

CHAPTER - I

INTRODUCTION

1.1. General Background of the Study

Nepal, being a small landlocked country with an area of 1, 47,181 square meters and sandwiched between two big economic giants, China and India, have relatively closed economy. The slowdown of Nepalese economic growth is mainly due to limited natural resources, landlocked location, difficult geography, and poor infrastructure, weak human base with extremely poor level of education and health and poor public management capacity. Due to lack of education, Nepalese people are unable to grab the opportunity of the open business environment.

Agriculture is the backbone of Nepalese economy and means of livelihood for the majority of population and also the main of gross domestic production. But non-agriculture sector has also significant contribution in the national economy. Different manufacturing organizations like industries and non-manufacturing organization like business enterprises, commercial banks and finance companies come under this sector. The establishment of these organizations helps in the smooth development of any country by generation employment and production activities for the rapid economic development. These establishments need huge amount of capital for its operation, growth and existence. These capitals can be raised mainly from financial market.

Financial market is the place where the financial instruments are trade. Financial instrument include marketable securities like treasury bills, commercial papers and shares, bonds, debentures, etc. It is a means to transfer fund from savers to those in need of funds. Financial experts have mentioned it as a brain of the entire economic system. The failure of the financial market is money and capital market.

Money market is short term financial market which is created by a financial relationship between suppliers and demanders of short term fund which have maturity of one year or less. Most of the money market transactions are made in marketable securities, which are short term debt instruments, such as treasury bills, commercial papers and negotiable certificates of deposit issued by government, business and financial institutions. The money market exists because certain individuals, businesses, government, and financial institutions have temporary idle funds that they wish to place in some type of liquid asset government and financial institutions find themselves in need of seasonal or temporary financing. The money market thus brings together the suppliers and demanders of short term liquid funds.

Capital market is the place where financial instruments are traded. Financial instruments include shares, bonds, debenture, etc. Capital market is a market for long term funds having maturity 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 saving are channel zed to industrial and business enterprises. Demand for the capital in the capital market come from agriculture, industry, trade and government while the source of supply is from individuals, corporate saving, and institutional investors and surplus of government. For mobilization of inevitable 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 saving 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. Secondary market is of two types, primary market and secondary market.

Primary market is concerned with the floatation and distribution of first hand securities to the general public which is 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 invest in the long term ventures and also enables them to covert 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.

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 underdeveloped for long time. The history of securities market began with the flotation of shares by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. in

1937. Introduction of Company Act in 1964 and the establishment of securities Exchange Centre Ltd. in 1976 was other significant development resulting to capital market. Initially, the 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. The incorporation of Securities Board, Nepal (SEBO) under the Securities Exchange Act, 1983 and conversion of SEC into Nepal Stock Exchange (NEPSE) under the government policy on capital market reform has greatly contributed to the development of primary as well as secondary market for the corporate securities.

SEBO was established on 26 May, 1993/85. It established with the objective of promoting and protecting the interest of investors by regulating the securities market. Besides the regulatory role, it also responsible for the development of securities market in the country.

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 SEBO. 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.

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 time, 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.

Efficiency in the stock market implies that all available relevant information regarding a given 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 price 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.

1.2 Focus of the Study

Market price of the stock fluctuates daily in the Nepalese Securities Market. To find the main factor that affect 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, is 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 indicator like NWPS, EPS, DPS, etc. This study focuses on the efficiency of the Nepalese stock market and behavior of the stock price in Nepalese Securities Market the main focus of this study is outlined as follows.

1. To find the specific relationship between MPS and fundamental financial indicator (NWPS, EPS, DPS).
2. To find out whether the common stocks of the sampled companies are Equilibrium priced or not.
3. To find out whether the investors are aware of the trend of financial indicators or not.

1.3 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, and finance companies, airlines, manufacturing companies, hotel 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 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 dose not seems to be in accordance with the financial indicators- Net worth per share (NWPS), 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 sector.

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 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.

1.4 Objectives of the Study

1. To examine the stock price behavior of the listed companies in NEPSE.
2. To study whether the stocks of the sampled companies are overpriced, under priced or equilibrium priced.
3. To examine and evaluate the relationship of MPS with various financial indicators like NWPS, EPS, DPS, etc.
4. To analyze the degree of risk involved in the company investment.
5. To present some suggestions based on the findings of the study.

1.5 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 significant 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.

1.6 Hypothesis of the Study

The following hypotheses have been set for the study.

Null Hypothesis:

There is no significant relation between MPS and various financial indicators.

Alternate Hypothesis:

There is Significant relation between MPS and various financial indicators.

1.7 Limitation of the Study

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

1. The study is based upon the data provided by Nepal Stock Exchange Ltd. (NEPSE) and Security Board of Nepal (SEBO).
2. The study is based on the secondary data and no efforts have been made to

- verify the data provided by SEBO and NEPSE and other related corporate bodies.
3. The study has been made only on selected NEPSE stocks of different sectors.

1.8 Organization of the Study

The 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, articles, journals, reports and other relevant materials.

Chapter III: Research Methodology

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

Chapter IV: Data Presentation and Analysis

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

Chapter V: Summary, Conclusion and Recommendations

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

CHAPTER -II

REVIEW OF LITERATURE

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, articles, 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 have been reviewed of this subject.

Thus, this chapter is broadly discussed under three sections:

Conceptual review

Review of Journals, Articles and Research Works

Thesis review

Conceptual Review

For the purpose of the study, reviews from some books related to the topics 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 terrorist attack on Iraq, etc. which have affected the worldwide investment sectors.

2.1 Common Stocks (Shares)

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 those of preferred stockholders and bond holders (www.greekshares.com).

The common stocks are 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, 1995:905).

The common stocks are issued by the firms to raise ownership capital and investors buy them with expectation that they received 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, 1996:132-133 & 333).

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 character 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, 199:85).

"The founders of a corporation obtain a corporate character from the state, have shares of common stock printed, and sell the price 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, 1983:37).

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' meeting 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 verify that no errors were made, and when all checks are completed, the certificate is sent to the new shareholder (Francis, 1983: 37-39).

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 to keep stockholders with friends in the corporation from getting shares at a low price while others buyers of identical shares have to pay may. Selling share at reduced price to friends is a form of price discrimination against many potential investors (Francis,1983:40).

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: 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 share of common stock outstanding. Book value gives a picture of the assets if the corporation, but it has no real relation to stock prices. Companies sometimes find their common stock selling for different from book value (Francis, 1983: 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: 418).

2.1.3 Classifications of Common Stock on the basis of their Features

a. Blue Chip Stocks

Stocks of very large, well-established corporation have been in dominant position with strong balance sheets and size and are called blue chip stock.

b. Growth Stocks

Stock whose price grows with the growth of corporation's earning and dividend with a comparatively higher growth than the average price appreciation.

c. Income Stocks

Stocks having stable cash dividends record are often called as income stocks.

d. Cynical and Defensive Stocks

Stocks, which are influenced by economic and industrial cycles, are called as cyclical stocks whereas stocks which are less susceptible to economic cycles are called defensive stocks.

e. Speculative Stocks

Stocks, which are viewed by investors with some speculative motives, are called speculative stocks.

f. Small Stocks

Stocks depending upon the capitalization norms are generally known as small or even blue chip stocks.

g. Treasury Stocks

If a corporation decides to buy back its own stock, the acquired stocks are called treasury stocks.

2.1.4 Characteristics of Common Stocks

Claim on Income

The common shareholders have a claim to residual income, which are 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 are 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: 415).

Claim on Assets

The common stockholders have residual claims 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.

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.

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 associations. For instance, if they want to change its authorized capital or the objectives of business they need ordinary shareholder's approval. The power to vote for the board of director and for or against major issues. (such as merger or expansions into new product lines) belongs to the common stockholders because they are the owners of the corporation.

Preemptive Right

The law grants the shareholders the right to purchase new shares in proportions to their current ownership. Thus the preemptive right entitles stockholders to maintain his proportionate share ownership in the company. The stockholders option to purchase a stated numbers 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 correct 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 earning and assets and a voice in management proportionate to the fraction of voting shares they own. The preemptive right, if exercised, prevents the preemptive 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, 1983:39).

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 holding 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 share. 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.

Earning Per Share (EPS)

Accounting earning that represents the difference between revenues and expense 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 (Sharepe, Slexander Biley, 2001:622).

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.

Dividend Par 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 profit earned by firms. The sole motive of stockholders is to receive return on their investment, nothing please 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 1.1
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 share 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 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).

Stock Repurchases

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 repurchased 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).

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 per 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 the shares outstanding. (Sharpe, Alexander Biley, 200: 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 Copelan, 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 Copelan, 1992: 1113).

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 share is determined by demand and supply preferences.

Due to the market imperfections and uncertainty, shareholders may give a higher value to the near dividends capital gains. Thus, payment of dividend may significantly affect at the market price of shares. Higher dividends increase the value of shares and low dividends reduced 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 and Copelan, 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-investment that may have little relation to current values of prices (Weston and Copelan, 1992:1113).

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 investors 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 R_f . It consists of 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 R_f 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 differed 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 goods 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, 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 expects to be compensated for the uncertainty and will require and 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 required rate of return for that investment (Cheney and Moses, 1992: 34).

Each investment involves on certainties that make the future investment return risky. So, a rational investors 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 investor 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

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

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 (β)

Beta Coefficient (β) 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 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 same 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 betas are the norm. The majority of coefficient falls between 0.5 and 2.

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

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

Where k_j = required return on asset j ; R_f = risk-free rate of return; β_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 is an increasing function of beta β , 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 market risk premium [$\beta_j \times (k_m - R_f)$]. 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.

Some Comments on CAPM

The capital asset pricing model generally relies on historical data to required returns. The betas, which are developed by using data for the given asset as well as for the market, may not actually reflect the future variability of returns. Therefore, the required returns specified by the model can be viewed only as rough approximations. Analysts and other users of betas commonly make subjective adjustment to the historically determined betas in order to reflect their expectations of the future when such expectations differ from the actual risk-return behavior of the past.

The CAPM was actually developed to explain the behavior of security prices and provide a mechanism whereby investors could assess the impact of a proposed security investment on their portfolio's overall risk and return. This is actually

based on an assumed efficient market in which there are many small investors, each having the same information with respect to securities; there are no restrictions on investment, no taxes, and no transactions cost and all investors view securities similarly and prefer higher returns and lower risk, while this perfect world appear unrealistic.

In spite of the fact that the risk return trade-off described by CAPM is not generally applicable to all asset, it provides a useful conceptual framework for evaluating and linking risk and return. An awareness of this trade- off and an attempt to somehow capture and consider risk as well as return in financial decision making should aid the financial manager in achieving the goal owner wealth maximization (Gitman, 1988: 228-233)

2.3 Financial System and Market

Financial market facilitates the transaction of financial assets like deposits, loan, bonds, securities, stocks, coequal, 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 as place where fund suppliers and fund borrowers are brought together with the help of financial intermediates directly or indirectly. These intermediates channel nation's savings into most productive uses. Leaders or suppliers of funds exchange money for other assets that tend to provide a better future return. The net effect of such a transaction I that they buy a claim against someone's 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). Likewise Mishkin (1992), Baye R. Jansen W. (1996), Mayo B. (2002)_ consent that financial market is the arrangement that helps to allocate resources efficiently.

Financial market can be better understood with a full fledged knowledge on 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 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 is an important part of financial market. The market in which long term financial instruments, such as equities and bonds, are raised and traded is capital market (Definitions and Data Notes, World Development Report, 1989:9).

Capital market securities include such marketable debt securities, with maturity of a year or more, and equality 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 share and other securities to raise fund 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 longer term capital by

issuing share and other industrial bonds to the investing public. On the whole, capital market is proving very significant to enhance the countries financial 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 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 need 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 source of fund, internal and external, of fulfilling financial needs of a firm. Internal source 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.

a. 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. 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. EBON, in order to regulate the primary market has issued issue management guidelines. Merchant Bankers manage issue in India and in US; 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 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 on 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 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)

2.4. 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 is inefficient, which includes technical analysis theory and fundamental analysis theory. Contrary approach argued that bathe 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 information set with 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.

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 fluctuation. 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 share as reflected in the actions of market rather than the intrinsic worth of share. The analysis or prospective investors who analyze the security to predict the future price of a share on the basic 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 change in buying and selling pressure. This occurs in account of diverse internal and external factors (profits, political environment, predictions and the likes). Price stabilizes 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 :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, 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 some of the statistical information produced by the market (Felix Rosenfeld, 1975: 297).

Technical analyses involve 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 more 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: 12).

The technical 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 pries are moving higher or lower, and even by how much. Therefore, the patterns or a trend in pries 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 divides. 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 stock (such as industries) or stock in general. It is sometimes said that fundamental analysis is designed to answer the question "what?" and

technical analysis to answer the question "when?" (Share Alexander and Baily, 2001:844).

Technical analysis discern past patterns or trends, which they believe to repeat in the future and recommended for 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: 434-435).

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 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 future; this process is equivalent to forecasting the firm's 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 mis priced will depend, in part, on it. Fundamental analysts believe that any notable cases of mis praising

will be corrected by the market in the near future, meaning that price of undervalued stocks will show unusual appreciation and prices of overvalued stocks will show unusual depreciation (Sharpe, Alexander and Bailey, 2003: 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 fundamentalist tends 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 'what?' (Sharpe, Alexander & Bailey, 1998: 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: 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 stock just too intrinsic value. The actual value of securities therefore is considered to be function of a set of new information (Bhall, 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).

About this approach, Yasaway N. J. writes in this book ‘Equity Investment Strategy’, “By nature the fundamentalist is conservative in approach and is generally unwilling to take a quick loss, he would rather adopt a buy and hold

police.” Therefore fundamental analysis allows the analyst to forecast holding period yield and risky ness of achievement that yield, but these figures alone do not necessarily prompt a buy or sell action.

Technical Analysis or 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: 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 price 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 so 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 price raises 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 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 analysis however, claims 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 forecasting. Stated differently, technical analysis is based on a belief in trends and patterns in stock prices such that the 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, 199: 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.

2.4.3. Efficient Market Theories

The term efficiency may be defined in various ways: a locative 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: 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 price 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).

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 is large number of rational, profit-maximizes 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: 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 “In 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).

An efficient market is concerned with the pricing mechanism of security market. It has two dimension of price adjustment, one is the type of information reacting to and another is the speed and quality of security to the information as any random infusion of information instantaneously and correctly adjusts in prices, there will be no subsequent dependencies or lags that are profitable. Pricing not only should be instantaneous but should discount accuracy of information so that the prices fluctuate close around its intrinsic value. So Kean rightly pointed out, “It would be clearly an odd interpretation of efficiency if a doubling in the price of share were regarded as an efficient reaction to new information, simply because the movement was instantaneous, the information in fact warranted a substantial reduction in the price (Kean, 1983:9).

Agreeing with the view of Kean, Francias and Taylor noted “Market efficiency refers to the ability of financial assets to quickly adjust and reflect all the information that relevant to value in its price.”(Francis and Taylor, 1986: 12)

According to Malkeil (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 participant. 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).

‘I take the market efficiency hypothesis toe be the simple statement that security prices fully reflect all available information. A precondition for this strong version of the hypothesis is that information and trading costs, the costs of getting prices to reflect information, are always (Grossman and Stiglitz, 1980).

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 prices 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 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 efficiency 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: 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 linked 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 turns 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 valuable intelligence” (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 test of the efficient market hypothesis are carried out, securities markets are tested for varying degrees 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 naive 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 naive 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, 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 naive buy-and -hold strategy. The reason given is that no one has monopolistic profit making are found to violate this hypothesis (Francis, 1983: 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-strong efficient, it must be efficient in the weak sense also, because the past price 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 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.

Theory of Weakly Efficient Market or random Walk Hypothesis (RWH)

The weak form of efficient market hypothesis (EMH) states that current prices fully reflect information contained in the historical price movements according to Kean. “The market is efficient in the weak sense if share prices fully reflect the information implied by all prior price movements. Price movements in effects are totally independent of previous movements implying the absence of any price patterns with prophetic significance” (Kean, 1983:10).

So, the past prices have no meaningful information to predict future course of price fluctuations, which can be used to earn above average return. The movements of future prices are independent from previous prices or the series of price changes are random walk theory of share price behavior.” Weak form efficient market hypothesis is popularly known as the random walk theory (Fischer and Jordn, 1995: 540).

The third theory involves study of random walk or efficient market hypothesis. In 1990s, a French mathematician, Louis Bachelier wrote a scientific paper suggesting, that day-to-day security price fluctuations were random. His idea is known as random walk theory. But interest in the model did not begin until the publication of two papers, one by Roberts and the other by Osborne in 1959. The random walk efficient market theory is in completely at variance with the technical and fundamental analysis theory. A number of empirical researches have been done on varied set of data for different time periods to test the random walk efficient market model for describing share price behavior (Fischer and Jordan, 2000:553).

Random walk model says that previous price changes or changes in return are useless in predicting future price or changes in return. It means if we attempt to predict future prices in absolute terms using only historical price change

information, we will not be successful, i.e. successive price changes are independent. This independence implies that prices at any time will on the average reflect the intrinsic value of the security. If a stock's price deviates from its intrinsic value, because among other things, different insights into investors evaluate the available information differently or have different insights into future prospects of the firm, professional investors and astute non professional will seize upon the short term or random deviations from the intrinsic value, and though their active buying and selling of the stock in question will force the price back to its equilibrium position (Fischer and Jordan, 1965: 553).

Random walk theory implies the future path of price level of security is no more predictable than the path of a series of cumulated random numbers. The series of price changes has no memory; i.e. the past cannot be used to predict the future in any meaningful way. It means that current size and direction of price changes is independent and unbiased outcome of previous price changes. The random walk models in pristine form in two main hypothesis states that (i) successive price changes are independent and (ii) the price changes conform to some probability distribution (Fama, 1965:35).

Statically independence means the probability of distribution for the price change during the time period 't' is independent from the sequence of price changes during previous time periods. Mathematically,

$$P_r (x_t=x(x_{t-1},x_{t-2},\dots))= p_r(x_t=x)$$

In the above equation, the term on the left side of equation is the conditional probability that price change during the time will take the value x, conditional on the knowledge, the previous price changes too the value x_{t-1}, x_{t-2} , etc. But the term on the right of the equation is the unconditional probability that the price change

during t will take the value x . The expression means the distribution of an independent random variable are identical (Gupta, 1981: 31).

Proponents of random walk recognize that in general, perfect independence assumption does not exist in real world. So they argue that for practical purposes small degree of dependence does not violate random walk hypothesis as long as it cannot be used to forecast future to earn more than average market return. Random walk model is valid as long as knowledge of the past behavior of the series of price change cannot be used to increase expected gains (Fama, 1965: 35).

For practical purpose, independence hypothesis is accepted as long as the degree of dependence considered in the series of price change is not sufficient to forecast the future from the historical price movements. In a way, it makes higher profit than they would be under the naive buy-and-hold policy.

Out of two hypotheses of the random walk theory, independence of successive price changes is strong and most important one to make theory valid. The second one is price changes conform to some probability distribution but its shape or form of distribution need not be specified i.e. any distribution is consistent with the theory as long as it correctly characterizes the process generating the price changes. (Fama, 1965: 36) However, the parameter of the distribution should be stationary but not strongly impose if independence hypothesis is hold true However, still the forms of distribution, if price changes, are important from investment decision, academic and research point of view (Gupta, 1981:41).

Actually market mechanism establishes the existence of random walk theory that the successive price changes to be independent. The stock market poses steady inflow information that influences the set of anticipation of the individuals. There are some information that has whole market wide impact such as change in

monetary and fiscal policy on security prices and information that have an effect on industry wide impact such as change in government tax policy on specific industry. There is information such as announcement of earnings and dividend that effect price of the particular security. The change in the set of anticipation resulted from either of the above information is equity to each individual and may be caused by psychological and other factors, which impinge them to bid on price of the securities in the market. There are other groups of participants who estimate the intrinsic value of individual securities from the received information. As Fama advocates, "the existence of intrinsic value for individual securities is not consistent with the random walk hypothesis" (Fama, 1965: 36).

The intrinsic value of given securities depends on earning prospects of the company which in turn are related to economic, political, industrial and company specific factors. At many point of time, there exist implicitly the intrinsic value of each share but in the world of uncertainty the intrinsic values are not known exactly. Therefore, there can be disagreement among the participants about the estimated intrinsic value of the share and actual price differs from its intrinsic value. Over the time, the intrinsic value itself changes, as new information appears that affects the prospects of the company. New information may be about deregulation in the quota system on the efficiency licensing, a change in management, success in research and development and tariff imposed on the raw materials etc. If steady inflow of various types of information (i.e. pessimistic, optimistic and so on) arises independently across the time and if the participants do not show dependent tendency about intrinsic value, the subsequent price of stocks will be independent. However, in the real world, these conditions always do not hold true. True may be dependencies in the reaction of participants towards the estimation of new intrinsic value or whimsical tendency. For exchange certain individual's or institution's action new anticipation of value may induce many other people. This behavior leads to deviate the anticipation value for below and

above from the true values which result unhindered dependencies in subsequent price changes. In this situation, we can assume that there exist many sophisticated traders of two types: (i) traders having much better capacity to predict the appearance of new information and estimation of its effect on intrinsic values than others, generally named superior intrinsic value analysis, (ii) traders having much better skill at doing statistical analysis of price behavior named technical analysis. The sophisticated traders can recognize the situation where the price of stock is beginning to run up or down from its intrinsic value because of inappropriately under or over discounting of information and its adjustment in the securities prices. This situation provides them incentive for speculation in the market because the price is expected to move eventually to its intrinsic value. Thus, the existence of profit maximization strategy of these sophisticated traders lead to neutralize the dependence in the price changes and the price changes follow to independence of successive price change.

Of course, in the uncertain world, sophisticated traders cannot always estimate intrinsic value exactly and their efforts towards erasing the dependencies may not be sufficient. In this case, sophisticated chartists can reinforce the neutralizing mechanism, because as long as there are important dependencies they can easily discern the 'trends' and 'patterns' and initiate value maximization strategy. Over the time, the infusion of the new information in the market may move dependently which will tend to create dependence in the successive price changes of the security. For example, optimistic information tends to followed by pessimistic news than good news. In this case also, the sophisticated traders eventually learn that it is profitable for them to estimate price changes of current new information and subsequent dependence of the same information and through their active speculation dependence in price series and establish independence assumption of the random walk theory of stock market price behavior.

The weak form asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis is of no use. According to Eugene Fama, the weakly efficient hypothesis stipulates that historical price and volume data for securities contain no information which can be used to earn a trading profit, above that could be attained with a naive buy-and-hold investment strategy. This hypothesis suggests that technical analysis is well-recorded but worthless folklore (Francis, 1991: 543- 544).

It believes that the current price of stock already fully reflects all the information contained in the historical sequence of price. Therefore, there is no benefit as far as forecasting the future is concerned, in examining the historical sequence of prices. This weak form of efficient market hypothesis is also known as the random walk hypothesis.

The random walk theory asserts that price movements will not follow any patterns or trends and that past price movements cannot be used to predict future price movements. Much of the theory on these subjects can be traced to French mathematician Louis Bachelier whose Ph. D. dissertation titled “The Theory of Speculation” (1900) included some remarkably insightful and commentary. Bachelier came to the conclusion that “The mathematical expectation of the spectacular is zero” and he described this condition as a “fair game” (www.investorhome.com).

Though the subject of market efficiency has been much concerned area of the study for the academicians and researchers in recent times, the paradox of efficient markets is that if every investor believed a market was efficient, then the market would not be efficient because no one would analyze the securities. In effect efficient markets depend on market participants who believe the market is inefficient and trade securities in an attempt to outperform the market. In reality,

markets are neither perfectly efficient nor completely inefficient. All markets are efficient to a certain extent, some more so than other. Rather than being an issue of black or white, market efficiency is more or matter of shades of gray. In markets with substantial impairments of efficiency, is more knowledgeable investors can strive to outperform less knowledgeable ones. Government bond markets for instance, are considered to be extremely efficient. Most researchers consider large capitalization stocks also to be very efficient, while small capitalization stocks and international stocks are considered by some to be less efficient. Real estate and venture capital, which don't have fluid and continuous markets, are considered to be less efficient because different participants may have varying amounts and quality of information.

Market Prices of Shares as Output of the Demand and Supply Interaction

Stocks and shares mostly traded in the securities market are one of the assets into which money can be invested. The investment further is more attractive to majority of individuals because it is also liquid in character. But what is the most influencing factor in determining the price of the stocks is interaction of demand and supply in relation to the interacting forces of demand and supply (Doodha, 1962:10).

Ackerman pines that, “the price of a given stock is determined exclusively by the two forces demand and supply. Converting one such stock at a given time that the prices and volumes of its past transaction are meaningful indication of profitable relationship of future supply and demand pressure, it is likely to encounter in the market that such relationship is the most important element determining the probable direction of price movement (Ackerman, 1980: 10).

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 price is dividend. Dividends are strongly influenced by the earning power of the enterprises. There is very close correlation between corporate earnings and dividend. Earning power, in turns, is a 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 factor 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 relationship of supply-demand are reflected directly in the volume of transactions, but there is also considerable effect from the actions of institutional investors, margin transaction, etc. although margin transaction 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: 63-64).

Securities market in Nepal witnessed a sharp growth during the past couple of years. The volume of trading has increased. The size of the market has been winded. The number of investing population has grown up in aggregate. The tendency of raising capital from general public is rising. Mostly 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 loosing 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: 65-66).

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 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 organized way is prevalent in Nepal since the ancient time substantial portion of rural credit is available forever body

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 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 and 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 players play 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 in the growth of financial institutions as well as financial market. Altogether there exist at present 15 commercial banks. There are 21 development banks that include Rural Development Banks as well. Then in the chain, financial system covers 59 finance companies, 18 insurance companies, 34 saving and credit co operatives with NRB license and 38 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 link CLF (Citizen Investment Fund) and Provident Fund.

The total network of the financial analysis 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 supplies of capital tend to be positive.

In the tenth plan (2002-2007), capital market development plans, objectives, policies and programs have been already spelled out to create sufficient enabling conditions for the sound and steady growth of capital market in the country. Despite all these developments, the gross domestic savings continue to be minimal and the ratio of total saving to income is very low. Even then, the tenth plan has specified the target to raise funds of Rs.7 billion from primary issues, to generate secondary market of Rs.12 billion and raising the value of market capitalization to 15% of GDP. In addition, there is plan to increase 40 companies in list of stock exchange. How far this target of tenth plan will be fulfilled is a big question of future capital market growth in Nepal.

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.

Money Market in Nepal

The organized market in Nepalese content 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 lender. It is unorganized because Nepal Rastra Banks 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 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 basically Nepal Rastra Bank and commercial banks and instruments dealt are treasury bills, commercial bills and short term bank loan.

Treasury bill market is major component of money in Nepal, started in the year 1962-62. Since then it has been and 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 the 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% mostly by commercial banks (Shrestha and Bhandari, 2003:105).

Commercial banks are major borrowers and lenders in the short term money market. Although, commercial banks have been dealing with commercial bills 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 L Cs and the purchase of exports bills. Beside 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 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.

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. This history of security market began with the floatation of shares by Biratnagar Jute Mills Ltd. and 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 saving 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 Security 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 operation 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 measure not attractive to unorganized stock brokers dealing in the securities business” (Securities Exchange Problems and Prospects, M.K. Shrestha, July 1996).

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 Nepalese history of stock exchange and this brought change in nomenclature to the extent that the title of the center changed 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 Securities Board, Nepal (SEBO) under the Securities Exchange Act, 1983. The incorporation of SEBO and the conversion of SEC into 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. Beside 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 (FSCCI), 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 license to establish and operate stock exchange, registration of public issue 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 systemizing 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 basis 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 exchange.
-) Provide license to operate securities businesses.
-) To 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, 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-Office 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.

Member 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 NEPSE has adopted and “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 offer price match, contracts between the buying on the floor. (www.nepalstock.com)

2.5 Review of Previous Studies

2.5.1 Review of Journals, Articles and Research Works

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.

Louis Bachelor first tested the random walk model in 1900. He tested the model in commodity prices and found that those prices followed a random walk. He presented the evidence that the commodity speculation in France was a 'fair game'. He also concluded that the current price of a commodity was an unbiased certain estimate of its future price. After the first discovery of the random walk model in 1900 by Louis Bachelor, empirical testing of the model in the stock market prices almost remained stagnant until 1960s. There are large numbers of studies most of which are briefly reviewed below.

H.V.Roberts carried next study in 1959. He conducted simulation test by comparing the accumulation of random numbers and the Dow Jones Industrial Average Index (DJIAI) for about one year starting from Dec.30, 1955 to Dec.28, 1956. He found similarity between these two series. He further observed that the first difference of these two series produce the same pattern. His work was significant because he gave a number of methodological suggestions for testing what calls the chance model. In particular, he suggested runs analysis for testing independence of price changes.

Investor was enlightened and they stated inquiring about company's financial health and future prospect before buying or selling shares. People turned to price-earning multiples; NEPSE index 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 buying gradually came down and so did the price (The Katmandu Post; 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 instructional 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, 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 trading practices . Wash sales should be discouraged by immediate action. Nepalese 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 relates distortion in the price determined by the market forces. Such action helps in avoidance of fiction names created by several 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 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 of the responsibilities and accountabilities among company management to be shareholders focused. Time has come for company management to respond to shareholders expectation of return from their investment in share 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, 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 bust 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, 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 investor's 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 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.

Now, the latest slumps in the secondary market, despite a pretty good performance by commercial banks, make it more apparent that investment in the past was done on whim. Even officials at the stock exchange and the security Board, refuting investors allegations of the market manipulation and insiders trading of last February, discreetly claimed that the Nepalese stock Market is in a nascent stage And that, investments are made more o an impulse, rather than through market study ad credit rating (Business Age, 2001:25).

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 company list its shares in the market? It has been three years that Gorkhali Rubber Udhgyok 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, Jan 2000: 25).

Share trading formed the headline of major dailies of Nepal a few days ago. The new was that some of the staff of the Nepal Merchant Banking and Finance Ltd. (NMB, the share registrar of Standard chartered Banking 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 shareholders 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 , Katmandu. The accused is still learnt to be in police custody. As stated in the news, though some other staff wers also involved in this police custody. As stated in the news, though some other staff 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 type 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 invertors.

A close study of this case brings the deficiencies of our market to the forefront. The major deficiencies are obviously lack of professionalism among the market participants and lack of interest in compliance. The issuer company cannot escape from its responsibility simply blaming the registrar. It most satisfies those investor's whole shares have been stolen. The share registrars are found to be careless and a question can be raised on their professionalism and honesty. The stockbroker has also made a mistake by executing the share trading without identifying the client and thus violating the codes of conduct for stockbrokers issued by Securities Board (SEBO), the regulator for of the capital market in Nepal. As the code clearly states that the brokers must identify their clients, such scandal could have been avoided had the broker complied with the code. Also the regulators are equally responsible as they are not effectively monitoring the activities of securities business person and taking legal action against their non-compliance under the prevailing rules and regulations. As the capital market of Nepal is still in the infant stage, the regulatory system established to systemize the

securities trading still has deficiencies. This leaves scope for anyone to tame unfair benefit from the market at the cost of ordinary investors. Not only the investors are found to be irrational and concerned with short term gains, in this scenario, we cannot expect perfect behavior from all the market participants. The major problems seen in the system are duality and ambiguities in the regulations, inadequate legal provision to control the market, lack of adequate market infrastructure, lack of clear demarcation of duties of the regulators, poor corporate culture, lack of professionalism of the market participants, poor compliance and lack of clear legal provision for taking action to address the non compliance cases.

In its annual report for the fiscal year 2000/01, SEBO states that it has made some attempts to address the issues through issuance of guidelines, directives and disclosure formats to the market participants, codes of conduct for the stock brokers, etc. It has also prepared a draft for the new securities exchange act, which was presented to the Ministry of Finance in 1998 to initiate the necessary legislative process. However, it is still to be enacted by the parliament Even though SEBO has made attempts to solve the problems, they still there. It cannot escape of its duty to explain the present state of the market and deficiencies existing in the system. Taking necessary support from the government it should take the required step to better co-ordinate the market discipline the market healthy capital market in the country. Moreover, it is important to discipline the market participants and educate them of their moral duty to make others comply with the prevailing rules and regulations. Only this can create the atmosphere where scandals like this cannot be repeated, (New Business Age, April 2003: 44)

Investment in the capital market now has become very uncertain, sending the investors in search of avenues of more certain retains. 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, March 2004: 42).

A study conducted by Pradhan and Balampaki (2004) on the title of "Fundamentals of Stock Return in Nepal" has given some important insight regarding nature of stock return in Nepal.

This study deals with fundamentals of stock return. It examines if dividend yield, capital gain yield and total yield are related to earning yield, size, book to market ratio and cash flow yield. The study is based on pooled cross sectional data of 40 enterprises whose stocks are listed in Nepal Stock Exchange Limited and traded in the stock market. The study reveals that earning yield and cash flow yield have significant impact on dividend yield. Other main findings of the study are:

Earning yield and cash flow yield have insignificant impact on book to market value whereas size has negative impact in dividend yield. In the case of earning yield and case flow yield, case flow yield has been found to be more informative than earning.

Capital gain yield is positively influenced by earning yield and size, whereas the same is negatively influenced by book to market value and cash flow yield. Book to market value has been found to be statistically strong in predicting capital gain yield.

Similarly, total yield is positively determined by earning yield and size, whereas the same is negatively determined by book to market value and cash yield. Book to market value has been found to be more informative than other variable.

K.C. (2004) has conducted a study entitled "Development of Stock Market and Economic Growth in Nepal" based upon the data of 10 years. The study reports that the relationship between financial development and economic growth, with focus on development role of stock markets, has been in debate for some time in the past. Empirical studies suggest that financial development does matter and stock markets do spur economic growth. Unfortunately, in Nepal, despite a history of about half a decade of planned economic activities to develop real sector of the country, little attention was paid on the development of financial sector. In the past one and half decade, financial sector despite many problems has developed significantly in Nepal. However, most of the developments were confined to the banking sector. Stock market has virtually remained stalled because of this priority in the government's financial reform policies.

Various measures of stock market deployments indicate that the stock market in Nepal is underdeveloped and has failed to show impact on the overall national economy. Small market size has made it vulnerable to manipulation and price rigging. Low turnover ratio and value traded ratio to volatility, and high concentration ratio indicate that the stock market in Nepal is highly illiquid and risky. Investors tend to avoid stock market because they do not have options to it since stock market is less reliable source of raising funds for them. Due to this, financial system in Nepal has remained basically bank dominated.

2.5.2 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.

Mukti Aryal 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 stock 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 that there is a sufficient 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.

Surya Chandra 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 Led.(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 naive 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 naive investors have dominated in the market that can cause price to diverge significantly from intrinsic values because the very existences of the sophisticated traders cause to erase the opportunities of persistence in price which establish independence of successive price changes.

Jas Bahadur Gurung 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.

Price of share 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. Price, 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 successive years. In the 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.

Basu Dev Upadhyay has done the research on 'Share Price Behavior in Nepal'. Under this study, he has concluded that the first order serial correlation coefficients for some equity share are statistically significant. Similarly, the second order coefficients are also significant for some equity shares except first other. The empirical evidence pertaining to some equity shares indicates serial dependence. Thus, the available evidence suggests that the random walk hypothesis of 'persistence' has been generally supported by the results, thereby not leading support to the random walk hypothesis. The mean absolute value of the serial correlation coefficients is lower when the lag weeks are increased. So, the information of past price changes have low power to predict future price changes for longer week.

Bidur Khadks 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.

CHAPTER - III

RESEARCH METHODOLOGY

3.1. Introduction

Research Methodology is a systematic way for solving any research problem. It is a science of studying how research is done scientifically. It studies the various steps that are generally adopted by a researcher during the course of studying a research problem with certain objectives. It is an essential aspect of research that a researcher should know not only the research techniques but also the research methodology. Therefore, efforts have been made to present and explain the specific research design for the sake of attaining the research objectives. It includes research design, population and sample, sources of data, data collection techniques, data analysis tools and limitations of the methodology.

3.2. Research Design

A research design is a plan of the proposed research work. It represents a compromise dictated by mainly practical considerations. It is a catalogue of the various phases and facts relating to the formulation of research efforts.

Research design is a plan or blue print for study for the collection and analysis of data that presents a series of guideposts to enable the researcher to progress in the right direction in order to achieve the goal (Joshi, 2001:12).

This is the study of share price behavior in Nepal. Is especially based on the price pattern of shares that increases or decreases. The main objectives of this study are to examine the interrelation of Mps with EPS, NWPS, DPS and other financial indicators, and to study whether the stocks of the sampled companies are overpriced, under priced or equilibrium priced. As per the nature of the study,

secondary, data, as well as survey research design was followed with explanatory and analytical approach

3.3 Population and Sample

All is the companies listed in the stock exchange were considered as the total population Out of them, the companies that were in existence and doing share transaction in NEPSE were considered as the samples for the study. The companies were categorized into eight groups as done by the stock exchange. The number of listed companies reached to 142 by the end of the fiscal year 2007/08. The table below clearly describes the total population and sample

Table 3.1
Listed Companies by the end of the Fiscal Year 2007/08

| S.No | Sector | Number of Listed Company | Percentage | Sample Considered |
|-------|------------------|--------------------------|------------|-------------------|
| 1 | Commercial Bank | 17 | 17.17 | 8 |
| 2 | Development Bank | 23 | 23.23 | 2 |
| 3 | Finance Company | 55 | 55.56 | 1 |
| 8 | Other | 4 | 4.04 | 1 |
| Total | | 99 | 100 | 12 |

Source: Annual Report of NEPSE, 2007/08

For the purpose of this study, a total of 98 companies are considered as sample population which includes 26 commercial banks, 8 development banks, 50 finance companies 15 insurances companies, 4 hotels and 6 other companies. Among them, 12 companies have been taken as samples, which includes 8 commercial banks, 2 development banks, 1 finance companies and 1 company from other category and represents 12.12 percent of the total sample population.

The names of the sampled companies are as follows;

1. Nabail Bank Ltd. (NABIL)
2. Nepal Investment Bank Ltd. (NIBL)
3. Standard Chartered Bank (Nepal) Ltd. (SCBNL)
4. Himalayan Bank Ltd. (HBL)
5. Nepal SBI Bank Ltd. (NSBIBL)
6. Everest Bank Ltd. (NBB)
7. Bank of Kathmandu Ltd. (BOKL)
8. Nepal Development Bank Ltd. (NDBL)
9. Development Credit Bank Ltd. (DCBL)
10. NIDC Capital Markets Ltd. (NIDC)
11. Nepal Industrial and Commercial Bank (NIC)
12. Nepal Merchant Banking & Finance Ltd (NMBFL)

3.4. Sources of Data

In this study, data have been gathered especially from the secondary that had been used and published in books, bulletins and magazines. The primary source of secondary data on this study is monthly and annual trading reports of NEPSE. In addition, supportive data and information have been collected from articles, newspapers and published and unpolished records of NEPSE. Extensive use of the bulletins, surveys of NEPSE and Security Board have been taken in this study. The primary data for the analysis is made with the help of information collected by questionnaire and from personal visit and interaction with the staff of NEPSE and Security Board. information that are relevant to the study have also been taken from the web sites of NEPSE (www.nepalstock.com), Security Board (www.sebonp.com), Nepal Rastra Bank (www.nrb.org.np) and other related companies. Thus, the study has been conducted adopting both descriptive and analytical reproach readily available data of stock market.

Moreover, the relevant literatures were collected from Library of Shanker Dev campus, Library of Central Department of Management (T.U), Library of Security Board and Library of NEPSE.

3.5 Data Collection Techniques

The problem of the study is to find out whether there is randomness in the price of the common stocks of the selected companies, to what extent the MPS, of selected companies is correlated with various financial indicators like NWPS, EPS, DPS, etc, and what degree of risk involves in the investment of common stocks of the selected companies from the viewpoint of investors, which in turn shows whether the price of the common stocks are overpriced, under priced or equilibrium priced. In order to achieve concrete answers to these, questions, it needs various information.

First of all, the official website of NEPSE, www.nepalstock.com, has been browsed in order to collect the daily market prices of common stocks of the selected companies. Similarly, the financial reports of the concerned companies and other relevant information have also been taken from the same website. Some companies, whose financial information is not available on this site, have been taken from NEPSE, SEBO and from the concerned companies' share departments.

3.6. Data Processing

Data so obtained have no meaning unless they are arranged and presented a systematic way. Further, they need to be verified and simplified for the purpose of analysis. Moreover, data and information so gathered are to be checked, edited and tabulated in such ways that provide convenience for computation and interpretation.

The relevant data have been inserted in meaningful tables. Only the data that are relevant to the study have been presented in the tabular form in the understandable way and unnecessary data have been excluded. It is attempted to find out the conclusion from the available data, with the help of various financial as well as statistical tools.

3.7. Data Analysis Tools

3.7.1 Correlation Coefficient Analysis

Karl Pearson's Coefficient of Correlation

It is a statistical tool for measuring the intensity or magnitude of linear relationship between the two variables series. Karl Pearson's measure, known as Personian Correlation between two variables[series] X and Y, usually denoted by 'r[x,y]' or simply 'r' can be obtained as:

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{(n \sum x^2 - (\sum x)^2)} \sqrt{(n \sum y^2 - (\sum y)^2)}}$$

Where n= number of observations in series X and Y, $\sum x$ = sum of observations in series X,

$\sum y$ = sum of observations in series Y, $\sum x^2$ = sum of squared observations in series X, $\sum y^2$ = sum of squared observations in series Y, $\sum xy$ =sum of the product of observations in series X and Y.

The value of correlation coefficient 'r' line between -1 to 1, i.e. $-1 \leq r \leq 1$.

If r = 1, there is perfect positive relationship. If r = -1, there is perfect negative relationship. If r = 0, there is no correlation at all. (Gupta, 1999:519-521)

The closer the value of 'r' is 1 or -1, the closer the relationship between the variables and the closer 'r' is to 0, the less close relationship (Shrestha and Manandhar, 1999:234).

Coefficient of Determination

The coefficient of determination between the two variable series is a measure of linear relationship between them and indicates the amount of one variable which is associated with or accounted for another variable. It gives the percentage variation in the depended variable that is accounted for by the independent variable. It gives the percentage variation in the dependent variable that is accounted for by the independent variable. Moreover, it gives the ratio of the explained variance to the total variance and it is given by square of the correlation coefficient, i.e. 'r' 2. Thus, (Gupta 1999:585).

$$r^2 = \frac{\text{Explained variance}}{\text{Total variance}}$$

3.7.2. Regression Analysis

Regression analysis means the estimation or prediction of the unknown value of one variable from the know value of the other variable. It is a mathematical measure of the average relationship between two or more variables in terms of the original units of the data. In regression analysis, there are two types of variables. The variable whose value is influenced or is to be predicted is called dependent variable and the variable which influences the values or is used for prediction, is called independent variable. (Gupta, 1999: 289-298)

Line of Regression of X on Y

The line of regression of X on Y is the line which gives the best estimate of X for any given amount of Y. The regression equation is expressed as;

$$Y=a + bx$$

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

$$\phi Y = na + b \phi x \dots\dots\dots(i)$$

$$\phi XY = a\phi x + b\phi x^2 \dots\dots\dots(ii)$$

Where Y = value of dependent variable, X=value of independent variable, a=Y-intercept=slope of the trend line/ coefficient of regression.

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 variable X. In other words, it represents the rate of change. The convenient way to calculate the value of 'b' is as:

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

Similarly, the value of Y-intercept can be computed as:

$$a = \frac{(\sum x^2)(\sum y) - \sum x(\sum xy)}{n\sum x^2 - (\sum x)^2}$$

Standard Error of Estimate

A measure of precision of the estimate so obtained from the regression equations is provided by standard error of the estimate (S.E.E.). Standard error is a word analogous to standard deviation (which is measure of dispersion of observations about the mean of the distribution) and given us a measure of the scatter ness of the observations about the line of regression (Gupta, 1999:633-635).

Thus,

S_{yx} = S.E. of estimate of Y for given X

$$S_{yx} = \sqrt{\frac{\sum y^2 - a \sum y - b \sum xy}{n-2}}$$

Analysis of Variance of regression Line (Test of Regression Coefficient)

The significance of simple regression coefficient can be tested by testing the overall significance of the regression process by 'analysis of variance' or F-ratio (ANOVA). Steps that are to be followed for ANOVA have been presented as below.

Step 1:

Null hypothesis, $H_0: b=0$, i.e. the regression line of Y on X is not significant.

Alternative hypothesis, $H_1: b \neq 0$, i.e. the regression line of Y on X is significant.

Step 2:

Computation of the test statistic by:

1. Finding the total variation, $SST = \sum (Y - \bar{Y})^2$
2. Calculating unexplained variation, $SSE = \sum (y - \hat{y})^2$
3. Calculating the explained variation due to regression, $SSR = SST - SSE$
4. One way ANOVA table

Table 3.2
Calculation of F- ratio

| Source of variation | Sum of squares | Degree of freedom | Mean sum of squares | F-ratio |
|---------------------|----------------|-------------------|-------------------------|-------------------------------|
| Regression | SSR | K-1 | $MSC = \frac{SSR}{K-1}$ | $F = ratio = \frac{MSC}{MSE}$ |
| Residual | SSE | N-K | $MSE = \frac{SSE}{N-K}$ | |
| Total | SST | N | | |

Step 3:

Write down the critical value of F for (K-1, N-K), the degree of freedom at 5% level of significance.

Step 4:

Take decision. If the value of F is less than its critical value, H_0 is accepted, otherwise H_1 is accepted.

3.7.3. Risk Returns

Market Returns

Market Rate of Return

The market rates of return from different periods, denoted as ' r_{mt} ' is the explanatory variable in the characteristic line. The following equation shows how the rates of change in the stock market are calculated.

$$r_{mt} = \frac{S \& P_{t+1} - P_t}{S \& P_t}$$

Holding Period Rate of Return/ Realized Rate of Return

The concept of rate of return is important because it measure the speed at which the investor's wealth increases or decreases. An investor's single period rate of return, denoted as 'r', is simply the total return an investor would receive during the investment period or holding period stated as a percent of investment at the start of the holding period, which is computed as:

$$r_t = \frac{P_t - p_{t-1} + C_t}{p_{t-1}}$$

where r_t = rate of return for 't' period, p_t = market price at the end of period 't' p_{t-1} = market price at the beginning of period 't', C_t = cash flow income received during the period 't' (Clark, 1997:1-2).

Standard Deviation

It is quantitative measure of the total risk of assets. It provides more information

about the risk of the asset. It is a measure of the total risk of the asset. It measures the dispersion of returns around the mean. Its advantage is that the uncertainty of returns can be summarized into a single easily calculated number. The standard deviation of a distribution is the square root of the variance of returns around the mean. The following formula is applied to calculate the standard deviation, using historical returns.

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

Where HPR = holding period rate of return, \overline{HPR} = average holding period rate of return, n=no. of observations, δ_j = standard deviation of stock 'j' (Chenny, 1992:41).

Beta Coefficient

The beta coefficient is an index of systematic risk. It may be used for ranking the systematic risk of different assets. If beta is larger than 1, then asset is more volatile than the market which is called an aggressive asset. If the beta is less than 1, then the asset is considered defensive asset as its price fluctuation is less volatile than the market. On the other hand, if the beta is equal to 1, then asset is said to be average as its price moves proportionate to the market changes.

$$\beta = \frac{COV(r_p r_m)}{Var(r_m)}$$

Capital Assets Pricing Model

The basic theory that links together risk and return for all assets is commonly called the capital assets pricing model (CAPM).

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

$$K_j = R_F + [b_j \times (K_m - R_F)]$$

Where K_j = required return on asset j, R_F = risk-free rate of return, b_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, b_j , which measure 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, the risk free rate (R_F) and the risk premium [$b_j \times (K_m - R_F)$]. The $(K_m - R_F)$ portion of the risk premium is called the market risk [premium, since it represents the premium the investor might receive for taking the average amount of risk associated with holding the market portfolio of assets.

3.7.4. Run Test

Run test is a non- parametric test which can be defined as a sequence of consecutive price changes of the same sign followed and preceded by price changes of other sign. There exist three types of price changes in a series, i.e. positive, negative and no change. Therefore, there are three types of runs. Hence, a run of length I of any sign can be defined as sequence of I consecutive price changes of the same sign followed and proceeded by any other signs of price changes. Run test is performs to examine whether the actual number of runs confirmed to the expected number of runs. If the observed run and the expected number of runs do not significantly differ from each other, then it is concluded that the independent assumption of the successive price changes is uphold. Run analysis ignores the magnitude of changes and observes only the direction of changes in a given time series.

Run Test for Randomness

A run is defined as a succession of identical symbols. The total number of runs in

any given size sample indicates whether the sample is random or not. Very few runs would be an indication of a pattern or a trend. Too many runs would also cast doubt the randomness of the sample. For example, in an experiment of 10 tosses of a coin, if we got the sequence such as HHHHHTTTTT, making 2 runs or on the other hand, if we got HTHTHTHTHT, which is 10 runs, then both these outcomes would not be considered as random.

The concept of '+' or '-' also given us the direction of change from an established standard. For example, or if we wanted to know whether the stock market price changes are random in nature, or whether there is a trend or a pattern, this could give us a very good idea. Let us assume that for given 10 consecutive months, the stock market index was increasing every month compared to the previous month, so that a trend would be established such that there would be only 1 run consisting of 10=s. Accordingly a '+' would be considered a change from an established value in one direction and a '-' would be considered a change in the other direction.

Now, if the samples are small is size, so that n_1 and n_2 are less than or equal to 20 each, then we can test the null hypothesis that the occurrences of pluses and minuses are random by comparing our value of 'r' with the critical value of 'r' given in the appropriate table at a pre-determined level of significance. If there were too few runs so that the value of 'r' is small, the null hypothesis would be rejected. Similarly, if there were too many runs of 'r' must be compared with two table value of less than as well as more than critical value of 'r'.

CHAPTER -IV

DATA PRESENTATION AND ANALYSIS

This chapter deals with the presentation, analysis and interpretation of data collected from primary and secondary sources following the research methodology in order to fulfill the objective of the study. Secondary sources include official quotations of share prices, publication of SEBON & NEPSE and annual reports of respective companies etc. Primary sources include the responses of questionnaires from professionals and general investors.

In this course of analysis data gathered from various sources have been inserted in the tabular form in the annex. By using financial as well as statistical tools, the data has been analyzed. The result of the computation has also been summarized in appropriate table. The samples of the computation of each model have been included in the annexes.

Basically, the following analysis has been carried out.

-) Correlations Coefficient Analysis
-) Simple regression Analysis
-) Multiple Regression Analysis
-) Run Test
-) Primary Data Analysis

Due to unavailability of data, only the sampled companies whose sufficient data is available have been taken for analysis.

4.1 Correlation Coefficient Analysis

Table 4.1
Correlation Coefficient Analysis between MPS and
Various Financial Indicators

| S.N | Name of the Company | EPS | | NWPS | | DPS | |
|-----|----------------------------------|------|------|--------|--------|--------|--------|
| 1 | Nabil Bank Ltd | 0.81 | 0.65 | 0.87 | 0.76 | 0.85 | 0.72 |
| 2 | Nepal Investment Bank | 0.90 | 0.80 | (0.12) | 0.015 | (0.13) | 0.018 |
| 3 | Standard Chartered Bank | 0.80 | 0.64 | 0.096 | 0.0092 | (0.44) | 0.196 |
| 4 | Himalayan Bank Ltd | 0.69 | 0.47 | 0.530 | 0.280 | 0.333 | 0.111 |
| 5 | Nepal SBI Bank Ltd | 0.96 | 0.93 | 0.801 | 0.642 | 0.922 | 0.852 |
| 6 | Everest Bank Ltd | 0.95 | 0.90 | 0.956 | 0.912 | 0.088 | 0.0077 |
| 7 | Bank of Kathmandu | 0.78 | 0.61 | (0.27) | 0.071 | 0.883 | 0.780 |
| 8 | Nepal Development Bank | 0.19 | 0.04 | (0.10) | 0.010 | 0 | 0 |
| 9 | Development Credit Bank | 0.14 | 0.02 | 0.13 | 0.018 | (0.10) | 0.010 |
| 10 | NIDC Capital Markets | 0.76 | 0.58 | 0.78 | 0.60 | (0.44) | 0.195 |
| 11 | Nepal Merchant Banking & Finance | 0.61 | 0.37 | 0.76 | 0.58 | (0.54) | 0.288 |

Source: For details, see Annex 1 & 2

Table 4.1 is presented in order to analyze the relationship between MPS and various financial indicators, their significance test and coefficient of determination. As we know the correlation coefficient helps to determine whether there exists any relationship among different variables, statistical test is done to test the significance of correlation coefficient and the coefficient of determination to explain the variation in dependent variable due to the variation in independent variable.

Nabil Bank Limited

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.81, 0.87 and 0.85 respectively. There exists positive correlation of MPS with EPS, NWPS and

DPS which is statistically significant at 5 % level of significance. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.65, 0.76 & 0.72 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 65%, 76% and 72% respectively.

Nepal Investment Bank

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.90 , -0.12 and -0.13 respectively. There exists high positive correlation of MPS with EPS which is statistically significant at 5 % level of significance. Where as there exist low negative correlation of MPS with NWPS and DPS which indicates that they move reversely to each other and there exists low negative correlation of MPS with NWPS & DPS which is not statistically significant. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.80 , 0.015 & 0.018 respectively Which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 80% ,1.5% and 1.80% respectively. The variation of NWPS and DPS explains almost no change in MPS i.e 1.5% and 1.8% of the appositive variation in MPS and the variation of DPS also explains very nominal change in MPS.

Standard Chartered Bank

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.80, 0.096 and -0.44 respectively. There exists high positive correlation of MPS with EPS; low positive correlation of MPS with NWPS and low negative correlation of MPS with DPS. High positive correlation is statistically significant at 5 % level of significance. low positive and negative correlation of MPS with NWPS and DPS which is not statistically significant. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.64, 0.0092 & 0.196 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and

DPS which are 64%, 0.92% and 19.6% respectively. The variation of NWPS explains almost no change in MPS i.e. 0.92% of the appositive variation in MPS and the variation of DPS also explains very nominal change in MPS i.e 19.6% of the variation in MPS.

Himalayan Bank Limited

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.69, 0.530 and 0.333 respectively. There exists positive and low positive correlation of MPS with EPS, NWPS and DPS which is not statistically significant. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.47, 0.280 & 0.111 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 0.47, 0.280 & 0.111 respectively.

Nepal SBI Bank Limited

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.96, 0.801 and 0.922 respectively. There exists high positive correlation of MPS with EPS & NWPS which is statistically significant at 5 % level of significance. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.93, 0.642 & 0.852 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 93%, 64.20% and 85.20% respectively.

Everest Bank

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.95, 0.956 and 0.088 respectively. There exists high positive correlation of MPS with EPS & NWPS which is statistically significant at 5 % level of significance and low positive correlation of MPS with DPS which is not statistically significant. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.90, 0.912 &

0.0077 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 90%, 91.20% and 0.77% respectively. The variation of DPS explains almost no change in MPS i.e 0.77% of the apposite variation in MPS and the variation of DPS also explains very nominal change in MPS.

Bank of Kathmandu

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.78, -0.27 and 0.883 respectively. There exists high positive correlation of MPS with EPS & DPS which is statistically significant at 5 % level of significance and low negative correlation of MPS with NWPS which is not significant. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.61, 0.071 & 0.780 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 61%, 7.10% and 78% respectively. The variation of NWPS explains almost no change in MPS i.e 7.10% of the apposite variation in MPS and the variation of NWPS also explains very nominal change in MPS.

Nepal Development Bank

The correlation coefficient of MPS with EPS and, NWPS are 0.19, -0.10 respectively. There exists low positive and low negative correlation of MPS with EPS & NWPS which is not statistically significant significance. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.04, 0.010 respectively which imply that the variation in MPS is explained by the independent variables EPS, and NWPS which are 4%, and 1% respectively. The variation of EPS and NWPS explains almost no change in MPS i.e. 4% and 1% of the apposite variation in MPS and the variation of NWPS also explains very nominal change in MPS.

Development Credit Bank Limited

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.14, 0.13 and -0.10 respectively. There exists low positive and low negative correlation of MPS with EPS & NWPS which is not statistically. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.02, 0.018 & 0.010 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 2%, 1.80% and 1.0% respectively. The variation of EPS, NWPS and DPS explains almost no change in MPS i. 2%, 1.80% and 1.0% of the apposite variation in MPS and the variation of EPS, NWPS and DPS also explains very nominal change in MPS.

NIDC Capital Market

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.76, 0.78 and -0.44 respectively. There exists high positive and low negative correlation of MPS with EPS & NWPS which is statistically significant at 5 % level of significance. and low negative correlation is not statistically significant. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.58, 0.60 & 0.195 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 58%, 60% and 19.5% respectively.

Nepal Merchant Banking and Finance

The correlation coefficient of MPS with EPS, NWPS and DPS are 0.61, 0.76 and -0.54 respectively. There exists positive, high positive and negative correlation of MPS with EPS & NWPS which is statistically significant at 5 % level of significance and negative correlation is not statistically significantly. The coefficient of determination of MPS with EPS, NWPS and DPS are 0.37, 0.58 & 0.288 respectively which imply that the variation in MPS is explained by the independent variables EPS, NWPS and DPS which are 37%, 0.58% and 28.8%

respectively.

Simple Regression Analysis

Regression Equation of MPS on EPS (MPS = a+b EPS)

Regression Analysis is a statistical technique for analyzing the relationship between two or more variables, and which is used to predict the value of one variable from the other or others.

In this study regression equation of MPS on EPS ,MPS on NWPS and MPS on DPS is conducted to analyze the relationship between MPS with different financial indicators .for the analytical explanation of the regression analysis the formula described in research methodology chapter is used.

4.2 Regression Equation of MPS on EPS by using the method of t-test

In this study, regression equation of MPS on EPS is analyzed using the method of t-test for this study; following hypothesis is created under Regression Analysis.

Null Hypothesis (H₀) : MPS is independent of the EPS

Alternative Hypothesis (H₁) : MPS is independent of the EPS

The below table tabulates the regression analysis and its findings

Table 4.2

Regression Equation of MPS on EPS by using the method of t-test

| SN | Commercial Bank | Regression Coefficient | | r^2 | Calculate d value of t- test | Tabulated value of t-test | Significance |
|----|-----------------|------------------------|----------|--------|------------------------------|---------------------------|---------------|
| | | Constant (a) | Slop (b) | | | | |
| 1 | NBL | 73.19 | 0.0147 | 0.656 | 2.762 | 2.776 | Insignificant |
| 2 | NIBL | 18.49 | 0.0279 | 0.8032 | 4.04 | 2.776 | Significant |
| 3 | SCBL | 134.16 | 0.0068 | 0.6362 | 2.64 | 2.776 | Insignificant |
| 4 | HBL | 41.06 | 0.0125 | 0.4729 | 1.895 | 2.776 | Insignificant |
| 5 | SBIBL | 2.261 | 0.030 | 0.931 | 7.361 | 2.776 | Significant |
| 6 | EBL | 27.14 | 0.0227 | 0.9044 | 6.151 | 2.776 | Significant |
| 7 | BOKL | 12.11 | 0.027 | 0.613 | 2.518 | 2.776 | Insignificant |
| 8 | NDBL | -122.72 | 0.5663 | 0.0353 | 0.3828 | 2.776 | Insignificant |
| 9 | DCBL | 23.27 | 0.0291 | 0.0207 | 0.2910 | 2.776 | Insignificant |
| 10 | NIDCCML | 8.7855 | 0.1134 | 0.5819 | 2.3596 | 2.776 | Insignificant |
| 11 | NMBFL | -1.4369 | 0.0999 | 0.3688 | 1.529 | 2.776 | Insignificant |

Source: Refer Annex -II for detailed calculation

Table 4.2 shows the regression equation between MPS and EPS of the sample Company by using the method of t-test. The above table clearly shows that the Regression Coefficient (b) of all the Company under study is positive which proves that the MPS is a function of EPS .This also indicates that there exists positive relationship between MPS and EPS. The Regression Coefficient (b) is highest for NDBL i.e 0.5663 whereas it is lowest for SCBL i.e 0.0068. It indicates that one unit increase in EPS will lead to 0.5663 units increase in MPS of the NDBL whereas one unit increase in EPS of the SCBL will lead to 0.0068 units increase in MPS holding the other entire variable constant.

The Coefficient of Determination (r^2) for SBI, EBL and NIBL is 0.931, 0.9044

and 0.8032 which shows a strong relationship between MPS and EPS. This indicates that 93.1% , 90.44% and 80.32% variability in MPS of SBI,EBL and NIBL respectively can be explained by EPS whereas the remaining 6.9%,9.56% and 19.68% variability in MPS of the respective banks is due to other unexplained factors. The Coefficient of Determination (r^2) of NBL, SCBL, HBL BOK, NDBL, DCBL NIDCCML and NMBFL is 0.656, 0.6362, 0.4729, 0.613, 0.0353, 0.0207, 0.5819 and 0.3688 which is moderately explained by EPS. The calculated value and tabulated value under t-test at 5% level of significance is presented in the above table. The table shows that in case of NIBL, EBL and SBI, MPS and EPS is significantly correlated whereas in case of NBL, SCBL, HBL, BOK, NDBL, DCBL NIDCCML and NMBFL it is not significantly correlated. This demonstrates that the MPS of the most of the Company is not influenced or determined by EPS which does not prove to be a healthy financial indicator for investment.

4.3 Regression Equation of MPS on NWPS by using the method of t-test

In this study, regression equation of MPS on EPS is analyzed using the method of t-test for this study; following hypothesis is created under Regression Analysis.

Null Hypothesis (H_0) : MPS is independent of the NWPS

Alternative Hypothesis (H_1) : MPS is independent of the NWPS

The below table tabulates the regression analysis and its findings.

Table 4.3

Regression Equation of MPS on NWPS by using the method of t-test

| SN | Commercial Bank | Regression Coefficient | | r^2 | Calculated value of t- test | Tabulated value of t-test | Significance |
|----|-----------------|------------------------|----------|--------|-----------------------------|---------------------------|---------------|
| | | Constant (a) | Slop (b) | | | | |
| 1 | NBL | 254.08 | 0.0367 | 0.7646 | 3.60 | 2.776 | Significant |
| 2 | NIBL | 253.24 | (0.0117) | 0.0146 | 0.244 | 2.776 | Insignificant |
| 3 | SCBL | (2508.03) | 0.299 | 0.921 | 6.857 | 2.776 | Significant |
| 4 | HBL | 215.15 | 0.0244 | 0.2807 | 1.249 | 2.776 | Insignificant |
| 5 | SBIBL | 129.97 | 0.0396 | 0.6420 | 2.677 | 2.776 | Insignificant |
| 6 | EBL | 137.55 | 0.064 | 0.912 | 6.44 | 2.776 | Significant |
| 7 | BOKL | 207.21 | (0.0157) | 0.071 | 0.554 | 2.776 | Insignificant |
| 8 | NDBL | 81.72 | -0.5220 | 0.0101 | 0.2024 | 2.776 | Insignificant |
| 9 | DCBL | 207.1554 | 0.2359 | 0.0181 | 0.2715 | 2.776 | Insignificant |
| 10 | NIDCCML | 45.4683 | 0.3619 | 0.6019 | 2.4591 | 2.776 | Insignificant |
| 11 | NMBFL | -58.6565 | 0.7593 | 0.5850 | 2.3745 | 2.776 | Insignificant |

Source: Annex -II for detailed calculation

Table 4.3 shows the regression equation between MPS and NWPS of the sample Companies by using the method of t-test. The above table clearly shows that the Regression Coefficient (b) of all Company expects NIBL, BOKL and NDBL are positive. This indicates that there exists positive relationship between MPS and NWPS for most Company expect NIBL, BOKL and NDBL. The Regression Coefficient (b) is highest for NMBFL i.e 0.7593 which indicates that one unit increase in NWPS for SCBL will lead to 0.7593 units increase in MPS holding all the other variables constant. In case of NIBL, BOKL and NDBL the value of Regression Coefficient is negative i.e (0.0117), (0.0157) and (0.5220) respectively which indicates that there exists negative relationship between MPS and NWPS. It shows that if NWPS increase by one unit than MPS will decrease by (0.0117),

(0.0157) and (0.5220) units respectively and vice-versa for NIBL, BOKL and NDBL.

The Coefficient of Determination (r^2) is strong for SCBL, EBL, NBL, SBI and NIDCCML which is 0.921, 0.912, 0.7646, 0.6420 and 0.6019 respectively. This indicates that 92.1%, 91.2%, 76.46%, 64.20% and 60.19% variability in MPS for the SCBL, EBL SBI and NIDCCML respectively can be explained by NWPS whereas the remaining 7.9%, 8.8%, 23.54, 35.8 % and 39.81% variability in MPS of the respective banks is due to the effect of other unexplained factors. Similarly, the Coefficient of Determination (r^2) for SCBL, EBL, NBL, SBIBL, NIDCCML & NMBFL is 0.921, 0.912, 0.7646, 0.6420, 0.6019, and 0.5850. This indicates that the Co-efficient of Determination (r^2) is moderately strong by NWPS and remaining Company indicates that the Co-efficient of Determination (r^2) is weak by NWPS.

The calculated value and tabulated value under t-test at 5% level of significance is presented in the above table. The table shows that in case of SCBL, NBL and EBL, MPS and NWPS is significantly correlated whereas in case of NIBL, BOK, HBL, SBI, NDBL, DCBL, NIDCCML and NMBFL, MPS and NWPS is not significantly correlated. This demonstrates that the MPS of the most of the Company is not affected by increase or decrease in NWPS which is not a positive financial indicators in the stock market..

4.4 Regression Equation of MPS on DPS by using the method of t-test

In this study, regression equation of MPS on EPS is analyzed using the method of t-test for this study; following hypothesis is created under Regression Analysis.

Null Hypothesis (H_0) : MPS is independent of the DPS

Alternative Hypothesis (H_1) : MPS is independent of the DPS

The below table tabulates the regression analysis and its findings.

Table 4.4
Regression Equation of MPS on DPS by using the method of t-test

| SN | Commercial Bank | Regression Coefficient | | r^2 | Calculated value of t- test | Tabulated value of t-test | Significance |
|----|-----------------|------------------------|----------|---------|-----------------------------|---------------------------|---------------|
| | | Constant (a) | Slop (b) | | | | |
| 1 | NBL | 42.93 | 0.0127 | 0.719 | 6.036 | 2.776 | Significant |
| 2 | NIBL | 15.08 | (0.0028) | 0.0181 | 0.271 | 2.776 | Insignificant |
| 3 | SCBL | 120.92 | (0.0045) | 0.1965 | 0.988 | 2.776 | Insignificant |
| 4 | HBL | 1.10 | 0.0119 | 0.1110 | 0.7068 | 2.776 | Insignificant |
| 5 | SBIBL | (15.42) | 0.0496 | 0.852 | 4.799 | 2.776 | Significant |
| 6 | EBL | 11.22 | 0.0012 | 0.0077 | 0.177 | 2.776 | Insignificant |
| 7 | BOKL | 6.85 | 0.0109 | 0.781 | 3.782 | 2.776 | Significant |
| 8 | NDBL | 0 | 0 | 0 | 0 | 2.776 | Insignificant |
| 9 | DCBL | 6.4109 | -0.0033 | 0.01006 | -0.2016 | 2.776 | Insignificant |
| 10 | NIDCCML | 4.9356 | -0.01597 | 0.1949 | 0.9839 | 2.776 | Insignificant |
| 11 | NMBFL | 50.2155 | -0.1519 | 0.2881 | -1.2723 | 2.776 | Insignificant |

Source: Annex -II for detailed calculation

Table 4.4 shows the regression equation between MPS and DPS of the sample Companies by using the method of t-test. The above table clearly shows that the Regression Coefficient (b) of Company expects NIB, SCBL, DCBL NIDCCML & NMBFL is positive. This indicates that there exists positive relationship between MPS and DPS for Companies except NIB, SCBL, DCBL, and NIDCCML & NMBFL. The Regression Coefficient (b) is highest for SBI i.e 0.0496 which indicates that one unit increase in DPS of SBI will lead to 0.0496 units increase in MPS holding all the other variable constant. In case of NIBL, SCBL, DCBL NIDCCML and NMBFL the value of Regression Coefficient is Negative i.e (0.0028), (0.0045), -0.0033, -0.01597 & -0.1519 respectively which indicates that there exists negative relationship between MPS and DPS. It indicates that if DPS

by one unit than MPS will decrease by (0.0028), (0.0045), -0.0033, -0.01597 & -0.1519 units respectively and vice-versa.

The Coefficient of Determination (r^2) for SBI, BOK and NBL which is 0.852, 0.781 and 0.719 respectively. This indicates that 85.2%, 78.1% and 71.9% variability in MPS for the SBI, BOK and NBL respectively can be explained by DPS whereas the remaining 14.8%, 21.9% and 28.1% variability in MPS of the respective banks is due to the effect of other unexplained factors, Similarly the Coefficient of Determination (r^2) for SCBL, HBL, NBL & EBL is 0.1965, 0.1110, 0.0181 and 0.0077 respectively. This indicates that Coefficient of Determination (r^2) is weak for SCBL, HBL, NIBL and EBL.

The calculated value and tabulated value under t-test at 5% level of significance is presented in the above table. The table shows that in case of NBL, BOK and SBI MPS and DPS is significantly correlated whereas in case of NIBL, SCBL, EBL, HBL, NDBL, DCBL, NIDCCML & NMBFL, MPS and DPS is not significantly correlated. This indicates that the MPS for most of the company is not affected by increase or decrease in DPS which is not a positive financial indicator in the stock market.

4.4.1 Multiple Regression Analysis

Multiple Regression Analysis is a statistical technique for analyzing the relationship between several independent or predictor variables and a dependent or criterion variable. In this study, Multiple Regression Equation of MPS on EPS & NWPS, MPS on NWPS and DPS is conducted to analyze the relationship between MPS with different multiple financial indicators. For the analytical explanation of the Multiple Regression Analysis the formula described in research methodology chapter is used.

4.4.2 Multiple Regression of Market Price on EPS and NWPS

In this study, regression equation of MPS on EPS and NWPS is analyzed. For this study; following hypothesis is created..

Null Hypothesis (H₀) : MPS is independent of the EPS & NWPS

Alternative Hypothesis (H₁) : MPS is independent of the EPS & NWPS

The below table tabulates Multiple Regression analysis and its findings.

Table 4.5
Multiple Regression Equation of MPS on EPS & NWPS

| S N | Commer cial Bank | Regression Coefficient | | | r ² | Calculated value of (F _{2,3}) at 5% level of significance | Tabulated value of (F _{2,3}) at 5% level of significance | Significance |
|--------|---------------------|------------------------|---------------------------|---------------------------|----------------|--|---|---------------|
| | | Constant (a) | Slop (b ₁) | Slop (b ₂) | | | | |
| 1 | NBL | -8016.29 | -86.32 | 57.56 | 0.8435 | 8.0848 | 9.5521 | Insignificant |
| 2 | NIBL | -585.29 | 29.48 | 0.94 | 0.8109 | 6.4348 | 9.5521 | Insignificant |
| 3 | SCBL | -10024.86 | -6.31 | 32.28 | 0.9226 | 17.8673 | 9.5521 | Significant |
| 4 | HBL | -4936.55 | 44.89 | 14.78 | 0.9198 | 17.20 | 9.5521 | Significant |
| 5 | SBIBL | 404.49 | 35.24 | -3.42 | 0.9378 | 22.6349 | 9.5521 | Significant |
| 6 | EBL | -1514.86 | 18.44 | 7.93 | 0.9293 | 19.7075 | 9.5521 | Significant |
| 7 | BOKL | 1799.381 | 28.43 | -10.14 | 0.9304 | 20.0605 | 9.5521 | Significant |
| 8 | NDBL | 130.43 | 0.19 | -0.08 | 0.12 | 0.14 | 9.5521 | Insignificant |
| 9 | DCBL | 157.35 | 10.58 | -0.90 | 0.84 | 1.71 | 9.5521 | Insignificant |
| 10 | NMBFL | 124.21 | -11.19 | 2.60 | 0.86 | 2.01 | 9.5521 | Insignificant |

Table 4.5 shows multiple regression equation of MPS on EPS and NWPS of the sample companies.

The Coefficient of Determination (r²) for SBI, BOK, EBL, SCBL, HBL, NMBFL, DCBL, NBL and NIBL is 0.9378, 0.9304, 0.9293, 0.9226, 0.9198, 0.86, 0.8435, 0.84 and 0.8109 and it indicates a strong relationship between MPS with EPS and

NWPS .This indicates that 93.78%, 93.04%, 92.93%, 92.26%, 91.98%,84.35% and 81.09% variability in MPS of SBI,BOK,EBL,SCBL,HBL,NBL and NIBL respectively can be explained jointly by EPS and NWPS whereas the remaining 6.22%, 6.94%, 7.07%, 7.74%, 8.02%, 15.65% and 18.91% variability in MPS of the respective companies is due to other unexplained factors. The Coefficient of Determinants (r^2) of NDBL is 0.12 which shows that only 12% variability in the MPS is explained by EPS and NWPS together whereas the remaining 88% variability is explained by other factors. This shows that the MPS is a function of EPS and NWPS for most company under study.

The calculated value and tabulated value under F-test at 5% level of significance is presented in the above table. The table shows that for all the company under study except NIBL, NBL, NDBL, DCBL and NMBFL the calculated value is greater than tabulated value i.e. Null Hypothesis is rejected. It shows that MPS is significantly correlated with the EPS and NWPS together for all the company except NIBL, NBL, DCBL and NMBFL This demonstrates that the MPS of some of the company is influenced or determined by EPS and NWPS together whereas the MPS of NIBL, NBL, NDBL ,DCBL and NMBFL is not influenced or determined by EPS and NWPS together.

4.4.3 Multiple Regression of Market Price on NWPS & DPS

In this study, regression equation of MPS on EPS and NWPS is analyzed. For this study; following hypothesis is created..

Null Hypothesis (H_0) : MPS is independent of NWPS & DPS

Alternative Hypothesis (H_1) : MPS is independent of NWPS & DPS

The below table tabulates Multiple Regression analysis and its findings.

Table 4.6
Multiple Regression Equation of MPS on NWPS & DPS

| S N | Commer cial Bank | Regression Coefficient | | | r^2 | Calculated value of ($F_{2,3}$) at 5% level of significance | Tabulated value of ($F_{2,3}$) at 5% level of significance | Significance |
|--------|---------------------|------------------------|-------------------|-------------------|--------|--|---|---------------|
| | | Constant (a) | Slop (b_1) | Slop (b_2) | | | | |
| 1 | NBL | -6800.32 | 35.46 | -41.61 | 0.7745 | 5.15 | 9.5521 | Insignificant |
| 2 | NIBL | 2144.42 | -3.69 | -17.15 | 0.0921 | 0.1521 | 9.5521 | Insignificant |
| 3 | SCBL | -7243.03 | 29.08 | -21.96 | 0.9673 | 44.47 | 9.5521 | Significant |
| 4 | HBL | -5220.75 | 24.47 | 28.18 | 0.93 | 20.09 | 9.5521 | Significant |
| 5 | SBIBL | -397.419 | 5.15 | 13.63 | 0.8806 | 11.06 | 9.5521 | Significant |
| 6 | EBL | -2226.97 | 14.88 | 18.43 | 0.9776 | 65.58 | 9.5521 | Significant |
| 7 | BOKL | 563.175 | -4.71 | 72.18 | 0.8575 | 9.02 | 9.5521 | Insignificant |
| 8 | NDBL | 130.43 | 0.19 | | | 0.14 | 9.5521 | Insignificant |
| 9 | DCBL | 157.35 | 10.58 | -3.64 | | 1.71 | 9.5521 | Insignificant |
| 10 | NMBFL | 124.21 | -11.19 | 1.95 | | 2.01 | 9.5521 | Insignificant |

Source: Annex-III for detailed calculation

Table 4.6 shows multiple regression equation of MPS on NWPS and DPS of the sample companies.

The Coefficient of Determination (r^2) for EBL, SCBL, HBL, SBI and BOK is 0.9776, 0.9673, 0.93, 0.8806 and 0.8575 respectively which indicates a strong relationship between MPS with NWPS & DPS. This indicates that 97.76%, 96.73%, 93%, 88.06%, and 85.75% variability in MPS of SCBL, EBL, HBL, SBI and BOK respectively can be explained jointly by NWPS and DPS whereas the remaining 2.24%, 3.27%, 7%, 11.94%, and 14.25% variability in MPS of the respective Companies is due to other unexplained

factors. The Coefficient of Determinants (r^2) of EBL, SCBL, HBL, SBI and BOK is 0.9776, 0.9673, 0.93, 0.8806 and 0.8575 respectively which shows moderate relationship of MPS with NWPS & DPS. This indicates that the 0.9776, 0.9673, 0.93, 0.8806 and 0.8575 variability in the MPS is explained by NWPS and DPS together whereas the remaining 2.24%, 3.27%, 7%, 11.94% & 14.25 variability is explained by other factors.

The Coefficient of Determination (r^2) for NIBL is 0.0921 which indicates very poor relationship of MPS with NWPS and DPS. It shows that only 9.21% variability of MPS is explained by NWPS and DPS and the remaining 90.79% variability is due to other factor. This shows that the MPS is a function of NWPS and DPS for most of the company.

The calculated value and tabulated value under F-test at 5% level of significance is presented in the above table. The table shows that for SCBL, EBL, HBL, and SBIBL the calculated value is greater than tabulated value i.e Null Hypothesis is rejected whereas for NIBL, NBL, BOK, NDBL, DCBL and NMBFL the calculated value is less than tabulated value. Null hypothesis is accepted. It shows that for SCBL, EBL, HBL, and SBIBL the MPS is significantly correlated with NWPS and DPS together whereas for NIBL, NBL, BOK, NDBL, DCBL and NMBFL the MPS is not significantly correlated with NWPS and DPS together. This demonstrates that the MPS of SCBL, EBL, HBL, and SBIBL is influenced or determined by NWPS and DPS together whereas it is not influenced for NIBL, NBL, BOK, NDBL, DCBL and NMBFL.

4.4.4 Risk and Return Analysis

Risk and Return analysis is considered to be one of the best methods of analyzing the behavior of price of the shares in the market. Risk measures the degree of volatility in the market price movements of individual shares. The higher the

magnitude of fluctuations, higher will be the degree of risk. Though, it is difficult to measure risk, some statistical tools like standard deviation, coefficient of variation and beta coefficient are used to measure the risk involved in individual security. For the study year-end closing price of the shares and dividend announcement is taken. Expected Return, Standard Deviation and Coefficient of Variation is calculated by using the formula described in research methodology chapter.

The calculated value of expected realized return, standard deviation and coefficient of variation of each finance company are presented in the table.

Table 4.7
Expected Return, Standard Deviation and C.V of the
Commercial Bank and Company

| S. N | Companies | Expected Return(R_j) | Required rate of return(K_j) | Standard Deviation(σ_j) | CV_j | Remarks |
|------|-----------|--------------------------|----------------------------------|----------------------------------|--------|----------------------------|
| 1 | NBL | 60% | 19 % | 0.3848 | 0.6442 | $R_j > K_j$, Under priced |
| 2 | NIBL | 22 % | 24 % | 0.2519 | 1.1304 | $R_j < K_j$, Overpriced |
| 3 | SCBL | 38 % | 32 % | 0.2273 | 0.5969 | $R_j > K_j$, Under priced |
| 4 | HBL | 16 % | 26 % | 0.2549 | 1.6445 | $R_j < K_j$, Overpriced |
| 5 | SBIBL | 36 % | 24 % | 0.4966 | 1.3857 | $R_j > K_j$, Under priced |
| 6 | EBL | 48 % | 36 % | 0.2283 | 0.4790 | $R_j > K_j$, Under priced |
| 7 | BOKL | 50 % | 31 % | 0.3954 | 0.7884 | $R_j > K_j$, Under priced |
| 8 | NDBL | 3 % | 23 % | 0.2729 | 0 | $R_j < K_j$, Overpriced |
| 9 | DCBL | 49 % | 23 % | 0.4151 | 0.8540 | $R_j > K_j$, Under priced |
| 10 | NIDCCML | 24 % | 28 % | 0.3551 | 1.4967 | $R_j < K_j$, Overpriced |
| 11 | NMBFL | 13 % | 14 % | 0.2538 | 1.8978 | $R_j < K_j$, Overpriced |

Source: Annex-IV for detailed Calculation

Where

R = Average realized rate of return & K_i = required rate of return

$$K_f = R_f + (R_m - \bar{R}_f) \times \beta$$

Where

R_f = Risk free rate of return

\bar{R}_m = Average market rate of return

β = Beta coefficient

Although the sample of 25 companies have been taken for the study, due to non availability of data only the samples of 11 companies have been taken for the risk and return analysis.

The above table shows the expected return, required rate of return, standard deviation and coefficient of Variation. It shows that the expected return is highest for NBL and lowest for NDBL among the sample of companies. It indicates that the investors who seek profit maximization will invest in stocks of NBL bank.

The above table also shows standard deviation of the stocks of the sample of the company. The S.D is highest for SBI and lowest for SCBL based on S.D, The stock of SBI is most risky whereas that of SCBL is least risky to invest. Standard deviation is a strong statistical device to measure the total risk involved in an investment which consist of both market risk and diversifiable risk. It also explains the volatility of the expected rate of return.

The coefficient of variation measures the risk per unit of return. The CV is highest for NMBFL, lowest for EBL and no SD is NDBL. It can be interpreted that the NMBFL is the least appreciable company because it is most risky due to high CV whereas EBL is most appreciable company because it is least risky due to low CV.

The required rate of return is the minimum expected rate of return needed to induce an investor to invest his/her fund. It is always more than risk less rate of

return. Normally when an individual's investment is giving higher return. i.e the realized rate of return is greater than its required rate of return, this type of investment is known as under priced investment (asset). Such under priced assets should be purchased. On the other hand, if the realized rate of return is lesser than the required rate of return of particular asset. it is said to be overpriced asset. Such asset should not be purchased instead, if one is holding such asset, it should be sold immediately.

From the above table, the realized rate of return is less than the required rate of return for all the selected sample companies except NIBL HBL, NDBL, NIDCCML & NMBFL ie. so the common stocks of these companies are worth purchasing as they are realizing greater rate of return than needed so its called overpriced. But in the case of other companies the required rate of return is higher than the realized rate of return. So the common stocks of these companies are not worth buying so it's called under priced. .Instead, if one holds the stocks of these companies, it is better to sell them off.

Table 4.8

Beta Coefficient of the Sample Company

| S.N | Company | Beta Coefficient | Rank |
|-----|---------|------------------|------------------|
| 1 | NBL | 1.286 | 2 nd |
| 2 | NIBL | 0.3718 | 10 th |
| 3 | SCBL | 0.6355 | 9 th |
| 4 | HBL | 0.8680 | 5 th |
| 5 | SBIBL | 1.5042 | 1 st |
| 6 | EBL | 0.6015 | 8 th |
| 7 | BOKL | 0.8529 | 6 th |
| 8 | NDBL | 0.8060 | 7 th |
| 9 | DCBL | 1.2221 | 3 rd |
| 10 | NIDCCML | 0.9160 | 4 th |
| 11 | NMBFL | 0.0427 | 11 th |

Table 4.8 demonstrate the Beta Coefficient of the companies under study during the study period i.e. FY 01/02 to F.Y 06/07. In this study, only SBI,NBL and DCBL have beta coefficient greater than one which indicates that the stock price of SBI,NBL and DCBL is more volatile I comparison to the similar average stock in the market. SBI has the highest beta coefficient i.e 1.5042 which indicates that the stock of SBI is 50.42% more volatile than the average stock in the market. Similarly, NBL whose beta is 1.286 is 28.6% more volatile and DCBL with beta coefficient 1.2221is 22.21% more volatile than the similar average stock in the market. The stocks of SBI,NBL and DCBL are more aggressive stocks in comparison to other stocks in the market and tend to rise and fall faster than other stocks in the NEPSE.

The table also shows that the remaining Companies under study has beta less than 1. HBL,BOK,SCBL ,EBL ,NIBL, NDBL, NIDCCML & NMBFL are less volatile stocks out of which NMBFL is least volatile stock as compared to other similar stocks in the market. It can be interpreted that the share price of HBL,BOK,SCBL ,EBL ,NIBL, NDBL, NIDCCML & NMBFL is expected to fall or rise more slowly than the overall NEPS.

A conservative investor whose main concern is preservation of capital will invest in stocks of HBL,BOK,SCBL ,EBL ,NIBL, NDBL, NIDCCML & NMBFL whereas one willing to take high risks in an effort to earn high rewards will invest in an effort to earn high rewards will invest in stocks of SBI,NBL and DCBL.

4.4.5 Run Test

Run test is a non -parametric test that checks randomness of hypothesis for a two-valued data sequence. Run Test is used for testing the randomness of sequence of sample events on the basis of the order of sample events. This technique is based on the order of sequence in which the individual scores or observation originally

were obtained. In this search, Run Test is applied to test whether the MPS of the stocks of the sample commercial banks is random. Run and Z value is calculated by using the formula described in search methodology chapter.

For conducting Run Test the study following hypothesis is developed.

Null Hypothesis (H_0) : The MPS of the stocks of the sample commercial banks is random

Alternative Hypothesis (H_1) : The MPS of the stocks of the sample commercial banks is not random

The below table is constructed for tabulating the findings and result

Table 4.9
Result of Run test of the MPS of the company

| S.N | Company | Sample Size | r | N_1 | N_2 | Cal. Value | Tab. Value | Decision |
|-----|---------|-------------|---|-------|-------|------------|------------|-------------------|
| 1 | NBL | 34 | 4 | 17 | 17 | -4.876 | 1.96 | MPS is not random |
| 2 | NIBL | 34 | 6 | 17 | 17 | -4.179 | 1.96 | MPS is not random |
| 3 | SCBL | 34 | 4 | 17 | 17 | -4.876 | 1.96 | MPS is not random |
| 4 | HBL | 34 | 6 | 18 | 16 | -4.174 | 1.96 | MPS is not random |
| 5 | SBIBL | 34 | 4 | 17 | 17 | -4.876 | 1.96 | MPS is not random |
| 6 | EBL | 34 | 4 | 17 | 17 | -4.876 | 1.96 | MPS is not random |
| 7 | BOKL | 34 | 4 | 17 | 17 | -4.876 | 1.96 | MPS is not random |
| 8 | NIC | 34 | 4 | 17 | 17 | -4.876 | 1.96 | MPS is not random |

Source: Annex-V for detailed calculation

Table 4.9 shows the Run Test of the MPS of the sample commercial banks. The Run Test has been conducted for 34 observations from the sample commercial banks. The table shows that the run of all the banks is four except NIBL and HBL which is six. Since the run of most of the banks is less which indicates that the fluctuation of MPS is less for most of the banks. Compared to most banks the

fluctuation of the NIBL and HBL is slightly higher than other banks under study

The table also shows the Z value of MPS. For large samples the Z statistics gives the probability of difference between the actual and expected number of runs. The tabulated value of Z is ± 1.96 at 5% level of significance. If the z value is greater than or equal to ± 1.96 the null hypothesis is rejected at 5% level of significance.

The Z value of the most of the banks under study at 5% level of significance is 4.876 and it is 4.179 for NIBL and 4.174 for HBL. The calculated value is greater than the tabulated value for all the commercial banks under study which shows that the null hypothesis is rejected and Alternative Hypothesis is accepted. This means that the observed number of run is less than the expected number of runs at observed number of run is less than the expected number of runs at observed significance level i.e 5% level of significance. This also signifies that change in the MPS of the commercial banks under study is not random and that the market over reacts to the available information.

4.5 Primary Data Analysis

Primary data are collected from shareholders by using questionnaires. The Main tool that is used in survey research is questionnaires. A questionnaire is a list of question designed to gather response from respondents on a given topic. Thus, A questionnaire is an efficient data collecting mechanism when the researcher has known what is required and how to measure the variables of interest.(Wolf & pant,1999:144) Here, the questionnaire survey method is used to analyze the "Share Price Behavior of Nepalese Capital Market". In this research study, 100 shareholders are taken for the survey.

1. Often, from which Market do you buy Stocks?

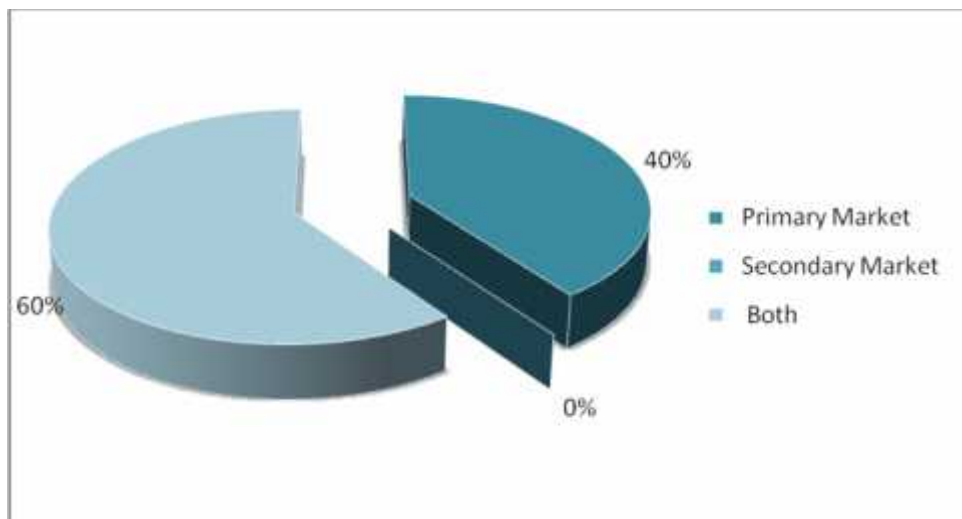
Table 4.10

Market Selection of Investors

| S.N | Market | Percentage (%) |
|-----|------------------|----------------|
| 1 | Primary Market | 40 |
| 2 | Secondary Market | 0 |
| 3 | Both | 60 |

Figure 4.1

Market Selection of Investors



During the period of study, various types of information were collected. In response to the question about the market selection, 60% of the respondents said that they buy stock from both the markets, primary and secondary. The remaining 40% respondents said that they buy stock from primary market only. There were no respondents who buy stock from secondary market only. The investors buy stock either from primary market only or from both the market, primary and secondary.

2. Why do you buy Stock?

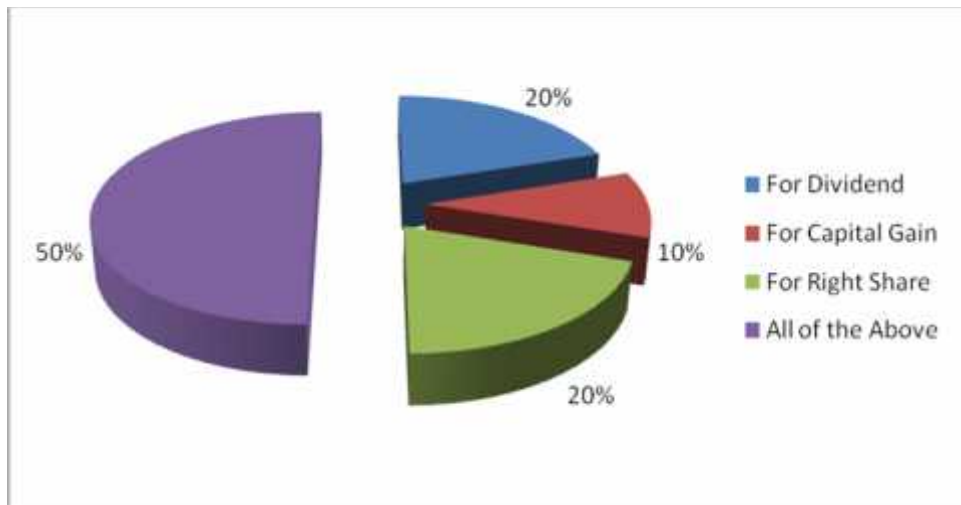
Table 4.11

Reason of buying Stocks by Nepalese Investors

| S.N | Reason | Percentage (%) |
|-----|------------------|----------------|
| 1 | For Dividend | 20 |
| 2 | For Capital Gain | 10 |
| 3 | For Right Share | 20 |
| 4 | All of the Above | 50 |

Figure 4.2

Reason of buying Stocks by Nepalese Investors



Most of the Nepalese investors buy stock for all of the reasons given above i.e. dividend, capital gain and right shares. Among the respondents, 50% said that they like to buy shares for all the reasons mentions in the questionnaire ,20% said that they like to make investment in shares for dividend, 10% said they like to make investment in shares for capital gain, and 20% said that they like to make investment in share for right shares.

3 In which of the following sectors do you want to invest in the shares?

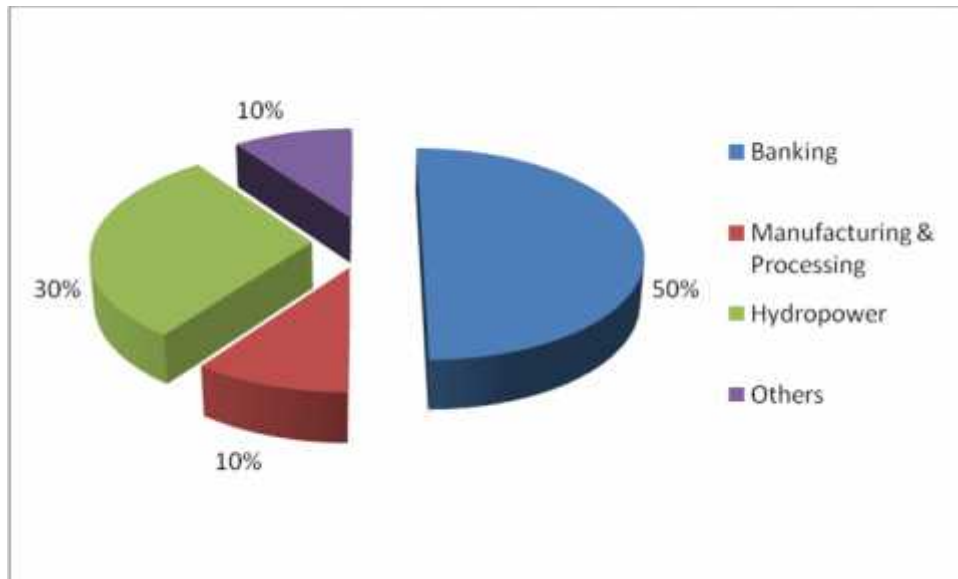
Table 4.12

Favorite Investment Sectors of Nepalese Investors

| S. No | Investment Sectors | Percentage (%) |
|-------|----------------------------|----------------|
| 1 | Banking | 50 |
| 2 | Manufacturing & Processing | 10 |
| 3 | Hydropower | 30 |
| 4 | Others | 10 |

Figure 4.3

Favorite Investment sectors of Nepalese Investors



In the question about the Favorite Investment sectors of Nepalese Investors would like to invest, 50% of the respondents said that they would like to invest in banking sector, only 10% said that they would like to invest in manufacturing and processing sector, 30% of the respondents said that they would like to invest in Hydropower while 10% said that they would like to invest in other sectors like Hotels and insurance.

4. How often do you make Trading of Shares?

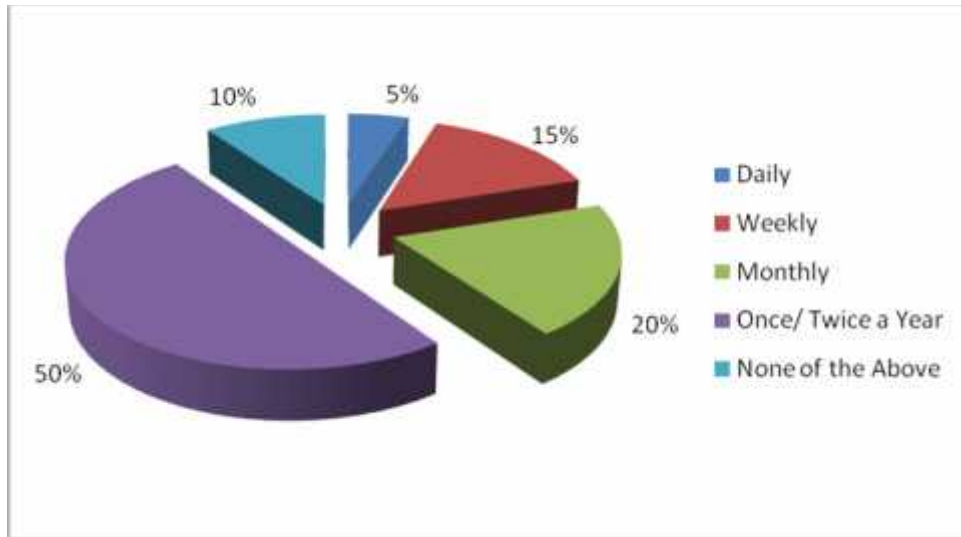
Table 4.13

Frequency of trading shares by Nepalese Investors.

| S. No | Frequency | Percentage (%) |
|-------|--------------------|----------------|
| 1 | Daily | 5 |
| 2 | Weekly | 15 |
| 3 | Monthly | 20 |
| 4 | Once/ Twice a Year | 50 |
| 5 | None of the Above | 10 |

Figure 4.4

Frequency of trading shares by Nepalese Investors



In another question about the frequency of transaction, 5% of the respondents said that they make transaction of shares daily and 15% said that they make transaction weekly. These investors are big investors. 20% respondents said that they make transaction monthly while 50% said that they make transaction once/ twice a year. This figure consists of the investors who buy stock from primary market only. 10% of the respondents chose neither of the given options.

5. Do you think that investors are well aware of the entire phenomenon about shares?

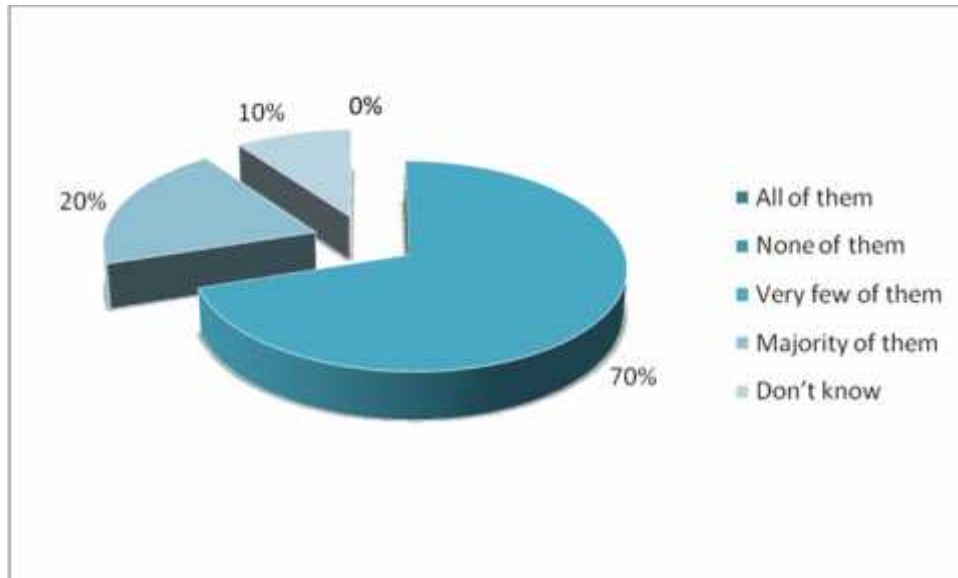
Table 4.14

Awareness Among the Nepalese Investors

| S.No | Frequency | Percentage (%) |
|------|------------------|----------------|
| 1 | All of them | 0 |
| 2 | None of them | 0 |
| 3 | Very few of them | 70 |
| 4 | Majority of them | 20 |
| 5 | Don't know | 10 |

Figure 4.5

Awareness among the Nepalese Investors



Majority of the respondents i.e. 70% of them, were of the opinion that very few of the investors are well aware of the entire phenomenon about shares whereas 20% said that majority of the investors are well aware of the entire phenomenon about share. 10% of the respondents said that they have no idea about the awareness of the investors.

6. Rank the following factors from highest (1) to lowest (6) in terms of the effect on Share Price Fluctuation

Table 4.15

Rating of the Factors Affecting the Share Price

| S.N | Factors | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|-------------------------------|----------|----------|----------|----------|----------|----------|
| 1 | Dividend Announcement | 48 | 36 | 4 | 8 | 4 | 0 |
| 2 | Right Issue Announcement | 30 | 44 | 20 | 6 | 0 | 0 |
| 3 | Political Condition | 36 | 8 | 28 | 20 | 8 | 0 |
| 4 | Economic Condition | 0 | 0 | 4 | 32 | 60 | 4 |
| 5 | Directives of Regularity body | 16 | 8 | 12 | 36 | 20 | 8 |
| 6 | Natural disasters | 0 | 4 | 8 | 0 | 4 | 84 |

While rating factors responsible for share price fluctuation Nepal, Majority of the respondents have ranked dividend announcement in the first place, right share announcement in the second place, political condition in the third place, directives of the regularity body in the fourth place, economic condition in the fifth place and natural disaster in the sixth place .This has been presented in the above table. According to the responses of the respondents, the factor s responsible for share price fluctuation can be ranked as:

1. Dividend Announcement
2. Right issue Announcement
3. Poltical Condition
4. Economy Condition
5. Directives of regularity body
6. Natural disaster

7. Which of the following analysis do you perform while Buying or Selling Stocks?

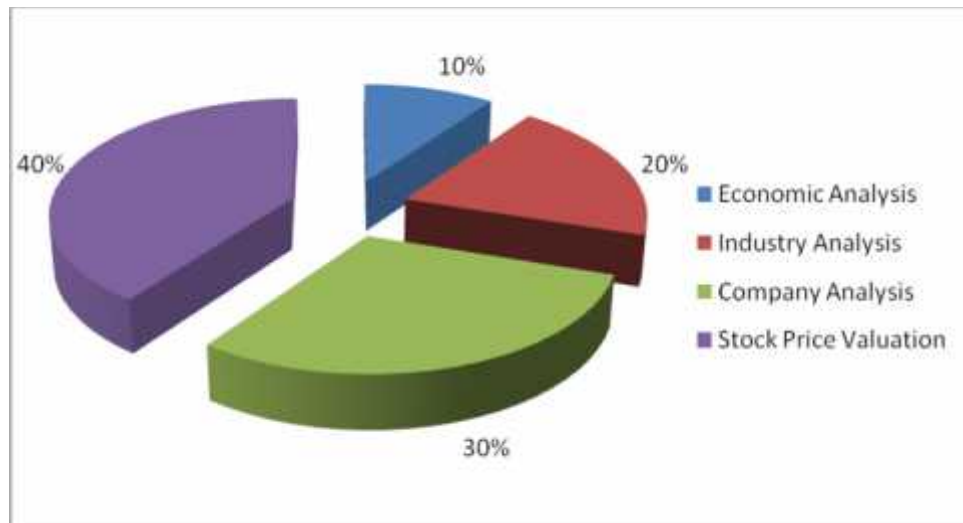
Table 4.16

Tools used by Nepalese Investors to Evaluate Share Price

| S.No | Tools | Percentage (%) |
|------|-----------------------|----------------|
| 1 | Economic Analysis | 10% |
| 2 | Industry Analysis | 20% |
| 3 | Company Analysis | 30% |
| 4 | Stock Price Valuation | 40% |

Figure 4.6

Tools used by Nepalese Investors to Evaluate Share Price



In the question about the tools used in the analysis of share price behavior , Majority of the respondents i.e. 40% said that they use stock price valuation before buying or selling of stocks.30% said that they use company analysis,20% said that they use industry analysis and 10% said that they use Economic Analysis before buying or selling of stocks.

8. What types of company are in your target to invest your stock?

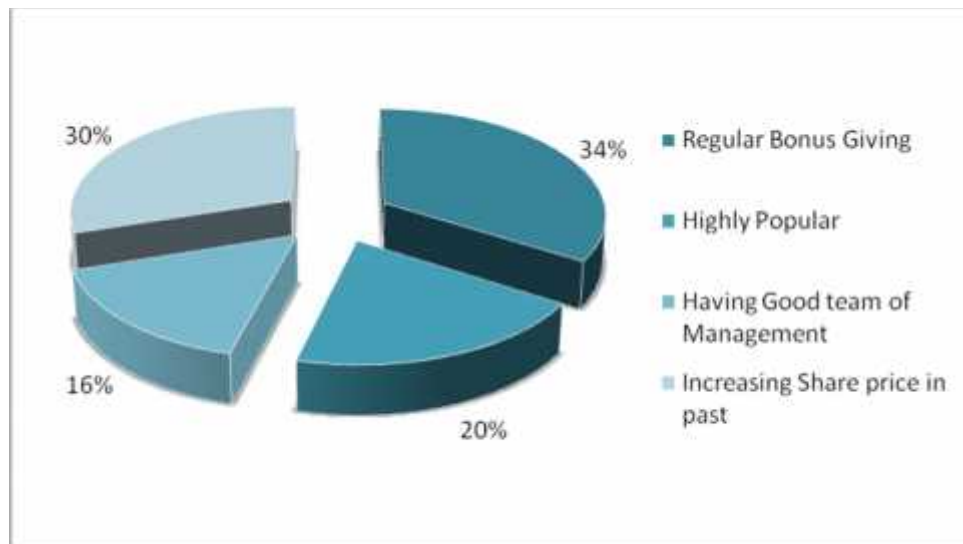
Table 4.17

Company Selection

| S.No | Company Types | Percentage (%) |
|------|--------------------------------|----------------|
| 1 | Regular Bonus Giving | 34 |
| 2 | Highly Popular | 20 |
| 3 | Having Good team of Management | 16 |
| 4 | Increasing Share price in past | 30 |

Figure 4.7

Company Selection



Regarding the selection of the company, 34% of the Respondents said that they want to make investment in stock of regular bonus giving companies, 20% said that they want to invest in stock in highly popular companies, 16% said that they want to invest in companies having good team of management while 30% said that they want to invest in stocks which have increasing price trend in the past.

9. In Nepal, current market price of shares can be used :(Please rank in order of their importance by assigning 1 to the most important one and so

on)

Table 4.18
Use of Market Price of Shares

| s n | Uses | 1 | 2 | 3 | 4 | 5 |
|-----|-------------------------------------|----|----|----|----|-----|
| 1 | To predict future prices | 25 | 40 | 20 | 15 | 0 |
| 2 | To predict future average return | 15 | 20 | 45 | 20 | 0 |
| 3 | To differentiate good and bad share | 20 | 25 | 15 | 40 | 0 |
| 4 | To make buy or sell decision | 55 | 15 | 20 | 10 | 0 |
| 5 | Others | 0 | 0 | 0 | 0 | 100 |

While rating the uses of current market price of shares, Majority Of the respondent said that they would use current market price of share to make buy or sell decision. So it has been ranked in the first place. Similarly, 40 % of the respondents said that they would use current market price of share of predict future prices. So it has been ranked in the second place, 45% of the respondents said that they would use current market price of share to predict future average return. So it has been ranked in the third place.40% of the respondents said that they would use current market price of share to differentiate good and bad share, So it has been ranked in fourth place. Whereas all the respondents have chosen the last option in the sixth place. This has been presented in the table. According to responses of the respondents, the use of current market price of share can be ranked as:

1. To make buy or sell decision
2. To predict future price
3. To predict future average return
4. To differentiate good and bad shares
5. Others

10. In general, what do you think about Current Trading Price of Share in the Market?

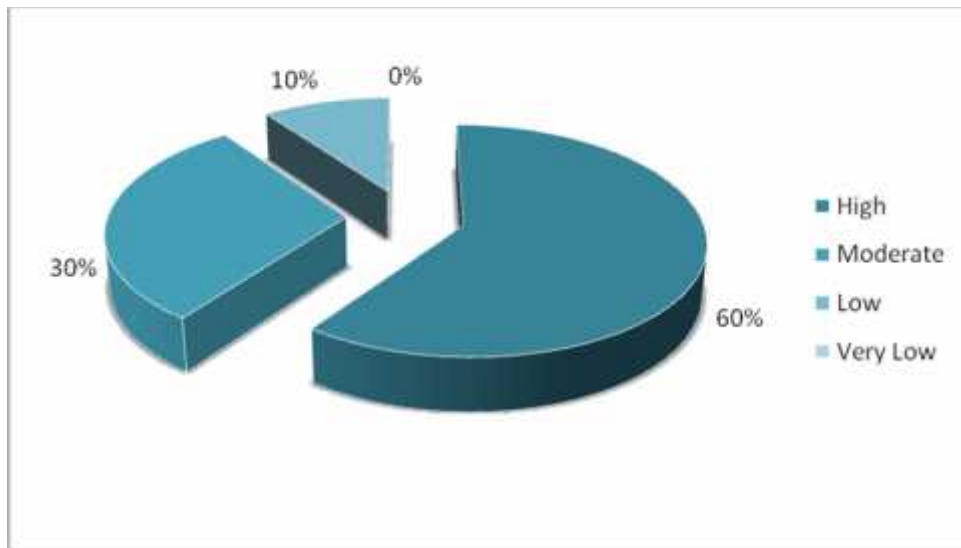
Table 4.19

Current Trading Price of Share in the Market

| S.N | Price Trend | Percentage (%) |
|-----|-------------|----------------|
| 1 | High | 60% |
| 2 | Moderate | 30% |
| 3 | Low | 10% |
| 4 | Very Low | 0% |

Figure 4.8

Current Trading Price of Share in the Market



In the question about Current trading price of share in the market, 60% of the respondent said that the current trading price is high, 30% of them said that it is moderate and only 10% said that it is low whereas no one has the opinion that is very low.

4.6 Major Findings

On the basis of the above analysis and presentation, major findings of the study are presented as follows.

Analysis of Financial Indicators

1. The MPS of the SCBL is highest whereas that of NDBL is the lowest among the Company study i.e SCBL is the most appreciable bank with its shares in high demand. The MPS is less fluctuating for HBL, NIBL and SCBL however it is riskier to invest in NBL, SCBL and EBL than in other Companies under study.
2. The EPS of most of the commercial banks under study is positive i.e most of the Companies under study are earning adequately on its share which is an indicator for a positive demand of the stock of those banks. The EPS is less fluctuating for the SCBL and is most fluctuating for NDBL however; based on EPS investing in NBL, SCBL, EBL and BOK is riskier than investing in NDBL, HBL, SBI and NIBL.
3. The DPS of most of the Companies under study positive however SCBL and NBL is the only bank which is plying regular and high dividends. Other banks under study are also paying dividends but the payment is not regular. The DPS is less fluctuating for SCBL and NBL whereas it is more fluctuating for NIBL, EBL BOK, and HBL. DCBL and NMBFL.

Findings based on Correlation Coefficient Analysis

1. Nabil Bank's MPS has high positive relationship with EPS, NWPS and DPS which is significant at 5% level.
2. Nepal Investment Bank's MPS has high positive relationship with EPS which is statistically significant at 5 % level of significance and low

- Negative relationship with NWPS & DPS which is not statistically significant.
3. Standard Charter Bank's MPS has high positive relationship with EPS which is statistically significant at 5 % level of significance, low positive relationship of MPS with NWPS and low negative relationship of MPS with DPS which is not significant.
 4. Himalayan Bank's MPS has positive relationship with EPS and low positive relationship with NWPS and DPS which is not significant.
 5. Nepal SBI Bank's MPS has high positive relationship with EPS, NWPS and DPS which is significant at 5% level.
 6. Everest Bank's MPS has high positive relationship with EPS, NWPS and DPS which is significant at 5% level.
 7. Bank of Kathmandu MPS has high positive relationship with EPS and DPS which is significant at 5% level and low negative relationship with NWPS which is not significantly.
 8. Nepal Development Bank's MPS has low positive relationship with EPS and low negative relationship with NWPS which is not significant.
 9. Development Credit Bank's MPS has low positive relationship with EPS and low negative relationship with NWPS which is not significant.
 10. NIDC Capital Market's MPS has high positive relationship with EPS and NWPS which is significantly 5% level and low negative relationship with DPS which is not significant.
 11. Nepal Merchant Banking & Finance's MPS has high positive relationship with EPS and NWPS which is significantly 5% level and negative relationship with DPS which is not significant.

Findings based on Simple Regression Analysis

1. The regression Coefficient between MPS and EPS of all the Companies under study is positive. The Regression Coefficient (b) is highest for NDBL

- i.e. 0.5663 whereas it is lowest for SCBL i.e 0.0068. It indicates that one unit increase in EPS will lead to 0.5663 units increase in MPS of the NDBL whereas one unit increase in EPS of the SCBL will lead to 0.0068 units increase in MPS holding the other entire variable constant The test of hypothesis shows significant correlation between MPS and EPS in case of NIBL, EBL and SBI, MPS and EPS is significantly correlated t-test at 5% level whereas in case of NBL, SCBL, HBL, BOK, NDBL, DCBL NIDCCML and NMBFL it is not significantly correlated.
2. The regression Coefficient between MPS and NWPS of all companies except NIBL, BOKL and NDBL is positive. The Regression Coefficient (b) is highest for NMBFL i.e 0.7593 which indicates that one unit increase in NWPS for SCBL will lead to 0.7593 units increase in MPS holding all the other variables constant. In case of NIBL, BOKL and NDBL the value of Regression Coefficient is negative i.e (0.0117), (0.0157) and (0.5220) respectively which indicates that there exists negative relationship between MPS and NWPS. This indicates that MPS for most of the companies is not affected by increase or decrease in NWPS.
 3. The Regression Coefficient between MPS and DPS of all the companies except NIB, SCBL, and DCBL NIDCCML & NMBFL is positive. The test of hypothesis shows t-test at 5% significance correlation except NIB, SCBL, DCBL, and NIDCCML & NMBFL. The Regression Coefficient (b) is highest for SBI i.e 0.0496 which indicates that one unit increase in DPS of SBI will lead to 0.0496 units increase in MPS holding the other entire variable constant. In case of NIBL, SCBL, DCBL NIDCCML and NMBFL the value of Regression Coefficient is Negative i.e (0.0028), (0.0045), -0.0033, -0.01597 & -0.1519 respectively which indicates that there exists negative relationship between MPS and DPS.

Multiple Regression Analysis

1. The Coefficient of determination of MPS with EPS and NWPS for most of the companies under is high which shows a strong relationship between MPS with EPS and NWPS. The test of hypothesis of MPS with EPS and NWPS together shows that MPS is significantly correlated with the EPS and NWPS together for all the companies except NDBL. This demonstrates that the MPS of F-test at 5% level of significantly correlated with the EPS and NWPS together for all the company expect NIBL, NBL, DCBL and NMBFL the calculated value is greater than tabulated value i.e Null Hypothesis is rejected. This demonstrates that the MPS of some of the company is influenced or determined by EPS and NWPS together whereas the MPS of NIBL, NBL, NDBL, DCBL and NMBFL is not influenced or determined by EPS and NWPS together.
2. The coefficient of determination of MPS with NWPS and DPS for most of the companies under study is high which shows a strong relationship between MPS with NWPS and DPS except NIBL However, the test of hypothesis of MPS with NWPS and DPS together shows that for EBL, SCBL, HBL and SBI the MPS is significantly correlated with NWPS and DPS together whereas for NIBL, NBL, BOK, NDBL, DCBL and NMBFL, the MPS is not Significantly correlated with NWPS and DPS together. This demonstrates that the MPS of SCBL, EBL, HBL, and SBIBL is influenced or determined by NWPS and DPS together whereas it is not influenced for NIBL, NBL, BOK, NDBL, DCBL and NMBFL.

Risk and Return Analysis

1. The risk and return analysis shows that the expected return for the NBL is highest and it is lowest for NDBL among the sample Companies. The investors who seek profit maximization will invest in stocks of NBL bank. Based on the total risk, stock of SBI is most risky whereas that of SCBL is

- least risky .Based on risk per unit of return, stock of HBL is the most risky and that of EBL is least risky.
2. The Standard Deviation is highest for SBI and Lowest for SCBL. The stock of SBI is most risky whereas that of SCBL is least risky to invest. Standard deviation is a strong statistical device to measure the total risk involved in an investment which consist of both market risk and diversifiable risk.
 3. The coefficient of variation measures the risk per unit of return. The CV is highest for NMBFL, lowest for EBL and no SD is NDBL. It can be interpreted that the NMBFL is the least appreciable company because it is most risky due to high CV whereas EBL is most appreciable company because it is least risky due to low CV.
 4. Required rate of return is highest for EBL and lowest for NMBFL. The required rate of return is greater than the expected rate of return for all the selected sample companies except NIBL HBL, NDBL, and NIDCCML & NMBFL. So the common stocks of these companies are worth purchasing as they are realizing greater rate of return than needed so it's called overpriced. But in the case of other companies the required rate of return is higher than the realized rate of return. So the common stocks of these companies are not worth buying so it's called under priced. .Instead, if one holds the stocks of these companies, it is better to sell them off.

Market Sensitivity Analysis

The beta-coefficient of SBI, NBL and DCBL is greater than one whereas it is less than one for HBL,BOK,SCBL ,EBL ,NIBL, NDBL, NIDCCML & NMBFL i.e. The stocks of the SBI, NBL and DCBL is more volatile in comparison to the similar average stock 1. The market whereas the stocks of HBL,BOK,SCBL, EBL, NIBL, NDBL, NIDCCML & NMBFL is less volatile in comparison to the similar average stock in the market. A Conservative investor whose main concern is preservation of capital will invest in stocks of HBL,BOK,SCBL ,EBL ,NIBL,

NDBL, NIDCCML & NMBFL whereas one willing to take high risks in an effort to earn high rewards will invest in stocks of SBI, NBL and DCBL.

Analysis of Run Test

The run-test shows that the calculated value is greater than the tabulated value for all the commercial banks under study i.e. Null Hypothesis is rejected and alternative Hypothesis is accepted. This indicates that the change in the MPS of the commercial banks is not random and that the market over reacts to the available information.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The general public investors do invest their scarce saving funds in the common stocks of the public companies through primary or secondary market, with the expectation of good returns in the future. We know that determination of MPS of any public company should be in accordance with their financial performance. In other words, the key financial indicators like EPS, NWPS, and DPS etc have major influence in the determination of MPS.

Similarly, the investors should be aware of the level of risk associated with the common stock investment. The awareness of investment risk helps them to take necessary steps to minimize or avoid the risky investment.

Therefore, 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 sampled companies comprising commercial banks, finance companies, hydropower and hotels.

This study is totally based on the secondary data and information obtained from various financial reports, annual reports, regular publications, news, journals, official websites etc. for the analysis, 11 commercial banks, 3 development banks, 7 finance companies, 2 insurance companies, 1 hotel and 1 hydropower company have been taken as sample But due to unavailability of data, few sampled companies have been left out for some analysis.

The study has attempted to identify the interrelationship of MPS with major

financial indicators like EPS, NWPS, DPS and the analysis is based on five year's observation.

Furthermore, the level of risk associated with the common stock investment has been analyzed with the help of standard deviation, coefficient of variation, risk partition and CAPM approach.

Besides, the correlation coefficient analysis, including the simple as well as multiple regression analysis has also been carried out.

In order to check the reliability of statistical analysis mostly F-Test have been applied wherever appropriate.

5.2 Conclusion

Securities market plays a pivotal role in mobilizing savings and channeling them in productive purposes. There has been some positive development in regulation of the share market. In 2007, the government of Nepal issued some regulations governing Stock Broker, Dealer and Market Maker. These regulations paved the way for opening a new stock exchange, increase the number of stock brokers and reduce the brokerage commission. In addition, NEPSE has also initiated some improvements. It has started a process to induct 27 additional stock brokers and an automated trading system is already in place. The SEBON has recently allowed the NEPSE to function as profitable agency. This shows that there have been some positive developments in the capital market through policy and legal changes.

The study on the share price behavior of the companies in Nepal reveals that the Nepalese share market is following a bullish trend and this trend is quite encouraging. The overall growth and performance of the security market is satisfactory through it is fluctuating during the F.Y 07/08. The NEPSE index

increased by 200% and the Banking index increased 259% during the study period because of a tremendous increase in the share prices of companies, financial institutions and development banks. The restoration of peace, improvement in the financial performance of the listed companies and most importantly, the directive that the Central Bank gave to banks and financial institutions on March 2007 to double their paid up capital also contributed to a remarkable increase in share prices and subsequently the stock market indices.

Most of the 142 listed companies which are listed in the NEPSE and performing well are the commercial banks. Therefore, the shares of commercial banks in Nepal are heavily traded and these shares play a key role in the determination of NEPSE index.

The EPS and DPS of most of the commercial banks under study are positive, however for most of the commercial banks these indicators are fluctuating. It indicates that except for few well established commercial banks the EPS and DPS is not regular and that the financial position is not consistent throughout the period.

There is no significant relationship between the market price of the shares and important financial indicators like the EPS, NWPS and DPS when taken individually. However, there was a significant relationship between Market price and other financial indicators like EPS,DPS and NWPS when analyzed together. This shows that the overall NEPSE index and Banking index movement is not determined by each financial indicator whereas it is determined by the overall composite of these indicators. Moreover it can also be stated that the influence of financial indicators of the NIBL, NBL and DCBL to the MPS is weak as compared to other companies under study.

The risk and return analysis shows that the risk per unit of return is high for most

of the company's under study. It shows that the risk is high for these banks in comparison to the return. Analysis of the beta coefficient of the shares of the companies shows that the stock of SBI, NBL and DCBL is more volatile and aggressive whereas the HBL, BOK, SCBL, EBL, NIBL, NDBL, and NIDCCML & NMBFL i.e it is less aggressive. A conservative investor wishing to preserve capital will invest in stock of HBL, BOK, SCBL, EBL, NIBL, NDBL, NIDCCML & NMBFL whereas one willing to take high risks in an effort to earn high rewards will invest in stocks of SBI, NBL and DCBL.

The run test shows that the Market Price of the shares of the commercial banks under study is not random and that the market over reacts to the available information. This shows that the NEPSE do not provide true picture of the financial condition of the commercial banks. It also signifies that the share price of the commercial banks is fluctuated by intangible consideration and speculations rather than by the true net worth of those banks. Moreover, Insiders trading practice can also be blamed for the over reaction of the NEPSE.

Relative to the overall economy, the size of securities market is very small. Moreover the relationship between the stock market activity and the economic growth is very weak. The weak relationship between the share prices and the economy is because of the excessive speculation in determining share prices and that the share prices have little correspondence with the real performance of the economy.

The study also shows that the general public is investing in the shares without analyzing the financial situation of the companies in which they are investing. The investors in Nepal are not so educated about the stock exchange more importantly about the indicators that are to be looked in to while investing on a particular stock. Investment decision in most cases is guided by a peer's expectation/decision

to invest rather than the analysis of the performance of the stock. Moreover, some investors also depend on the broker's advice for investing in stock. However, even the brokers in most case do not have real education and knowledge about the market which means that the brokers themselves don't have correct analysis and advice on the stocks

5.3 Recommendations

Capital markets are a vital part of the financial development and economic development of the country. They provide an alternative vehicle for financial resource mobilization. In the developing country like Nepal, there is a strong need of financial resources for the overall development of the country. The development of stock market is one of the ways of mobilizing the needed financial resource. However, it is important that the financial sector is seen to stable and a credible place to invest in the stock exchange must provide the necessary avenues to assist in finding Nepal's economic growth.

On the basis of analysis and findings of the study, following strategies have been recommended to overcome weakness, inefficiency and to improve the overall stock market in Nepal.

1. The role of the stock exchange is to facilitate the marketability and liquidity of securities through market intermediaries. To fulfill this role, the Nepal Stock Exchange needs to make the securities market competitive, modern, efficient and reliable; recently, the NEPSE has made some improvements by introducing automated trading system, implementation of Wide Area Network and imposing circuit barkers. However, the NEPSE should further modernize it so that it can keep a track of even minor developments in the market which will in turn help it to regulate the market effectively. Another way of

modernizing itself could be making trading paperless. Paperless trading will; discourage speculation and make the market more efficient.

2. The Nepalese stock market (NEPSE, SEBO) should take some effective initiatives to control random fluctuation of MPS and establish the system of regular monitoring and evaluation of stock market.
3. Concrete steps should be undertaken to compel the public companies for the disclosure of factual information about themselves and their financial performance in proper time.
4. There is the necessity of separate body to analyze strengths and weaknesses of public companies which should disclose right information and suggestions to public investors about investment risk. This will help the investors to take proper investment decision at the right time to avoid or minimize the level of risk.
5. The public investors should not invest their savings in shares of public companies haphazardly .They should at least analyze or get suggestions from expert about the financial position and the level of investment risk prior to taking an investment decision.
6. The Public companies should provide updated reports to the investors periodically, informing actual financial position of the company.
7. The ultimate objective of any firm is to maximize the wealth position of investors, which largely depends upon the proper trends of EPS , NWPS and DPS. This reality should be well imparted to the inventors in order to make them rational in the field of investment for which the public companies themselves should frequently launch their well designed awareness program.
8. Insider trading and speculation has been one of the important features of NEPSE. It is important that the brokers, individual companies and other market players understand that the insider trading approach might be beneficial to few individuals in a short run, however, it will not be beneficial to the overall economic growth and capital market in the long run. The market intermediaries

including the brokers should follow the market ethics and trade rationally.. Moreover, the government should implement regulation to check insider trading and to develop good corporate governance.

9. To promote a healthy and competitive share market and to check monopoly and undue speculation it is important to have adequate market intermediaries in the stock exchange. Although the NEPSE is in the process of increasing the stock brokers to 50, it is important that the NEPSE conduct a paper research to ensure that there are enough brokers and market intermediaries for a competitive functioning of the stock market.
10. The government should ensure that there is a favorable legal environment for developing healthy and competitive stock market. The market should be operated on a carrot and stick concept. The government should bring policies that provide fiscal incentives and that helps minimizes the costs of companies to go public. However, the regulators should be given stronger and on-going powers to implement legislations. The legal environment should be such that the regulation of markets and the financial sector is an ongoing exercise, not just a reaction to a problem.
11. The shares of commercial banks in Nepal are heavily traded in the stock market and these shares play a key role in the determination of NEPSE index. To avoid such situation, the government should provide proper financial and legal incentives to the manufacturing and other business which plan to go public and listed with the stock exchange.
12. Informed investors are the pillars of the stock market. To prevent the possibility of price manipulation and to reduce the chance of fraud and malpractices, individual companies as well as SEBON and NEPSE should develop a mechanism which facilitates dissemination of accurate and reliable market related information to the investors. Moreover, these organizations should conduct regular promotional programs at the different levels to encourage investors to invest in the stocks.

13. Lack of experience and inadequate information on the part of corporate management bankers, financial intermediaries, regulators and government official has led to an imperfect stock market. Credit rating agency, financial consultancy and research institutions should be established to address the investor's and institutional need for the professional stock analysis and stock rating services.
14. At present, the service of the stock market is limited to Kathmandu only. The issuance of some legislation in 2007 governing stock market opened a door for the establishment of another stock exchange. SEBON should conduct a study on the feasibility and need for an establishment of regional stock exchanges. Regional stock exchanges might help ensure accessibility of the stock market to the general public.
15. The NEPSE does not truly represent the national economy. To ensure that the NEPSE is representative of the national economy, big corporation should be turned public and listed in NEPSE. Moreover, government should come up with a policy so that private companies which are making profit are also attracted to go public.
16. The government SEBON and NEPSE should conduct a through research on the functioning of the NEPSE and introduce appropriate measures for reforming the weakness. The government and public companies should encourage researchers to conduct timely research on the functioning of the overall stock market by providing proper incentives.
17. The companies listed with the NEPSE as well as prospective companies that plans to go public adopt modern management and technology. The companies should use financial experts to assess their financial condition and their share behavior. Moreover, the SEBON should make mandatory to provide financial statements and financial analysis to the potential investors and their shareholders.

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Annex-1
Questionnaire

Dear Respondent,

This questionnaire is prepared and presented before you a part of my research on "A study on share Price Behavior of Nepalese Capital Market" which I am conducting for the degree of Master of Business Studies (MBS) .The questions raised in the questionnaire are related to my study. I humbly request you to fill it up at the best of your knowledge .Your kind cooperation in this regard will be of immense value for me. I shall be highly obliged for your prompt response as far as possible

Thanking you!

Sushil Pokharel

Shanker Dev Campus

Putalisadak,Kathmandu

Name of the respondent-

Date-

Designation-

Name of the Organization

Please answer the following questions with tick mark in the appropriate places and as required by the question.

3. Often, from which market do you buy stocks?

Primary Market

Secondary Market

Both

4. Why do you buy Stock?

- For Dividend For Capital Gain
 For Right Share All of the Above

3 In which of the following sectors do you want to invest in the shares?

- Banking Manufacturing & Processing
 Hydropower Others

4 How often do you make trading of shares?

- Daily Weekly
 Monthly Once/ Twice a Year
 None of the Above

5. Do you think that investors are well aware of the entire phenomenon about shares?

- All of them none of them
 Very few of them Majority of them don't know

6. Rank the following factors from highest (1) to lowest (6) in terms of the effect on share price fluctuation

- Dividend Announcement Right Issue Announcement
 Political Condition Economic Condition
 Directives of Regularity body Natural disasters

7. Which of the following analysis do you perform while buying or selling stocks?

- Economic Analysis Industry Analysis
 Company Analysis Stock Price Valuation

Annex-2

Question

| S.N | Option | Respondents | Total. Respondents | Percent % |
|-----|----------------------------|-------------|--------------------|-----------|
| 1. | Primary Market Only | 40 | 100 | 40 |
| | Secondary Market Only | 0 | | 0 |
| | Both the Market | 60 | | 60 |
| 2. | For Dividend | 20 | 100 | 20 |
| | For Capital Gain | 10 | | 10 |
| | For Right Share | 20 | | 20 |
| | All of the Above | 50 | | 50 |
| 3. | Banking | 50 | 100 | 50 |
| | Manufacturing & Processing | 10 | | 10 |
| | Hydropower | 30 | | 30 |
| | Others | 10 | | 10 |
| 4. | Daily | 5 | 100 | 5 |
| | Weekly | 15 | | 15 |
| | Monthly | 20 | | 20 |
| | Once/ Twice a Year | 50 | | 50 |
| | None of the Above | 10 | | 10 |
| 5. | All of them | 0 | 100 | 0 |
| | None of them | 0 | | 0 |
| | Very few of them | 70 | | 70 |
| | Majority of them | 20 | | 20 |
| | Don't know | 10 | | 10 |
| 7 | Economic Analysis | 10 | | 10 |
| | Industry Analysis | 20 | | 20 |

| | | | | |
|-----|--------------------------------|----|-----|----|
| | Company Analysis | 30 | 100 | 30 |
| | Stock Price Valuation | 40 | | 40 |
| 8 | Regular Bonus Giving | 34 | 100 | 34 |
| | Highly Popular | 20 | | 20 |
| | Having Good team of Management | 16 | | 16 |
| | Increasing Share price in past | 30 | | 30 |
| 10. | High | 60 | 100 | 60 |
| | Moderate | 30 | | 30 |
| | Low | 10 | | 10 |
| | Very Low | 0 | | 0 |
| | | | | |

Annex-3
Summary of Financial Indicator

| S.N | Description | Period | | | | | |
|-----|---------------|---------|-----------|-----------|-----------|-----------|-----------|
| | | 2001/02 | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | 2006/2007 |
| 1. | NABIL | | | | | | |
| | MPS | 700 | 735 | 1000 | 1505 | 2240 | 5050.00 |
| | EPS | 55.25 | 84.66 | 92.61 | 105.49 | 129.21 | 137.08 |
| | NWPS | 233 | 267.30 | 301.37 | 337.16 | 381.37 | 418.39 |
| | DPS | 20 | 30 | 50 | 65 | 70 | 85 |
| 2 | NIBL | | | | | | |
| | MPS | 760 | 795 | 940 | 800 | 1260 | 1729.00 |
| | EPS | 33.59 | 39.56 | 51.70 | 39.50 | 59.35 | 62.57 |
| | NWPS | 307.95 | 216.23 | 246.89 | 200.80 | 239.67 | 234.37 |
| | DPS | - | - | 20 | 15 | 12.58 | 47.59 |
| 3 | SCBNL | | | | | | |
| | MPS | 1550 | 1640 | 1745 | 2345 | 3775 | 5900.00 |
| | EPS | 141.13 | 149.30 | 143.55 | 143.95 | 175.84 | 167.37 |
| | NWPS | 363.86 | 403.16 | 399.25 | 422.38 | 468.22 | 512.12 |
| | DPS | 100 | 100 | 110 | 120 | 130 | 80 |
| 4 | HBL | | | | | | |
| | MPS | 1000 | 836.00 | 840 | 920 | 1100 | 1760.00 |
| | EPS | 60.26 | 49.54 | 49.05 | 47.91 | 59.24 | 60.66 |
| | NWPS | 220.03 | 247.82 | 246.93 | 239.59 | 228.72 | 264.74 |
| | DPS | 7.50 | 1.32 | 0 | 11.58 | 30 | 15 |
| 5 | NSBIBL | | | | | | |
| | MPS | 401 | 255 | 307 | 335 | 612 | 1176.00 |
| | EPS | 9.61 | 11.47 | 14.25 | 13.29 | 18.27 | 39.35 |
| | NWPS | 131.88 | 134.05 | 146.80 | 159.54 | 153.44 | 179.58 |
| | DPS | - | 0 | 8 | 0 | 0 | |
| 6 | EBL | | | | | | |
| | MPS | 430 | 445 | 680 | 870 | 1379 | 2430.00 |
| | EPS | 32.91 | 29.90 | 45.58 | 37.54 | 45.81 | 57.22 |
| | NWPS | 150.75 | 150.10 | 171.53 | 169.15 | 185.87 | 231.95 |
| | DPS | - | 20 | 20 | 0 | 25 | 10 |
| 7 | BOKL | | | | | | |
| | MPS | 254 | 198 | 295 | 430 | 850 | 1375.00 |
| | EPS | 2 | 17.72 | 27.40 | 30.10 | 43.67 | 43.50 |

| | | | | | | | |
|--|------|--------|--------|--------|--------|--------|--------|
| | NWPS | 112.21 | 124.97 | 140.37 | 155.47 | 181.47 | 162.81 |
| | DPS | - | 5 | 10 | 15 | 18 | 20 |

| | | | | | | | |
|----|----------------|--------|--------|---------|--------|---------|---------|
| 8 | NDBL | | | | | | |
| | MPS | 155 | 140 | 102 | 88 | 102 | 153.00 |
| | EPS | 2.52 | 0.75 | -188.76 | 49.27 | -106.61 | -74.38 |
| | NWPS | 107.25 | 108 | -74.69 | 230.94 | -138.22 | -129.20 |
| | DPS | | - | - | - | - | |
| 9 | DCBL | | | | | | |
| | MPS | 152 | 145 | 167 | 305 | 390 | 800.00 |
| | EPS | 5.85 | 10.41 | 19.22 | 22.27 | 122.17 | 16.78 |
| | NWPS | 105.93 | 105.27 | 112.72 | 120.48 | 1131.29 | 129.28 |
| | DPS | - | 0 | 10 | 10 | 12 | |
| 10 | NIDCCML | | | | | | |
| | MPS | - | 0 | 107 | 145 | 208 | 455.00 |
| | EPS | - | 0 | 35.07 | 14.02 | 58.88 | 48.52 |
| | NWPS | - | 0 | 128.40 | 154.87 | 154.51 | 166.14 |
| | DPS | 15 | - | - | - | - | - |
| 11 | NMBFL | | | | | | |
| | MPS | 221 | 171 | 175 | 250 | 276 | 265.00 |
| | EPS | 14.54 | 15.12 | 21.08 | 16.02 | 28.07 | 32.25 |
| | NWPS | 70.78 | 75.90 | 96.99 | 97.44 | 177.98 | 160.12 |
| | DPS | 25 | 20 | 20 | 30 | - | - |

Annex-4
Rate of return, Standard Deviation, Coefficient of Variation and
Beta Coefficient of Market Index

A. Rate of Return & Standard Deviation of the Market Index

| F.Y | NEPSE Index(N) | Realize rate of Return(R _M) | (R _M - \bar{R}_M) | (R _M - \bar{R}_M) ² |
|---------|----------------|--|---------------------------------|--|
| 2001/02 | 227.54 | - | - | - |
| 2002/03 | 204.86 | - 0.0997 | -0.3738 | 0.1431 |
| 2003/04 | 222.04 | 0.0839 | -0.1947 | 0.0379 |
| 2004/05 | 286.67 | 0.2911 | 0.0125 | 0.0002 |
| 2005/06 | 386.83 | 0.3494 | 0.0708 | 0.0050 |
| 2006/07 | 683.95 | 0.7681 | 0.48954 | 0.2396 |
| | | (R _M)=1.3928 | | (R _M - \bar{R}_M) ² =0.4258 |

Calculation of Realized Rate of Return, Expected Rate of Return and Standard Deviation of the Market

A. Calculation of Realized Rate of Return

$$R_M = \frac{MI_t - MI_{t-1}}{MI_{t-1}} = -0.0997$$

B . Calculation of Expected Rate of Return

$$\bar{R}_M = \frac{\sum(R_M)}{N} = 0.27856$$

C. Calculation of Standard Deviation

$$\sigma_j = \frac{(R_j - \bar{R}_j)^2}{n} = 0.29182$$

$$\sigma_m^2 = 0.08516$$

B. Rate of return, Standard Deviation, Coefficient of Variation and Beta Coefficient of Commercial Bank and others

Nabil Bank Limited (NBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)^2$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j)(R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|-----------------|-----------------------------------|---------------------|--|
| 2001/02 | 700 | 30 | - | - | - | - | - |
| 2002/03 | 740 | 50 | 0.1286 | -0.4688 | 0.2198 | -0.3783 | 0.1773 |
| 2003/04 | 1000 | 65 | 0.4392 | -0.1582 | 0.0250 | -0.1947 | 0.0308 |
| 2004/05 | 1505 | 70 | 0.575 | -0.0224 | 0.0005 | 0.0125 | -0.0003 |
| 2005/06 | 2240 | 85 | 0.5449 | -0.0525 | 0.0028 | 0.0708 | -0.0037 |
| 2006/07 | 5050 | 100 | 0.2991 | 0.7017 | 0.4924 | 0.48954 | 0.3435 |
| | | | | | $(R_j - \bar{R}_j)^2$ = 0.7405 | | $(R_j - \bar{R}_j)(R_m - \bar{R}_m)$ = 0.5476 |

Nepal Investment Bank Limited (NIBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j)(R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|------------------------------------|---------------------|--|
| 2001/02 | 760 | 0 | - | - | - | - | - |
| 2002/03 | 795 | 20 | 0.0724 | -0.1505 | 0.02264 | -0.3783 | 0.0569 |
| 2003/04 | 940 | 15 | 0.2013 | -0.0216 | 0.0005 | -0.1947 | 0.0042 |
| 2004/05 | 800 | 12.5 | -0.1356 | -0.3585 | 0.1285 | 0.0125 | -0.0045 |
| 2005/06 | 1260 | 20 | 0.6 | 0.3771 | 0.1422 | 0.0708 | 0.0267 |
| 2006/07 | 1729 | 5 | 0.3762 | 0.1533 | 0.0235 | 0.48954 | 0.0750 |
| | | | | | $(R_j - \bar{R}_j)^2$ = 0.31734 | | $(R_j - \bar{R}_j)(R_m - \bar{R}_m)$ = 0.1583 |

Standard Charter Bank Nepal Limited(SCBNL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|-----------------------------------|---------------------|---|
| 2001/02 | 1575 | 100 | - | - | - | - | - |
| 2002/03 | 1640 | 110 | 0.1111 | -0.2697 | 0.0727 | -0.3783 | 0.1020 |
| 2003/04 | 1745 | 110 | 0.1311 | -0.2497 | 0.0624 | -0.1947 | 0.0486 |
| 2004/05 | 2345 | 120 | 0.4126 | 0.0318 | 0.0010 | 0.0125 | 0.0004 |
| 2005/06 | 3775 | 130 | 0.6652 | 0.2844 | 0.0809 | 0.0708 | 0.0201 |
| 2006/07 | 5900 | 80 | 0.5841 | 0.2033 | 0.0413 | 0.4895 | 0.0995 |
| | | | | | $(R_j - \bar{R}_j)^2 =$ 0.2583 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.2706 |

Himalayan Bank Limited (HBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|----------------------------------|---------------------|---|
| 2001/02 | 1000 | 2.5 | - | - | - | - | - |
| 2002/03 | 836 | 1.32 | -0.1627 | -0.3177 | 0.1009 | -0.3783 | 0.1202 |
| 2003/04 | 840 | 0 | 0.0048 | -0.1502 | 0.0226 | -0.1947 | 0.0292 |
| 2004/05 | 920 | 11.58 | 0.1090 | -0.046 | 0.0021 | 0.0125 | -0.0006 |
| 2005/06 | 1100 | 30 | 0.2283 | 0.0733 | 0.0054 | 0.0708 | 0.0052 |
| 2006/07 | 1740 | 15 | 0.5955 | 0.4405 | 0.1940 | 0.48954 | 0.2156 |
| | | | | | $(R_j - \bar{R}_j)^2 =$ 0.325 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.3696 |

Nepal SBI Bank Limited (SBIBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|-----------------------------------|---------------------|--|
| 2001/02 | 401 | 0 | - | - | - | - | - |
| 2002/03 | 255 | 8 | -0.3441 | -0.7025 | 0.4935 | -0.3783 | 0.2658 |
| 2003/04 | 307 | 0 | 0.2039 | -0.1545 | 0.0239 | -0.1947 | 0.0301 |
| 2004/05 | 335 | 0 | 0.0912 | -0.2672 | 0.0714 | 0.0125 | -0.00334 |
| 2005/06 | 612 | 5 | 0.8418 | 0.4834 | 0.2337 | 0.0708 | 0.0342 |
| 2006/07 | 1176 | 47.59 | 0.9993 | 0.6409 | 0.4108 | 0.48954 | 0.3137 |
| | | | | | $(R_j - \bar{R}_j)^2 =$ 1.2333 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m) =$ 0.64046 |

Everest Bank Limited (EBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|-----------------------------------|---------------------|---|
| 2001/02 | 405 | 0 | - | - | - | - | - |
| 2002/03 | 445 | 20 | 0.1481 | -0.3286 | 0.1080 | -0.3783 | 0.1243 |
| 2003/04 | 680 | 20 | 0.5730 | 0.0963 | 0.0093 | -0.1947 | -0.187 |
| 2004/05 | 870 | 0 | 0.2794 | -0.1973 | 0.0389 | -0.0125 | -0.0025 |
| 2005/06 | 1379 | 25 | 0.6138 | 0.1371 | 0.0188 | 0.0708 | 0.0097 |
| 2006/07 | 2430 | 10 | 0.7694 | 0.2927 | 0.0857 | 0.48954 | 0.1433 |
| | | | | | $(R_j - \bar{R}_j)^2$ = 0.2607 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.2561 |

Bank of Kathmandu Limited (BOKL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|------------------------------------|---------------------|--|
| 2001/02 | 254 | 10 | - | - | - | - | - |
| 2002/03 | 198 | 05 | -0.2009 | -0.7025 | 0.4935 | -0.3783 | 0.2658 |
| 2003/04 | 295 | 10 | 0.5404 | 0.0388 | 0.0015 | -0.1947 | -0.0076 |
| 2004/05 | 430 | 15 | 0.5085 | 0.0069 | 0.00005 | 0.0125 | 0.00009 |
| 2005/06 | 850 | 18 | 1.0186 | 0.517 | 0.2673 | 0.0708 | 0.0366 |
| 2006/07 | 1375 | 20 | 0.6412 | 0.1396 | 0.0195 | 0.48954 | 0.0683 |
| | | | | | $(R_j - \bar{R}_j)^2$ = 0.78185 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.36319 |

Nepal Development Bank Limited (NDBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|--------------------------------------|---------------------|--|
| 2001/02 | 155 | - | - | - | - | - | - |
| 2002/03 | 140 | - | -0.09677 | -0.1275 | 0.0162565 | -0.3783 | 0.0476598 |
| 2003/04 | 102 | - | -0.271429 | -0.30216 | 0.0912978 | -0.1947 | 0.0588296 |
| 2004/05 | 88 | - | -0.137255 | -0.16798 | 0.0282178 | 0.0125 | -0.0020998 |
| 2005/06 | 102 | - | 0.1590909 | 0.128364 | 0.0164774 | 0.0708 | 0.00908819 |
| 2006/07 | 153 | - | 0.5 | 0.4469273 | 0.2202175 | 0.48954 | 0.2297280 |
| | | | 0.1536332 | | $(R_j - \bar{R}_j)^2$ = 0.3724669 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.343205933 |

Development Credit Bank Limited (DCBL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|--------------------------------------|---------------------|---|
| 2001/02 | 152 | - | | | | - | |
| 2002/03 | 145 | 0 | -0.046053 | -0.53209 | 0.2831182 | -0.3783 | 0.198895 |
| 2003/04 | 167 | 10 | 0.2206897 | -0.26535 | 0.0704086 | -0.1947 | 0.0516629 |
| 2004/05 | 305 | 10 | 0.886223 | 0.400192 | 0.1601534 | 0.0125 | 0.005002396 |
| 2005/06 | 390 | 12 | 0.3180328 | -0.168 | 0.028225 | 0.0708 | -0.0118946 |
| 2006/07 | 800.0 | 0 | 1.0512821 | 0.565246 | 0.3195032 | 0.48954 | 0.27671061 |
| | | | 2.4301794 | | $(R_j - \bar{R}_j)^2 =$ 0.8614084 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ =0.520375983 |

NIDC Capital Market Limited (NIDCCML)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|--|---------------------|---|
| 2001/02 | - | 15 | | | | - | |
| 2002/03 | 0 | - | | | | -0.3783 | |
| 2003/04 | 107 | - | | | | -0.1947 | |
| 2004/05 | 145 | - | 0.3551402 | -0.04028 | 0.0016228 | 0.0125 | -0.000503555 |
| 2005/06 | 208 | - | 0.039058 | 0.039058 | 0.0015255 | 0.0708 | 0.002765318 |
| 2006/07 | 455 | - | 0.792075 | 0.792075 | 0.6273835 | 0.48954 | 0.387752597 |
| | | | | | $(R_j - \bar{R}_j)^2 =$ = 0.6305318 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.39001436 |

Nepal Merchant and Banking Finance Limited (NMBFL)

| F.Y | Market Price | Cash dividend | Realize rate of Return | $(R_j - R_j)$ | $(R_j - \bar{R}_j)^2$ | $(R_m - \bar{R}_m)$ | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ |
|---------|--------------|---------------|------------------------|---------------|---|---------------------|--|
| 2001/02 | 221 | 25 | | | | - | |
| 2002/03 | 171 | 20 | -0.135747 | -0.2695 | 0.0726283 | -0.3783 | 0.100737772 |
| 2003/04 | 175 | 20 | 0.1403509 | 0.006601 | 0.00092646 | -0.1947 | -0.001285222 |
| 2004/05 | 250 | 30 | 0.6 | 0.46625 | 0.21738921 | 0.0125 | 0.005828127 |
| 2005/06 | 276 | - | 0.104 | -0.02975 | 0.00088505 | 0.0708 | -0.002106289 |
| 2006/07 | 265 | - | -0.039855 | -0.1736 | 0.03013867 | 0.48954 | -0.084986549 |
| | | | 0.6687492 | | $(R_j - \bar{R}_j)^2 =$ = 0.32196773 | | $(R_j - \bar{R}_j) (R_m - \bar{R}_m)$ = 0.018187839 |

A. Calculation of Realize Rate of Return

$$R_j = \frac{P_t - P_{t-1} + D_t}{P_{t-1}} \{02/03=0.0724, 03/04=0.2013, 04/05= -0.1356, 05/06 = 0.6, 06/07 = 0.3762\}$$

B. Calculation of Expected Rate of Return

$$\bar{R}_j = \frac{\sum(R_j)}{n} = 0.22286$$

C. Calculation of Standard Deviation

$$\sigma_j = \frac{(R_j - \bar{R}_j)^2}{n} = 0.2519$$

$$j^2 = 0.06345$$

D. Calculation of Coefficient of Variation

$$CV_j = \frac{\sigma_j}{R_j} = 1.1304$$

E. Calculation of Co Variance

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n} = 0.03166$$

F. Calculation of Beta Coefficient

$$j = \frac{\text{Cov}(R_j, R_m)}{\sigma_{R_m}^2} = 0.3718$$

Note (Similar procedure has been applied to calculate realized rate of return, Expected rate of return, Standard Deviation , Co efficient of Variation ,and Beta Coefficient of the other Commercial banks and other under study)

Simple Regression Analysis between MPS and Various Financial Indicators

A. Calculation of Simple Regression Analysis between MPS and EPS

Nabil Bank Limited (NBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|---------|----------|--------------------------|--------------------------|------------|
| 2001/02 | 700 | 55.25 | 490000 | 3052.563 | 38675 |
| 2002/03 | 740 | 84.66 | 547600 | 7167.316 | 62648.40 |
| 2003/04 | 1000 | 92.61 | 1000000 | 8576.612 | 92610 |
| 2004/05 | 1505 | 105.49 | 2265025 | 11128.14 | 158762.5 |
| 2005/06 | 2240 | 129.21 | 5017600 | 16695.22 | 289430.40 |
| 2006/07 | 5050 | 137.08 | 25502500 | 18790.93 | 692254 |
| | X=11235 | Y=604.30 | X ² =34822725 | Y ² =65410.78 | XY=1334380 |

Nepal Investment Bank Limited (NIBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|-------------------------|--------------------------|-------------|
| 2001/02 | 760 | 33.59 | 577600 | 1128.288 | 25528.4 |
| 2002/03 | 795 | 39.56 | 632025 | 1564.994 | 31450.2 |
| 2003/04 | 940 | 51.7 | 883600 | 2672.89 | 48598 |
| 2004/05 | 800 | 39.5 | 640000 | 1560.25 | 31600 |
| 2005/06 | 1260 | 59.35 | 1587600 | 3522.423 | 74781 |
| 2006/07 | 1729 | 62.57 | 2989441 | 3915.005 | 108183.5 |
| | X=6284 | Y=286.27 | X ² =7310266 | Y ² =14363.85 | XY=320141.1 |

Standard Charter Bank Nepal Limited (SCBNL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|---------|----------|--------------------------|--------------------------|------------|
| 2001/02 | 1575 | 141.13 | 2480625 | 19917.68 | 222279.8 |
| 2002/03 | 1640 | 149.3 | 2689600 | 22290.49 | 244852 |
| 2003/04 | 1745 | 143.55 | 3045025 | 20606.6 | 250494.8 |
| 2004/05 | 2345 | 143.14 | 5499025 | 20489.06 | 335663.30 |
| 2005/06 | 3775 | 175.84 | 14250625 | 30919.71 | 663796 |
| 2006/07 | 5900 | 167.37 | 34810000 | 28012.72 | 987483 |
| | X=16980 | Y=920.33 | X ² =62774900 | Y ² =142236.3 | XY=2704569 |

Himalayan Bank Limited (HBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|-------------------------|--------------------------|--------------|
| 2001/02 | 1000 | 60.26 | 1000000 | 3631.268 | 60260 |
| 2002/03 | 836 | 49.45 | 698896 | 2445.303 | 41340.20 |
| 2003/04 | 840 | 49.05 | 705600 | 2405.903 | 41202 |
| 2004/05 | 920 | 47.91 | 846400 | 2295.368 | 44077.20 |
| 2005/06 | 1100 | 59.24 | 1210000 | 3509.378 | 65164 |
| 2006/07 | 1740 | 60.66 | 3027600 | 3679.636 | 105548.40 |
| | X=6436 | Y=326.57 | X ² =7488696 | Y ² =17966.85 | XY=357591.80 |

Nepal SBI Bank Limited (SBIBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|-------------------------|-------------------------|-------------|
| 2001/02 | 401 | 9.61 | 160801 | 92.3521 | 3853.61 |
| 2002/03 | 255 | 11.47 | 65025 | 131.5609 | 2924.85 |
| 2003/04 | 307 | 14.26 | 94249 | 203.3476 | 4377.82 |
| 2004/05 | 335 | 13.29 | 112225 | 176.6241 | 4452.15 |
| 2005/06 | 612 | 18.27 | 374544 | 333.7929 | 11181.24 |
| 2006/07 | 1176 | 39. | 1382976 | 1540.563 | 46158 |
| | X=3086 | Y=106.15 | X ² =2189820 | Y ² =2478.24 | XY=72947.67 |

Everest Bank Limited (EBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|-------------------------|--------------------------|-------------|
| 2001/02 | 405 | 32.91 | 164025 | 1083.068 | 13328.55 |
| 2002/03 | 445 | 29.9 | 198025 | 894.01 | 13305.5 |
| 2003/04 | 680 | 45.58 | 462400 | 2077.536 | 30994.4 |
| 2004/05 | 870 | 54.22 | 756900 | 2939.808 | 47171.4 |
| 2005/06 | 1379 | 62.78 | 1901641 | 3941.328 | 86573.62 |
| 2006/07 | 2430 | 78.4 | 5904900 | 6146.56 | 190512 |
| | X=6209 | Y=303.79 | X ² =9387891 | Y ² =17082.31 | XY=381885.5 |

Bank of Kathmandu Limited (BOKL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|-------------------------|--------------------------|-------------|
| 2001/02 | 254 | 2 | 64516 | 4 | 508 |
| 2002/03 | 198 | 17.72 | 39204 | 313.9984 | 3508.56 |
| 2003/04 | 295 | 27.5 | 87025 | 756.25 | 8112.5 |
| 2004/05 | 430 | 30.1 | 184900 | 906.01 | 12943 |
| 2005/06 | 850 | 43.67 | 722500 | 1907.069 | 37119.5 |
| 2006/07 | 1375 | 43.5 | 1890625 | 1892.25 | 59812.5 |
| | X=3402 | Y=164.49 | X ² =2988770 | Y ² =5779.577 | XY=122004.1 |

Nepal Development Bank Limited (NDBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|-----------|-----------------------|-------------------------|-------------|
| 2001/02 | 155 | 2.52 | 24025 | 6.3504 | 390.6 |
| 2002/03 | 140 | 0.75 | 19600 | 0.5625 | 105 |
| 2003/04 | 102 | -188.76 | 10404 | 36630.3 | -19253.5 |
| 2004/05 | 88 | 49.27 | 7744 | 2427.53 | 4335.76 |
| 2005/06 | 102 | -106.61 | 10404 | 11365.7 | -10874.2 |
| 2006/07 | 153 | -74.38 | 23409 | 5532.38 | -11380.1 |
| | X=740 | Y=-317.21 | X ² =95586 | Y ² =54962.9 | XY=-36676.5 |

Development Credit Bank Limited (DCBL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|---------|------------------------|-----------------------|-------------|
| 2001/02 | 152 | 5.85 | 23104 | 34.2225 | 889.2 |
| 2002/03 | 145 | 10.41 | 21025 | 108.368 | 1509.45 |
| 2003/04 | 167 | 19.22 | 27889 | 369.408 | 3209.74 |
| 2004/05 | 305 | 22.27 | 93025 | 495.953 | 6792.35 |
| 2005/06 | 390 | 122.17 | 152100 | 14925.5 | 47646.3 |
| 2006/07 | 800.0 | 16.78 | 640000 | 281.568 | 13424 |
| | X=1959 | Y=196.7 | X ² =957143 | Y ² =16215 | XY=73471.04 |

NIDC Capital Market Limited (NIDCCML)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|------------|------------------------|-------------------------|-------------|
| 2001/02 | - | - | 0 | 0 | 0 |
| 2002/03 | 0 | 0 | 0 | 0 | 0 |
| 2003/04 | 107 | 35.07 | 11449 | 1229.9 | 3752.49 |
| 2004/05 | 145 | 14.02 | 21025 | 196.56 | 2032.9 |
| 2005/06 | 208 | 58.88 | 43264 | 3466.85 | 12247.04 |
| 2006/07 | 455 | 48.52 | 207025 | 2354.19 | 22076.6 |
| | X =915 | Y = 156.49 | X ² =282763 | Y ² =7247.51 | XY=40109.03 |

Nepal Merchant Banking Finance Limited (NMBFL)

| F.Y | MPS(X) | EPS(Y) | X ² | Y ² | XY |
|---------|--------|------------|------------------------|-------------------------|-------------|
| 2001/02 | 221 | 14.54 | 48841 | 211.412 | 3213.34 |
| 2002/03 | 171 | 15.12 | 29241 | 228.614 | 2585.52 |
| 2003/04 | 175 | 21.08 | 30625 | 444.366 | 3689 |
| 2004/05 | 250 | 16.02 | 62500 | 256.64 | 4005 |
| 2005/06 | 276 | 28.07 | 76176 | 787.925 | 7747.32 |
| 2006/07 | 265 | 32.25 | 70225 | 1040.06 | 8546.25 |
| | X=1358 | Y = 127.08 | X ² =317608 | Y ² =2969.02 | XY=29786.43 |

B. Calculation of Simple Regression Analysis between MPS and NWPS

Nabil Bank Limited (NBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|---------|---------|--------------------------|------------------------|------------|
| 2001/02 | 700 | 233 | 490000 | 54289 | 163100 |
| 2002/03 | 740 | 267 | 547600 | 71289 | 197580 |
| 2003/04 | 1000 | 301 | 1000000 | 90601 | 301000 |
| 2004/05 | 1505 | 337 | 2265025 | 113569 | 507185 |
| 2005/06 | 2240 | 381 | 5017600 | 145161 | 853440 |
| 2006/07 | 5050 | 418 | 25502500 | 174724 | 2110900 |
| | X=11235 | Y=1937 | X ² =34822725 | Y ² =649633 | XY=4133205 |

Nepal Investment Bank Limited (NIBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|-----------|-------------------------|--------------------------|------------|
| 2001/02 | 760 | 307.95 | 577600 | 94833.20 | 234042 |
| 2002/03 | 795 | 216.24 | 632025 | 46759.74 | 171910.8 |
| 2003/04 | 940 | 246.89 | 883600 | 60954.67 | 232076.6 |
| 2004/05 | 800 | 200.8 | 640000 | 40320.67 | 160640 |
| 2005/06 | 1260 | 239.67 | 1587600 | 57441.71 | 301984.2 |
| 2006/07 | 1729 | 234.37 | 2989441 | 54929.3 | 405225.7 |
| | X=6284 | Y=1445.92 | X ² =7310266 | Y ² =355239.3 | XY=1505879 |

Standard Charter Bank Nepal Limited(SCBNL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|---------|-----------|--------------------------|-------------------------|------------|
| 2001/02 | 1575 | 363.86 | 2480625 | 132349.1 | 573079.5 |
| 2002/03 | 1640 | 403.15 | 2689600 | 162529.9 | 661166 |
| 2003/04 | 1745 | 399.25 | 3045025 | 159400.6 | 696691.3 |
| 2004/05 | 2345 | 422.38 | 5499025 | 178404.9 | 990481.1 |
| 2005/06 | 3775 | 468.22 | 14250625 | 219230 | 1767531 |
| 2006/07 | 5900 | 512.12 | 34810000 | 262266.9 | 3021508 |
| | X=16980 | Y=2568.98 | X ² =62774900 | Y ² =1114226 | XY=7710456 |

Himalayan Bank Limited (HBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|-----------|-------------------------|--------------------------|------------|
| 2001/02 | 1000 | 220 | 1000000 | 48400 | 220000 |
| 2002/03 | 836 | 247.81 | 698896 | 61409.8 | 207169.2 |
| 2003/04 | 840 | 246.93 | 705600 | 60974.42 | 207421.2 |
| 2004/05 | 920 | 239.59 | 846400 | 57403.37 | 220422.8 |
| 2005/06 | 1100 | 228.72 | 1210000 | 52312.84 | 251592 |
| 2006/07 | 1740 | 264.74 | 3027600 | 70087.27 | 460647.6 |
| | X=6436 | Y=1447.79 | X ² =7488496 | Y ² =350587.7 | XY=1567253 |

Nepal SBI Bank Limited (SBIBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|---------|----------|-------------------------|------------------------|-------------|
| 2001/02 | 401 | 131.88 | 160801 | 17392.33 | 52883.88 |
| 2002/03 | 255 | 134.03 | 65025 | 17964.04 | 34177.65 |
| 2003/04 | 307 | 146.8 | 94249 | 21550.24 | 45067.6 |
| 2004/05 | 335 | 159.54 | 112225 | 25453.01 | 53445.9 |
| 2005/06 | 612 | 151.78 | 374544 | 23037.17 | 92889.36 |
| 2006/07 | 1176 | 178.04 | 1382976 | 31698.24 | 209375 |
| | X=11235 | Y=902.07 | X ² =2189820 | Y ² =137095 | XY=487839.4 |

Everest Bank Limited (EBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|-----------|-------------------------|--------------------------|------------|
| 2001/02 | 405 | 170.76 | 164025 | 29158.98 | 69157.8 |
| 2002/03 | 445 | 150.1 | 198025 | 22530.01 | 66794.5 |
| 2003/04 | 680 | 171.52 | 462400 | 29419.11 | 116633.6 |
| 2004/05 | 870 | 219.87 | 756900 | 48342.82 | 191286.9 |
| 2005/06 | 1379 | 217.67 | 1901641 | 47380.23 | 300166.90 |
| 2006/07 | 2430 | 292.75 | 5904900 | 85702.56 | 711382.5 |
| | X=6209 | Y=1222.67 | X ² =9387891 | Y ² =262533.7 | XY=1455422 |

Bank of Kathmandu Limited (BOKL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|-----------|-------------------------|------------------------|-------------|
| 2001/02 | 254 | 171.83 | 64516 | 29525.55 | 43644.82 |
| 2002/03 | 198 | 192.52 | 39204 | 37063.95 | 38118.96 |
| 2003/04 | 295 | 218.38 | 87025 | 47689.82 | 64422.1 |
| 2004/05 | 430 | 213.6 | 184900 | 45624.96 | 91848 |
| 2005/06 | 850 | 230.67 | 722500 | 53208.65 | 196069.5 |
| 2006/07 | 1375 | 162.81 | 1890625 | 26507.1 | 223863.8 |
| | X=3402 | Y=1189.81 | X ² =2988770 | Y ² =239620 | XY=657967.1 |

Nepal Development Bank Limited (NDBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|-----------------------|---------------------------|------------|
| 2001/02 | 155 | 107.25 | 24025 | 11502.56 | 16623.75 |
| 2002/03 | 140 | 108 | 19600 | 11664 | 15120 |
| 2003/04 | 102 | -74.69 | 10404 | 5578.60 | -7618.38 |
| 2004/05 | 88 | 230.94 | 7744 | 53333.28 | 20322.72 |
| 2005/06 | 102 | -138.22 | 10404 | 19104.77 | -14098.44 |
| 2006/07 | 153 | -129.20 | 23409 | 16692.64 | -19767.6 |
| | X=740 | Y=104.08 | X ² =95586 | Y ² =117875.85 | XY=1334380 |

Development Credit Bank Limited (DCBL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|-----------|------------------------|----------------------------|------------|
| 2001/02 | 152 | 105.93 | 23104 | 11221.16 | 16101.36 |
| 2002/03 | 145 | 105.27 | 21025 | 11081.77 | 15264.15 |
| 2003/04 | 167 | 112.72 | 27889 | 12705.80 | 18824.24 |
| 2004/05 | 305 | 120.48 | 93025 | 14515.43 | 36746.4 |
| 2005/06 | 390 | 1131.29 | 152100 | 1279817.06 | 441203.1 |
| 2006/07 | 800.0 | 129.28 | 640000 | 16713.32 | 103424 |
| | X=1959 | Y=1704.97 | X ² =957143 | Y ² =1346054.55 | XY=1334380 |

NIDC Capital Market Limited (NIDCCML)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|------------------------|--------------------------|------------|
| 2001/02 | - | - | 0 | 0 | 0 |
| 2002/03 | 0 | 0 | 0 | 0 | 0 |
| 2003/04 | 107 | 128.40 | 11449 | 16486.56 | 13738.8 |
| 2004/05 | 145 | 154.87 | 21025 | 23984.72 | 22456.15 |
| 2005/06 | 208 | 154.51 | 43264 | 23873.34 | 32138.08 |
| 2006/07 | 455 | 166.14 | 207025 | 27602.50 | 75593.7 |
| | X=915 | Y=603.92 | X ² =282763 | Y ² =91947.12 | XY=1334380 |

Nepal Merchant & Banking Finance Limited (NMBFL)

| F.Y | MPS(X) | NWPS(Y) | X ² | Y ² | XY |
|---------|--------|----------|------------------------|--------------------------|--------------|
| 2001/02 | 221 | 70.78 | 48841 | 5009.81 | 15642.38 |
| 2002/03 | 171 | 75.90 | 29241 | 5760.81 | 12978.9 |
| 2003/04 | 175 | 96.99 | 30625 | 9407.06 | 16973.25 |
| 2004/05 | 250 | 97.44 | 62500 | 9494.55 | 24360 |
| 2005/06 | 276 | 177.98 | 76176 | 31676.88 | 49122.48 |
| 2006/07 | 265 | 160.12 | 70225 | 25638.41 | 42431.8 |
| | X=1358 | Y=679.21 | X ² =317608 | Y ² =86987.53 | XY=161508.81 |

c. Calculation of Simple Regression Analysis between MPS and DPS

Nabil Bank Limited (NBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|---------|--------|--------------------------|-----------------------|-----------|
| 2001/02 | 700 | 30 | 490000 | 900 | 21000 |
| 2002/03 | 740 | 50 | 547600 | 2500 | 37000 |
| 2003/04 | 1000 | 65 | 1000000 | 4225 | 65000 |
| 2004/05 | 1505 | 70 | 2265025 | 4900 | 105350 |
| 2005/06 | 2240 | 85 | 5017600 | 7225 | 190400 |
| 2006/07 | 5050 | 100 | 25502500 | 10000 | 505000 |
| | X=11235 | Y=400 | X ² =34822725 | Y ² =29750 | XY=923750 |

Nepal Investment Bank Limited (NIBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|--------|-------------------------|-------------------------|----------|
| 2001/02 | 760 | 0 | 577600 | 0 | 0 |
| 2002/03 | 795 | 20 | 632025 | 400 | 15900 |
| 2003/04 | 940 | 15 | 883600 | 225 | 14100 |
| 2004/05 | 800 | 12.5 | 640000 | 156.25 | 10000 |
| 2005/06 | 1260 | 20 | 1587600 | 400 | 25200 |
| 2006/07 | 1729 | 5 | 2989441 | 25 | 8645 |
| | X=6284 | Y=72.5 | X ² =7310266 | Y ² =1206.25 | XY=73845 |

Standard Charter Bank Nepal Limited(SCBNL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|---------|--------|--------------------------|-----------------------|------------|
| 2001/02 | 1575 | 100 | 2480625 | 10000 | 157500 |
| 2002/03 | 1640 | 110 | 2689600 | 12100 | 180400 |
| 2003/04 | 1745 | 110 | 3045025 | 12100 | 191950 |
| 2004/05 | 2345 | 120 | 5499025 | 14400 | 281400 |
| 2005/06 | 3775 | 130 | 14250625 | 16900 | 490750 |
| 2006/07 | 5900 | 80 | 34810000 | 6400 | 472000 |
| | X=16980 | Y=650 | X ² =62774900 | Y ² =71900 | XY=1774000 |

Himalayan Bank Limited (HBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|--------|-------------------------|--------------------------|-------------|
| 2001/02 | 1000 | 25 | 1000000 | 625 | 25000 |
| 2002/03 | 836 | 1.32 | 698896 | 1.7424 | 1103.52 |
| 2003/04 | 840 | 0 | 705600 | 0 | 0 |
| 2004/05 | 920 | 11.58 | 846400 | 134.0964 | 10653.6 |
| 2005/06 | 1100 | 30 | 1210000 | 900 | 33000 |
| 2006/07 | 1740 | 15 | 3027600 | 225 | 26100 |
| | X=6436 | Y=82.9 | X ² =7488496 | Y ² =1885.839 | XY=95857.12 |

Nepal SBI Bank Limited (SBIBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|---------|-------------------------|--------------------------|-------------|
| 2001/02 | 401 | 0 | 160801 | 0 | 0 |
| 2002/03 | 255 | 8 | 65025 | 64 | 2040 |
| 2003/04 | 307 | 0 | 94249 | 0 | 0 |
| 2004/05 | 335 | 0 | 112225 | 0 | 0 |
| 2005/06 | 612 | 5 | 374544 | 25 | 3060 |
| 2006/07 | 1176 | 47.59 | 1382976 | 2264.808 | 55965.84 |
| | X=3086 | Y=60.59 | X ² =2189820 | Y ² =2353.808 | XY=61065.84 |

Everest Bank Limited (EBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|--------|-------------------------|----------------------|----------|
| 2001/02 | 405 | 0 | 164025 | 0 | 0 |
| 2002/03 | 445 | 20 | 198025 | 400 | 8900 |
| 2003/04 | 680 | 20 | 462400 | 400 | 13600 |
| 2004/05 | 870 | 0 | 756900 | 0 | 0 |
| 2005/06 | 1379 | 25 | 1901641 | 625 | 34475 |
| 2006/07 | 2430 | 10 | 5904900 | 100 | 24300 |
| | X=6209 | Y=75 | X ² =9387891 | Y ² =1525 | XY=81275 |

Bank of Kathmandu Limited (BOKL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|--------|-------------------------|----------------------|----------|
| 2001/02 | 254 | 10 | 64516 | 100 | 2540 |
| 2002/03 | 198 | 05 | 39204 | 25 | 990 |
| 2003/04 | 295 | 10 | 87025 | 100 | 2950 |
| 2004/05 | 430 | 15 | 184900 | 225 | 6450 |
| 2005/06 | 850 | 18 | 722500 | 324 | 15300 |
| 2006/07 | 1375 | 20 | 1890625 | 400 | 27500 |
| | X=3402 | Y=78 | X ² =2988770 | Y ² =1174 | XY=55730 |

Nepal Development Bank Limited (NDBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|--------|-----------------------|-------------------|------|
| 2001/02 | 155 | - | 24025 | 0 | 0 |
| 2002/03 | 140 | - | 19600 | 0 | 0 |
| 2003/04 | 102 | - | 10404 | 0 | 0 |
| 2004/05 | 88 | - | 7744 | 0 | 0 |
| 2005/06 | 102 | - | 10404 | 0 | 0 |
| 2006/07 | 153 | - | 23409 | 0 | 0 |
| | X=740 | Y=0 | X ² =95586 | Y ² =0 | XY=0 |

Development Credit Bank Limited (DCBL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|---------|------------------------|---------------------|------------|
| 2001/02 | 152 | - | 23104 | | 0 |
| 2002/03 | 145 | 0 | 21025 | | 0 |
| 2003/04 | 167 | 10 | 27889 | 100 | 1670 |
| 2004/05 | 305 | 10 | 93025 | 100 | 3050 |
| 2005/06 | 390 | 12 | 152100 | 144 | 4680 |
| 2006/07 | 800.0 | - | 640000 | | |
| | X=1959 | Y=604.3 | X ² =957143 | Y ² =344 | XY=9400.00 |

NIDC Capital Market Limited (NIDCCML)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|---------|------------------------|---------------------|------|
| 2001/02 | - | 15 | 0 | 225 | |
| 2002/03 | 0 | - | 0 | | |
| 2003/04 | 107 | - | 11449 | | |
| 2004/05 | 145 | - | 21025 | | |
| 2005/06 | 208 | - | 43264 | | |
| 2006/07 | 455 | - | 207025 | | |
| | X=915 | Y=604.3 | X ² =282763 | Y ² =225 | XY=0 |

Nepal Merchant Banking & Finance Limited (NMBFL)

| F.Y | MPS(X) | DPS(Y) | X ² | Y ² | XY |
|---------|--------|---------|------------------------|----------------------|----------|
| 2001/02 | 221 | 25 | 48841 | 625 | 5525 |
| 2002/03 | 171 | 20 | 29241 | 400 | 3420 |
| 2003/04 | 175 | 20 | 30625 | 400 | 3500 |
| 2004/05 | 250 | 30 | 62500 | 900 | 7500 |
| 2005/06 | 276 | - | 76176 | | |
| 2006/07 | 265 | - | 70225 | | |
| | X=1358 | Y=604.3 | X ² =317608 | Y ² =2325 | XY=19945 |

Calculation of correlation coefficient, coefficient of determination, Regression Analysis and T- test between MPS and EPS of Nepal Investment Bank Limited

A. Calculation of Correlation Coefficient

$$r = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}} = \frac{6 \times 320141.1 - (6284)(286.27)}{\sqrt{43861596 - 39488656} \sqrt{86183.04 - 81950.5129}} = 0.8962$$

B. Co efficient of Determination

$$r^2 = 0.8032$$

C . Calculation of Regression constant (a) and Regression coefficient (b)

Here

Independent Variable (EPS) = Y

Dependent Variable (MPS) = X

Regression Equation of Y on X is

$$Y = a + b x$$

Where

a = Regression Constant

b = Regression Coefficient (Slope of the regression line)

According to the principle of the least squares, two normal equations for estimating (a) and (b) is :

$$Y = na + b X \dots\dots\dots(I)$$

$$XY = a \sum X + b \sum X^2 \dots\dots\dots(II)$$

Solving these two normal equations we get

$$b = \frac{N\sum XY - (\sum X)(\sum Y)}{N\sum X^2 - (\sum X)^2} = \frac{6 \times 320141.13 - (6284)(286.27)}{43861596 - 39488656} = 0.0279$$

Substituting the value of (b) on equation (I)

$$Y = na + b X$$

$$286.27 = 6a + 0.0279 \times 6284$$

$$a = 18.49$$

C. To find the value for t- test

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0.8962\sqrt{6-2}}{\sqrt{1-0.8032}} = 4.04$$

E. Tabulated Value of t at 5% level of significance = 2.776

Note: {Similar procedure has been applied to calculate the parameters of simple Regression Analysis and t - test of the other commercial banks and other study)

Annex-5
Multiple Regression Analysis between MPS and
Various Financial Indicators

A. Multiple Regression Analysis of MPS on EPS and NWPS

Nabil Bank Limited (NBL)

| F.Y | MPS (X_1) | EPS (X_2) | NWPS (X_3) | $X_1 X_2$ | $X_1 X_3$ | $X_2 X_3$ | X_1^2 | X_2^2 | X_3^2 |
|-------|------------------|-------------------|-------------------|--------------------------|------------------------|--------------------------|-----------------------|------------------------|---------------------|
| 01/02 | 700 | 55.25 | 233 | 38675 | 163100 | 12873.25 | 490000 | 3052.58 | 54289 |
| 02/03 | 740 | 84.66 | 267 | 62648.4 | 197580 | 22604.22 | 547600 | 7167.32 | 71289 |
| 03/04 | 1000 | 92.61 | 301 | 92610 | 301000 | 27875.61 | 1000000 | 8576.61 | 90601 |
| 04/05 | 1505 | 105.49 | 337 | 158762.45 | 507185 | 35550.13 | 2265025 | 11128.14 | 113569 |
| 05/06 | 2240 | 129.21 | 381 | 289430.4 | 853440 | 49229.01 | 5017600 | 16695.22 | 145161 |
| 06/07 | 5050 | 137.08 | 418 | 692254 | 2110900 | 57299.44 | 25502500 | 18790.93 | 174724 |
| N=6 | $X_1 =$ 11235 | $X_2 =$ 604.30 | $X_3 =$ 1937 | $X_1 X_2 =$ 1334380.3 | $X_1 X_3 =$ 4133205 | $X_2 X_3 =$ 205431.66 | $X_1^2 =$ 34822725 | $X_2^2 =$ 65410.781 | $X_3^2 =$ 649633 |

Nepal Investment Bank Limited (NIBL)

| F.Y | MPS (X_1) | EPS (X_2) | NWPS (X_3) | $X_1 X_2$ | $X_1 X_3$ | $X_2 X_3$ | X_1^2 | X_2^2 | X_3^2 |
|-------|------------------|-------------------|--------------------|--------------------------|---------------------------|-------------------------|----------------------|-----------------------|------------------------|
| 01/02 | 760 | 33.59 | 307.95 | 25528.4 | 234042 | 10344.04 | 577600 | 1128.29 | 94833.20 |
| 02/03 | 795 | 39.56 | 216.24 | 31450.2 | 171910.8 | 8554.45 | 632025 | 1564.99 | 46759.74 |
| 03/04 | 940 | 51.7 | 246.89 | 48598 | 232076.6 | 12764.21 | 883600 | 2672.89 | 60954.67 |
| 04/05 | 800 | 39.5 | 200.8 | 31600 | 160640 | 7931.60 | 640000 | 1560.25 | 40320.64 |
| 05/06 | 1260 | 59.35 | 239.67 | 74781 | 301984.2 | 14224.41 | 1587600 | 3522.42 | 57441.71 |
| 06/07 | 1729 | 62.57 | 234.37 | 108183.5 | 405225.73 | 14664.53 | 2989441 | 3915.00 | 54929.30 |
| N=6 | $X_1 =$ 6284 | $X_2 =$ 286.27 | $X_3 =$ 1445.92 | $X_1 X_2 =$ 320141.13 | $X_1 X_3 =$ 1505879.33 | $X_2 X_3 =$ 68483.25 | $X_1^2 =$ 7310266 | $X_2^2 =$ 14363.85 | $X_3^2 =$ 355239.26 |

Standard Charter Bank Nepal Limited(SCBNL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|---------------------------|----------------------------|-----------------------------|--|---|---|---|---|--|
| 01/02 | 1575 | 141.13 | 363.86 | 222279.75 | 573079.5 | 51351.56 | 2480625 | 19917.68 | 132394.10 |
| 02/03 | 1640 | 149.3 | 403.15 | 244852 | 661166 | 60190.30 | 2689600 | 22290.49 | 162529.92 |
| 03/04 | 1745 | 143.55 | 399.25 | 250494.75 | 696691.25 | 57312.34 | 3045025 | 20606.60 | 159400.56 |
| 04/05 | 2345 | 143.14 | 422.38 | 335663.3 | 990481.1 | 60459.47 | 5499025 | 20489.06 | 178404.86 |
| 05/06 | 3775 | 175.84 | 468.22 | 663796 | 1767530.5 | 82331.80 | 14250625 | 30919.71 | 219229.97 |
| 06/07 | 5900 | 167.37 | 512.12 | 987483 | 3021508 | 85713.52 | 34810000 | 28012.72 | 262266.89 |
| N=6 | X ₁ = 16980 | X ₂ = 920.33 | X ₃ = 2568.98 | X ₁ X ₂ = 2704568.8 | X ₁ X ₃ = 7710456.35 | X ₂ X ₃ = 397359 | X ² ₁ = 62774900 | X ² ₂ = 142236.3 | X ² ₃ = 1114226.3 |

Himalayan Bank Limited (HBL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|----------------------------|-----------------------------|---|---|--|--|---|---|
| 01/02 | 1000 | 60.26 | 220 | 60260 | 220000 | 13257.20 | 1000000 | 3631.27 | 48400.00 |
| 02/03 | 836 | 49.45 | 247.81 | 41340.2 | 207169.16 | 12254.20 | 698896 | 2445.30 | 61409.80 |
| 03/04 | 840 | 49.05 | 246.93 | 41202 | 207421.2 | 12111.92 | 705600 | 2405.90 | 60974.42 |
| 04/05 | 920 | 47.91 | 239.59 | 44077.2 | 220422.8 | 11478.76 | 846400 | 2295.37 | 57403.37 |
| 05/06 | 1100 | 59.24 | 228.72 | 65164 | 251592 | 13549.37 | 1210000 | 3509.38 | 52312.84 |
| 06/07 | 1740 | 60.66 | 264.74 | 105548.4 | 460647.6 | 16059.13 | 3027600 | 3679.64 | 70087.27 |
| N=6 | X ₁ = 6436 | X ₂ = 326.57 | X ₃ = 1447.79 | X ₁ X ₂ = 357591.8 | X ₁ X ₃ = 1567252.76 | X ₂ X ₃ = 78710.579 | X ² ₁ = 7488496 | X ² ₂ = 17966.85 | X ² ₃ = 350587.7 |

Nepal SBI Bank Limited (SBIBL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|----------------------------|----------------------------|---|--|--|--|---|--|
| 01/02 | 401 | 9.61 | 131.88 | 3853.61 | 52883.88 | 1267.37 | 160801 | 92.35 | 17392.33 |
| 02/03 | 255 | 11.47 | 134.03 | 2924.85 | 34177.65 | 1537.32 | 65025 | 131.56 | 17964.04 |
| 03/04 | 307 | 14.26 | 146.8 | 4377.82 | 45067.6 | 2093.37 | 94249 | 203.35 | 21550.24 |
| 04/05 | 335 | 13.29 | 159.54 | 4452.15 | 53445.9 | 2120.29 | 112225 | 176.62 | 25453.01 |
| 05/06 | 612 | 18.27 | 151.78 | 11181.24 | 92889.36 | 2773.02 | 374544 | 333.79 | 23037.17 |
| 06/07 | 1176 | 39. | 178.04 | 45864 | 209375.04 | 6943.56 | 1382976 | 1521.00 | 31698.24 |
| N=6 | X ₁ = 3086 | X ₂ = 106.15 | X ₃ = 902.07 | X ₁ X ₂ = 72653.67 | X ₁ X ₃ = 487839.43 | X ₂ X ₃ = 16734.926 | X ² ₁ = 2189820 | X ² ₂ = 2458.678 | X ² ₃ = 137095.04 |

Everest Bank Limited (EBL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|----------------------------|-----------------------------|--|---|--|--|---|--|
| 01/02 | 405 | 32.91 | 170.76 | 13328.55 | 69157.8 | 5619.71 | 164025 | 1083.07 | 29158.98 |
| 02/03 | 445 | 29.9 | 150.1 | 13305.5 | 66794.5 | 4487.99 | 198025 | 894.01 | 22530.01 |
| 03/04 | 680 | 45.58 | 171.52 | 30994.4 | 116633.6 | 7817.88 | 462400 | 2077.54 | 29419.11 |
| 04/05 | 870 | 54.22 | 219.87 | 47171.4 | 191286.9 | 11921.35 | 756900 | 2939.81 | 48342.82 |
| 05/06 | 1379 | 62.78 | 217.67 | 86573.62 | 300166.93 | 13665.32 | 1901641 | 3941.33 | 47380.23 |
| 06/07 | 2430 | 78.4 | 292.75 | 190512 | 711382.5 | 22951.60 | 5904900 | 6146.56 | 85702.56 |
| N=6 | X ₁ = 6209 | X ₂ = 303.79 | X ₃ = 1222.67 | X ₁ X ₂ = 381885.47 | X ₁ X ₃ = 1455422.23 | X ₂ X ₃ = 66463.857 | X ² ₁ = 9387891 | X ² ₂ = 17082.31 | X ² ₃ = 262533.71 |

Bank of Kathmandu Limited (BOKL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|----------------------------|-----------------------------|--|--|--|--|---|--|
| 01/02 | 254 | 2 | 171.83 | 508 | 43644.82 | 343.66 | 64516 | 4.00 | 29525.55 |
| 02/03 | 198 | 17.72 | 192.52 | 3508.56 | 38118.96 | 3411.45 | 39204 | 314.00 | 37063.95 |
| 03/04 | 295 | 27.5 | 218.38 | 8112.5 | 64422.1 | 6005.45 | 87025 | 756.25 | 47689.82 |
| 04/05 | 430 | 30.1 | 213.6 | 12943 | 91848 | 6429.36 | 184900 | 906.01 | 45624.96 |
| 05/06 | 850 | 43.67 | 230.67 | 37119.5 | 196069.5 | 10073.36 | 722500 | 1907.07 | 53208.65 |
| 06/07 | 1375 | 43.5 | 162.81 | 59812.5 | 223863.75 | 7082.24 | 1890625 | 1892.25 | 26507.10 |
| N=6 | X ₁ = 3402 | X ₂ = 164.49 | X ₃ = 1189.81 | X ₁ X ₂ = 122004.06 | X ₁ X ₃ = 657967.13 | X ₂ X ₃ = 33345.518 | X ² ₁ = 2988770 | X ² ₂ = 5779.577 | X ² ₃ = 239620.03 |

Nepal Development Bank Limited (NDBL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|-----------------------------|----------------------------|---|--|--|--|--|--|
| 01/02 | 155 | 2.52 | 107.25 | 390.6 | 16623.8 | 270.27 | 24025 | 6.3504 | 11502.56 |
| 02/03 | 140 | 0.75 | 108 | 105 | 15120 | 81 | 19600 | 0.5625 | 11664 |
| 03/04 | 102 | -188.76 | -74.69 | -19254 | -7618.38 | 14098.5 | 10404 | 36630.3 | 5578.60 |
| 04/05 | 88 | 49.27 | 230.94 | 4335.76 | 20322.7 | 11378.4 | 7744 | 2427.53 | 53333.284 |
| 05/06 | 102 | -106.61 | -138.22 | -10874 | -14098.4 | 14735.6 | 10404 | 11365.7 | 19104.768 |
| 06/07 | 153 | -74.38 | -129.20 | -11380 | -19767.6 | 1609.9 | 23409 | 5532.38 | 16692.64 |
| N=6 | X ₁ = 740 | X ₂ = -317.21 | X ₃ = 104.08 | X ₁ X ₂ = -36677 | X ₁ X ₃ = 10582.1 | X ₂ X ₃ = 50173.7 | X ² ₁ = 95586 | X ² ₂ = 54962.9 | X ² ₃ = 117875.85 |

Development Credit Bank Limited (DCBL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|---------------------------|-----------------------------|---|---|---|---|--|--|
| 01/02 | 152 | 5.85 | 105.93 | 889.2 | 16101.4 | 619.691 | 23104 | 34.2225 | 11221.17 |
| 02/03 | 145 | 10.41 | 105.27 | 1509.45 | 15264.2 | 1095.86 | 21025 | 108.368 | 11081.773 |
| 03/04 | 167 | 19.22 | 112.72 | 3209.74 | 18824.2 | 2166.48 | 27889 | 369.408 | 12705.798 |
| 04/05 | 305 | 22.27 | 120.48 | 6792.35 | 36746.4 | 2683.09 | 93025 | 495.953 | 14515.43 |
| 05/06 | 390 | 122.17 | 1131.29 | 47646.3 | 441203 | 138210 | 152100 | 14925.5 | 1279817.1 |
| 06/07 | 800.0 | 16.78 | 129.28 | 13424 | 103424 | 2169.32 | 640000 | 281.568 | 16713.318 |
| N=6 | X ₁ = 1959 | X ₂ = 196.7 | X ₃ = 1704.97 | X ₁ X ₂ = 73471.00 | X ₁ X ₃ = 631563 | X ₂ X ₃ = 146944 | X ² ₁ = 957143 | X ² ₂ = 16215 | X ² ₃ = 1346054.5 |

NIDC Capital Market Limited (NIDCCML)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|----------------------------|----------------------------|--|---|--|---|--|--|
| 01/02 | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 |
| 02/03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03/04 | 107 | 35.07 | 128.40 | 3752.49 | 13738.8 | 4502.99 | 11449 | 1229.9 | 16486.56 |
| 04/05 | 145 | 14.02 | 154.87 | 2032.9 | 22456.2 | 2171.28 | 21025 | 196.56 | 23984.717 |
| 05/06 | 208 | 58.88 | 154.51 | 12247 | 32138.1 | 9097.55 | 43264 | 3466.85 | 23873.34 |
| 06/07 | 455 | 48.52 | 166.14 | 22076.6 | 75593.7 | 8061.11 | 207025 | 2354.19 | 27602.5 |
| N=6 | X ₁ = 915 | X ₂ = 156.49 | X ₃ = 603.92 | X ₁ X ₂ = 40109 | X ₁ X ₃ = 143927 | X ₂ X ₃ = 23832.9 | X ² ₁ = 282763 | X ² ₂ = 7247.51 | X ² ₃ =91947.12 |

Nepal Merchant and Banking Finance Limited (NMBFL)

| F.Y | MPS (X ₁) | EPS (X ₂) | NWPS (X ₃) | X ₁ X ₂ | X ₁ X ₃ | X ₂ X ₃ | X ² ₁ | X ² ₂ | X ² ₃ |
|-------|--------------------------|----------------------------|----------------------------|--|---|--|---|--|---|
| 01/02 | 221 | 14.54 | 70.78 | 3213.34 | 15642.4 | 1029.14 | 48841 | 211.412 | 5009.81 |
| 02/03 | 171 | 15.12 | 75.90 | 2585.52 | 12978.9 | 1147.61 | 29241 | 228.614 | 5760.81 |
| 03/04 | 175 | 21.08 | 96.99 | 3689 | 16973.3 | 2044.55 | 30625 | 444.366 | 9407.0601 |
| 04/05 | 250 | 16.02 | 97.44 | 4005 | 24360 | 1560.99 | 62500 | 256.64 | 9494.56 |
| 05/06 | 276 | 28.07 | 177.98 | 7747.32 | 49122.5 | 4995.9 | 76176 | 787.925 | 31676.88 |
| 06/07 | 265 | 32.25 | 160.12 | 8546.25 | 42431.8 | 5163.87 | 70225 | 1040.06 | 25638.414 |
| N=6 | X ₁ = 1358 | X ₂ = 127.08 | X ₃ = 679.21 | X ₁ X ₂ = 29786.4 | X ₁ X ₃ = 161509 | X ₂ X ₃ = 15942.1 | X ² ₁ = 317608 | X ² ₂ = 2969.02 | X ² ₃ = 86987.53 |

Calculation of Regression Analysis Co efficient of determination and F- test of MPS on EPS and NWPS of Nepal Investment Bank Limited

A. Calculation of Values of intercept and Regression Co efficient

The values of constants a_1, b_1 & b_2 can be obtained by solving following three normal equations simultaneously

$$X_1 = na_1 + b_1 X_2 + b_2 X_3 \dots\dots\dots(I)$$

$$X_1 X_2 = a_1 X_2 + b_1 X_2^2 + b_2 X_2 X_3 \dots\dots\dots(II)$$

$$X_1 X_3 = a_1 X_3 + b_1 X_2 X_3 + b_2 X_3^2 \dots\dots\dots(III)$$

Solving equation, I, II & III we get

Intercept (a_1) = - 585.2943291

Regression Co efficient of MPS on EPS when NWPS is held constant (b_1) = 29.47723307

Regression Co efficient of MPS on EPS when NWPS is held constant (b_2) = 0.938723072

B. Co efficient of Determination

$$R^2 = \frac{a_1 \sum X_1 + b_1 \sum X_1 X_2 + b_2 \sum X_1 X_3 - n(\bar{X}_1)^2}{\sum X_1^2 - n(\bar{X}_1)^2}$$

$$R^2 = 0.810959414$$

C. To find the calculate value of F- test

$$F = \frac{\text{Regression Mean Square (MSR)}}{\text{Error Mean Square (MSE)}}$$

| Source of Variation | df | Sum of Squares (SS) | Mean of Squares (MS) | F- ratio at 5% level of significance |
|------------------------|----|---------------------|----------------------|---|
| Explained (Regression) | 2 | 591046.1436 | 295523.1 | $F = \frac{(MSR)}{(MSE)} = \frac{295523.1}{6.434804}$ = 45925.73 |
| Un Explained (Error) | 3 | 137777.1897 | 45925.73 | |
| Total | 5 | 728823.3333 | | |

D. Tabulated value of ($F_{2,3}$) at 5% level of significance = 9.5521

Note (Similar procedure has been applied to calculate the parameters of Multiple Regression Analysis and F- test of the others commercial Banks and other Organization under study)

Annex-6

Run Test of the Sample Commercial Banks and other under study

A. Summary of the monthly -wise Market Price per share of the sample commercial Banks and others

| 1. Market Price of NBL | | | | | 2. Market Price of (NIBL) | | | | 3. Market Price of SCBNL | | | |
|------------------------|------|------|------|------|----------------------------|------|------|------|--------------------------|------|------|------|
| Month | 2005 | 2006 | 2007 | 2008 | 2005 | 2006 | 2007 | 2008 | 2005 | 2006 | 2007 | 2008 |
| Jan | | 1832 | 3320 | 4134 | | 930 | 1245 | 1627 | | 2902 | 4500 | 6100 |
| Feb | | 2065 | 3090 | 3810 | | 976 | 1095 | 1355 | | 3101 | 4215 | 4850 |
| March | | 2008 | 3150 | 4300 | | 951 | 1100 | 1525 | | 3145 | 4220 | 5200 |
| April | | 2280 | 3500 | 4340 | | 1261 | 1170 | 1804 | | 3700 | 4500 | 5500 |
| May | | 2100 | 3790 | | | 1175 | 1475 | | | 3600 | 4850 | |
| Jun | | 2240 | 5050 | | | 1260 | 1729 | | | 3775 | 5900 | |
| July | 1634 | 2250 | 5010 | | 850 | 1275 | 1980 | | 2400 | 3740 | 6200 | |
| Aug | 1564 | 2140 | 6000 | | 790 | 1270 | 2425 | | 2405 | 3625 | 7010 | |
| Sep | 1620 | 2295 | 4263 | | 795 | 1456 | 2675 | | 2370 | 4000 | 7938 | |
| Oct | 1625 | 2870 | 4335 | | 829 | 1120 | 2440 | | 2411 | 4355 | 8700 | |
| Nov | 1625 | 3350 | 5425 | | 788 | 1280 | 2600 | | 2575 | 4650 | 5260 | |
| Dec | 1742 | 3400 | 4600 | | 800 | 1270 | 1750 | | 2685 | 4600 | 6745 | |

| 4. Market Price of HBL | | | | | 5. Market Price of SBIBL | | | | 6. Market Price of EBL | | | |
|------------------------|------|------|------|------|--------------------------|------|------|------|------------------------|------|------|------|
| Month | 2005 | 2006 | 2007 | 2008 | 2005 | 2006 | 2007 | 2008 | 2005 | 2006 | 2007 | 2008 |
| Jan | | 972 | 1150 | 1623 | | 402 | 805 | 1300 | | 930 | 1800 | 2280 |
| Feb | | 1045 | 1020 | 1420 | | 450 | 700 | 1201 | | 1080 | 1675 | 2012 |
| March | | 1005 | 1100 | 1500 | | 455 | 715 | 1259 | | 1111 | 1700 | 1960 |
| April | | 1150 | 1190 | 1730 | | 630 | 825 | 1285 | | 1355 | 1750 | 2548 |
| May | | 1095 | 1360 | | | 600 | 990 | | | 1333 | 2030 | |
| Jun | | 1100 | 1760 | | | 612 | 1176 | | | 1379 | 2430 | |
| July | 1040 | 1100 | 1765 | | 385 | 600 | 1175 | | 980 | 1325 | 2290 | |
| Aug | 950 | 1045 | 2140 | | 370 | 585 | 1340 | | 870 | 1290 | 2675 | |
| Sep | 1000 | 1102 | 2310 | | 358 | 575 | 1650 | | 972 | 1290 | 2830 | |
| Oct | 1070 | 1262 | 2510 | | 369 | 635 | 1800 | | 860 | 1580 | 2774 | |
| Nov | 1140 | 1300 | 2800 | | 365 | 796 | 2388 | | 886 | 1945 | 2690 | |
| Dec | 920 | 1210 | 1995 | | 406 | 810 | 2070 | | 885 | 1900 | 2500 | |

| 7. Market Price of BOKL | | | | | 8. Market Price of NIC | | | |
|-------------------------|------|------|------|------|------------------------|------|------|------|
| Month | 2005 | 2006 | 2007 | 2008 | 2005 | 2006 | 2007 | 2008 |
| Jan | | 616 | 1055 | 1688 | | 401 | 651 | 1160 |
| Feb | | 707 | 920 | 1502 | | 425 | 595 | 932 |
| March | | 673 | 935 | 1675 | | 432 | 591 | 938 |
| April | | 870 | 950 | 1930 | | 520 | 620 | 1065 |
| May | | 810 | 1110 | | | 489 | 729 | |
| Jun | | 850 | 1375 | | | 496 | 950 | |
| July | 443 | 830 | 1250 | | 391 | 480 | 590 | |
| Aug | 469 | 818 | 1444 | | 370 | 470 | 985 | |
| Sep | 475 | 837 | 1570 | | 417 | 451 | 1080 | |
| Oct | 511 | 1120 | 1706 | | 465 | 520 | 1290 | |
| Nov | 527 | 1113 | 2185 | | 395 | 665 | 1600 | |
| Dec | 546 | 1100 | 2050 | | 390 | 651 | 1345 | |

Calculation of Numbers of Runs and Z value of Nepal Investment Bank

A. Calculation of Median

$$\text{Median} = \frac{(N+1)^{\text{th}}}{2} = \frac{34+1}{2} = 17.5 \text{ th place}$$

$$\text{Median} = \frac{1261+1270}{2} = 1265.5$$

B Calculation of Numbers of Runs

Numbers of Positive Runs (N_1) = 17

Numbers of Negative Runs (N_2) = 17

Numbers of Runs(r) = 6

C. Calculation of Z Value

$$Z = \frac{r - \left[\frac{2n_1n_2 + 1}{n_1n_2} \right]}{\sqrt{\frac{2n_1n_2(2n_1n_2 - n_1 - n_2)}{(n_1 + n_2)^2(n_1 + n_2 - 1)}}} = -4.179$$

D. Tabulated value of Z

Tabulated value of Z at 5% level of significance and 9 degree of freedom $Z_{\text{tab}} = 1.96$

Note (Similar procedure has been applied to calculate the parameters of Run test and Z

Value of others commercial banks and other organization under study)