049.30
31-May-2010	407.53	16-May-2010	468.56	61.03	27.04	731.41
1-Jun-2010	407.19	17-May-2010	459.94	52.76	18.77	352.38
2-Jun-2010	418.34	18-May-2010	454.55	36.21	2.22	4.95
3-Jun-2010	425.81	19-May-2010	463.89	38.08	4.10	16.80
6-Jun-2010	432.50	20-May-2010	455.03	22.53	-11.46	131.30
7-Jun-2010	433.11	23-May-2010	455.34	22.23	-11.75	138.14
8-Jun-2010	437.05	24-May-2010	462.98	25.93	-8.06	64.91
9-Jun-2010	461.92	25-May-2010	468.92	6.99	-26.99	728.47
10-Jun-2010	458.15	26-May-2010	465.86	7.71	-26.27	690.28
	total			339.85		3907.94

$$\text{Mean of the Difference } \bar{d} = \frac{\sum d}{n} = \frac{339.85}{10} = 33.98$$

$$\text{Standard Deviation of the Difference } S_d = \sqrt{\frac{1}{n} \sum d^2}$$

$$= \sqrt{\frac{1}{10} \times 3907.94}$$

$$= 20.84$$



$$\text{Calculated t-value} = \frac{\bar{d}\sqrt{n}}{S_d} = \frac{33.98\sqrt{10}}{20.94} = 5.16$$