

# **CHAPTER-I**

## **INTRODUCTION**

### **1.1 Background of the study**

Nepal is one of the least developed countries in the world. Nepal launched planned economic development just five decades ago. Recently, she has adopted the path of economic development through liberalization. Strategy for development requires a steady supply of medium to long-term capital funds for productive investment for the mobilization of invisible resources. Capital market is an important intermediary through which effective bridging of the deficits units and surplus units can be ensured. To develop the economy of the country efficient and effective capital market is a vital importance. The capital market institutions are engaged in mobilization of savings from surplus units and policy funds into the deficit units for productive investment. Capital market can be decomposed into securities market and non-securities market stock. Capital market is an organize market through which buyer and seller of long-term capital are met to buy and sell the long-term funds.

Capital market is concerned with long-term finance, it is the market for long-term marketable instruments having maturity period greater than one year. The instruments used in capital market are debt, stock, preferred stocks, bonds and convertible issue. The long-term debts are installment debts, commercial debts represented by acceptance bills, commercial debt and accommodation papers etc. saving and deposits schemes, which are not securities bearings, fall under the non-securities segment of market. Capital market consists of (i) Primary Market and (ii) Secondary Market

**i. Primary Market:** New securities are usually issued by corporations and governmental bodies in what is called primary market. "The financial market in which securities are initially issued, the only market in which the issuer is directly involved to the transaction is called primary market."

**ii. Secondary Market:** "The secondary market is that financial market in which pre-owned securities are traded." Once the securities are issued into primary market, then they are traded in secondary market. The corporations need to list their shares in any organized securities exchanges to qualify for the trading. In Nepal, Nepal Stock Exchange Limited (NEPSE) represents the secondary stock market.

Stock market is a major component of the securities market. Stock market is a medium through which corporate sector mobilize funds to finance productive projects by issuing shares in the market. Stock market provides the best investment opportunity to the investors. Thus, the effective collection of small amounts of saving and transferring funds into the competitive and efficient uses requires a well functioning capital market to facilitate the process.

The stock market also imparts liquidity to the securities holders. This offers an opportunity for investors to invest in the long-term ventures, while market also enables them to convert their securities into liquidity cash before the maturity of the project. The liquid stock market also promotes the primary issuance of shares because investors participate in the issuance of share markets for they can get back the fund easily.

Stock Market liquidity may influence economic development. Many profitable projects require long-term venture capital finance. Most investors tend to avoid the risk and are often reluctant to tie their savings into the long-term commitment Liquid stock market makes the

investment less risky and more attractive. It encourages savers to invest in the long-term project, because they can sell the security quickly and easily if they want to get back their savings before the project matures.

The investors in Nepal have shown their growing interest in shares of the public limited companies, banks and financial institutions. At the same time their interest to price volatility has increasing day by day. Many public limited companies in Nepal are successful in floating the shares in securities market these days. The rising investment consciousness is the direct outcome of the keen interest shown by the public. Whenever the public limited companies issue new shares, the stock market gets busy with crowds of share applicants (Shrestha 1992)

Securities markets in developed countries have a long history but they do not have long history in Nepal. The government of Nepal passed a law relating to company registration and regulation in 1936 AD. After the enactment of this law, Biratnagar Jute Mills Limited was established in 1936. Thus, the history of securities market began with flotation of shares by Biratnagar jute mills Ltd and Nepal bank limited in 1937AD. Almost two and half decades later ,government issuance of development bond in 1964. But there was no secondary market to provide liquidity for these bonds until the establishment of securities market centre in 1976. The establishment of the securities marketing centre under the company act was the first foundation stone for institutional development of the securities market in Nepal.

Securities exchange center was bifurcated into two distinct entities: securities exchange board Nepal (SEBO/N) and Nepal stock exchange limited (NEPSE) in 1993. Listing of share in stock exchange and their daily trading in the secondary market through the institutional brokerage

system started after the restoration of democracy in 1990. Because of the worldwide privatization and economic liberalization, economic changes have been brought in the country.

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

The history of Nepal stock exchange, abbreviated as NEPSE, extends back to 1976 when the government established Securities Marketing Center in 1976. It was later converted into Securities Exchange Center. In earlier years of its establishment the center confined its activities in trading government securities. It started listing and trading corporate securities in November 1984. The center was converted into Nepal Stock Exchange (NEPSE) in 1993 and operates under Securities Exchange Act 1983 (Shrestha et. al, 2003:31). Before conversion into Nepal Stock Exchange, it was the only capital markets institution undertaking the Job of the brokering, underwriting, managing public issue, market making for government bonds and other financial services.

NEPSE is a non-profit organization, operating under security exchange Act 1983. NEPSE commenced its operation on 13<sup>th</sup> January 1994, with ownership among Government of Nepal (GN), Nepal Rastra Bank (NRB), Nepal Industrial Development Corporation (NIDC) as its licensed members.

The main objective of NEPSE is to upgrade the infrastructure of the security exchange so that it could handle the increased activity more efficiently. This has included a focus on the modernization of the trading clearing settlement and surveillance procedures. Another objective of NEPSE is to impart free marketability and liquidity to government and corporate securities by facilitating transition of its trading floor through market intermediaries, such as brokers, market makers and securities

dealers. NEPSE is the only one secondary market of the country for security transactions. Other forms of secondary market such as OTC market, the third and fourth market are not initiated till date in our country.

## **1.2 Focus of the Study**

Capital market helps to mobilize the financial resources and efficiently channel to productive investment. Capital market consists of securities market and non-securities market. Securities market implies mobilization of the funds through issuance of the securities share, bonds and debentures, by corporate sector and bonds, bills and debentures by government. The securities available in this market can be in the form of equity such as share and stocks, debt instruments such as corporate bonds and government securities or equity equivalent such as convertible bonds or debentures. These securities traded in the market are generally negotiable and hence can be traded in the secondary markets. Non securities market refers to the mobilization of the financial resources by the financial institutions in the form of deposits and loans.

Stock market acts as a part of the capital market and can provide major source for the investments in the economic development. Stock market is an institution of paramount importance in the economic life of any country. In fact private ownership of business and industry would be inconceivable in the absence of a facility which enables such share ownership right to be bought transferred and converted into cash. It is the stock exchange that provides liquidity to private investment in corporate enterprises.

Stock market is a secondary market, a trading market. This is a place where buyer and sellers of securities are bought together. The stock price

efficiency occupies an important place in financial management. If there are certain imperfections in the stock markets, wise investor attempts to utilize them to achieve a better return. This perception has no rational significance in a world where shares are efficiently priced. In an efficient market, share price should adjust randomly upwards with respect to the new information. Stock market efficiency cannot be tested directly. However, by postulating some security price behavior, one can have some idea about market efficiency. History indicates that much time and effort have been devoted in the field of financial research to investigate the movement of share prices. Thus study has been focused on the behavior of Nepal Stock Exchange Index.

### **1.3 Statement of the Problem**

The Nepalese capital market has been passing through a transitional phase over the past few decades. A breakthrough was achieved in the development of stock market in Nepal, when the Security Transaction Centre was converted into Nepal Stock Exchange in 1994. Market maker and stockbrokers were engaged to transact business through a trading floor provided by Nepal Stock Exchange under an atmosphere of competition.

Stock market provides investors good investment opportunity with fair return and instant liquidity with minimal risk of loss. It helps to mobilize financial resources for the investment in development projects and thereby helps for economic development in turn further develop the stock market. The investment strategy based on the technical analysis is more profitable than buy and hold policy on timing of selling and buying. Fundamental analysis theory holds the view that there exists intrinsic value of the stocks, which helps to select the right stock at a time market

is efficient in pricing the shares. In that condition investment, decision becomes simple. But investors are losing interest in the performance of share market mainly due to the behavior of fraudulent and scandalous activities. The investors are confused which stock is bad and which stock is good.

The study period is not longer enough and other comprehensive test in short data series seems that the study was focused on the methodological study only the study mainly has sought the answer the following research questions.

1. What is the trend of annual turnover of Nepal Stock Exchange?
2. How many companies listed in Nepal Stock Exchange?
3. What is the trend in market capitalization?
4. What is the paid up capital of listed companies?
5. What is the behavior of Nepal stock exchange (NEPSE) index?
6. How is the equity share price behaviour of listed companies?
7. Are the successive price changes independent or dependent to the incident or environmental event?

#### **1.4 Objective of the Study**

This study basically examines the efficiency of the behaviour of NEPSE index. This study is trying to convince and inform the investors what the history, present and future of each industry of NEPSE and as a whole about the security market i.e.; NEPSE. It may be useful for rational investors who want to inter in security market. The specific objectives of the study are as follows.

1. To analyze the trend of Annual Turnover of Nepal Stock Exchange (NEPSE).
2. To analyze the listed companies during fiscal year 2004/05 to 2008/09.
3. To analyze the trend in Market Capitalization.
4. To analyze the paid of capital of listed companies.
5. To analyze the behavior of NEPSE Index of listed companies.
6. To analyze the equity shares price behaviour of listed sample companies.
7. To examine whether successive price changes are independent or dependent on the environmental incident.
8. To provide necessary suggestion and recommendation for improvement.

### **1.5 Significance of the Study**

There are various factors that cause market fluctuation of stock price in the market, mainly two factors economic and non-economic factors. The most fundamental factor in stock price fluctuation lies change in corporate earning interest rates and business cycle trends contribute to makeup the economic factors. Political changes, administrative changes, changes in weather and other natural conditions. The stock price is directly affected by the volumes of transaction, institutional investors, transactions etc. although margin transactions increase purchase whose stock price is going up once the price beings to fall, they become a selling factor and accelerate price decline.

The listing of shares in stock exchange centre and their trading in the stock market is not too long. The stock market has been providing capital



for investment in industrial productive sector, financial sector, service sector and other.

If the successive price changes of the share are dependent on their past values, there exist 'trends' or 'patterns' in the price movement which are profitable to the security analysis. "When successive price changes are independent, there can be no chart reading technique which makes the expected profits of the investors "greater than they would be under a naïve buy and hold model". (Fama1965).

Every research work or study should be fruitful. It is believed that this work will be fruitful for various people and organization specially, who are connected with the share trading through securities exchange centre.

## **1.6 Research Hypothesis**

Following hypotheses were tested in this study.

- I. **Null hypothesis ( $H_0$ ):** There is significant difference between the NEPSE Index before and after the 22 parties on government or successive price charges of the stock are independent of 22 parties entry on government.
- II. **Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE Index before and after the 22 parties entry on government or successive price charges of the stock are dependent on 22 parties entry on government.
- III. **Null hypothesis ( $H_0$ ):** There is significant difference between the NEPSE Index before and after the Maoist's entry on government or successive price charges of the stock are independent of Maoist's entry on government.

- IV. **Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE Index before and after the Maoist's entry on government or successive price charges of the stock are dependent on Maoist's entry on government.
- V. **Null hypothesis ( $H_0$ ):** There is no significant difference between the NEPSE Index before and after Jan-Andolan-2 or successive price changes of the stock are independent to the incidence.
- VI. **Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE index before and after Jan Andolan-2 or successive price charges of the stock are dependent to the incidence.
- VII. **Null hypothesis ( $H_0$ ):** There is no significant difference between the NEPSE index before and after the Royal move on government or successive price changes of the stock are independent to the incidence.
- VIII. **Alternative hypothesis ( $H_1$ ):** There is significant difference Between the NEPSE index before and after the royal move on government or, successive price changes of the stock are dependent on incidence.
- IX. **Null hypothesis ( $H_0$ ):** There is no significant difference between the NEPSE index before and after Nepal's entry on WTO or successive price changes of the stock are independent on Nepal's entry on WTO.
- X. **Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE index before and after entry on WTO of Nepal or successive price changes of the stock are dependent on Nepal's entry on WTO.

### **a. Limitation of the Study**

It is natural that this type of study has been conducted within certain limitations. This study is not an exception. There could be many limitations which are as follows.

1. Nepal Stock Exchange consists of eight sectors. So this study will basically concern with this eight sectors to study the behaviour of Nepal Stock Exchange (NEPSE).
2. This study consist the relevant data of last fiscal five years (i.e., starting from 2004/05 to 2008/09) for the analysis.
3. This study focuses stock price behaviour of these companies and NEPSE trend on overall listed companies.
4. The study is mainly based on secondary data and information provided by NEPSE, NRB and other related sectors & journals. Hence the result depends on the reliability of secondary data.
5. The presentation of these studies only depended on trend, chart, and hypothesis test of these objectives.
6. This study has been completed within certain period of time.
7. This study may also be affected by financial resources of the researcher. Time and work force are also the limiting factors in undertaking this study.
8. This study is limited from the point of view of submission on partial fulfillment of the requirement for the master degree in business studies.

## **1.8 Organizations of the Study**

This study attempts to solve the research problem created with behaviour of NEPSE index. To solve the research problem within scientific manner, the study has undergone within the prescribed form of T.U.

### **Introduction**

This chapter deals with the subject matter of the study consisting background of the study, focus of the study, statement of the problem, objectives of the study significance of the study, test of hypothesis, limitations of the study and organization of the study.

### **Review of literature**

This chapter includes theoretical review and review of related studies.

### **Research methodology**

This chapter explains the research methodology adopted in carrying out the present research. It deals with research design, population and sample and nature of data, data collection techniques, data analysis tools and limitation of the methodology.

### **Data presentation and analysis**

It includes the data presentation and analysis. It consists of descriptive analysis of the gathered data and information using statistical tools. Additionally, this also includes the major findings of the study.

### **Summary, conclusion and recommendation**

The last chapter concerns with the suggestive framework that consists of summary, conclusion and recommendation for future improvements.

The bibliography and appendices are incorporated at the end of the study.

## **CHAPTER-II**

### **REVIEW OF LITERATURE**

In this chapter some of the basic literatures on the stock price behaviour are reviewed. It includes review of relevant theories on the topic and review of the previous empirical studies done within and outside the country.

Few books articles and research studies have been reviewed on this subject. The purpose of the literature review is 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. Thus, the previous studies cannot be ignored because they provide the foundation to the present study.

In other words, there has to be continuity in research. This continuity in research is ensured by linking the present study with the past research studies. Thus, this chapter is broadly discussed under the following two sections:

- Theoretical Review
- Review of related studies

#### **2.1 Theoretical Review**

There are numerous factors that cause the share price fluctuations in the market. They are economic factors. The prices of securities are typically very sensitive, responsive to all the events both real and imaginary that cast light in to murky future (cootner1964).

During the last three decades a number of studies have been conducted to examine and to test the efficient market hypothesis in its weak and semi-strong forms in developed stock market. Efficient market cannot be directly tested. Over the years professionals and experts have been concerned with development and testing model of price behaviour .It would be very hard to find a completely accepted price formation theory. Before describing the efficient market theory, it would be proper to explain the conventional approach that includes technical analysis theory.

### **2.1.1 Technical Analysis Theory**

Technical theory involves study of the past volume and price data of the stocks to predict future price fluctuations. This approach studies various graphs and charts of the past share prices and deduces from the analysis about future price movement.” The chartist seeks to predict future movements by seeking to interpret past pattern on the assumption that “history tends to repeat itself.”[Kean 1983] Technical analysis is the study of the internal stock exchange information as such. The world “technical” implies a study of the market itself and not of those external factors which are reflected in the market. The technician usually attempts to predict short-term price movement and thus makes recommendations concerning the timing of purchase and sales of either specific stocks or groups of stocks [such as industrial] or stock in general. It is some times said that technical analysis is designed to answer the question ‘when’? (sharp, Alexander and Bailey 2003).The underlying philosophy of technical analysis is that the price of the stock depends of supply and demand in the market and has little relationship to intrinsic value as fundamentalists believe it to be .Thus, technical analysis tools are designed to measures supply and demand of securities in the capital market.

### **Assumptions:**

- (1) Price is determined by the interaction of demand and supply.
- (2) Demand and supply are governed by various factors, both rational and irrational.
- (3) Series of prices contain trends that persist for appreciable length of time.
- (4) The changes in trends caused by shift in demand and supply are detachable in the analysis of past price and value,
- (5) The pattern tends to repeat itself.

“In statistical terminology the stock market technician relies upon the dependence of successive price changes” (Levy 1966). They assume that the historical behaviour of a security price is rich in information concerning its future behavior.

### **2.1.2 Fundamental Analysis Theory**

In the fundamental approach, the security analysis or prospective investor is primarily interested in analyzing factors such as economic influences, industry factor and pertinent company information such as product demand, earnings, dividend and management in order to calculate an intrinsic value of the firm's securities. It is sometimes said that fundamental analysis is designed to answer the questions “what”? (Sharp, Alexander and Bailey 2003).

Fundamental analysis theory claims that at any point of time an individual stock has an intrinsic value of the future cash flows from the security discounted at appropriate risk adjusted discount rate. The value

of the common stock is simply the present value of all the future income which the owner of the share will receive 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 income will be in each future period and second, it is not clear what the appropriate discount rate should be for a particular stock. So fundamentalist attempt to reach best estimate of the intrinsic value of share by studying company's sale, profit, dividend, management competency and numerous other economic and industrial factors which determine its future income and prospect of the business opportunities. Fundamental analysis deals into companies, earnings, their management, economic outlook, firm's competition, market conditions and many other factors.

Fundamental security analysis estimate the intrinsic value of a security whenever the stock's value of the stock, the recommendation of sales or purchases is called for "After extensive analysis, the investor derives an estimate of the 'intrinsic' value of the security, which is then compared to its market price, the security should be acquired and vice versa."(Reilly 1986)

### **2.1.3 Efficient Market Theory**

Efficient market is concerned with the pricing mechanism of security market; it has two dimensions of price adjustment. One is to the type of information reaching to and another is the speed and quality of adjustment of security to the information.

Infusion of information instantaneously and correctly adjusts in price there will be no subsequent lags that are profitable. Pricing not only



should be instantaneous but should discount accuracy of information so that the prices fluctuate closely around its intrinsic value.

Market efficiency may be defined in the context of number of areas, for intense organizational efficiency, Investment efficiency, allocation efficiency, informational 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 (a) exchange efficient (b) product efficiency and (c) information efficiency (Robinstein 1979). Efficient market theory contends that in free and perfect competitive market stock price always reflects all the available information and adjust instantaneously every influx of new information. "In an efficient market security price 'fully reflect' available information" (Fama1977).

Most financial economic agree that capital should be channeled to the place where it will do the most good. One goal of government policy is to encourage the establish of allocation all efficiency markets in which the firms with the most promising investment opportunity have access to the needed funds However in order for markets to be allocation efficiency .They need to be both internally and externally efficient. In externally efficient market information is quickly and widely disseminated, which allows each security's price to adjust rapidly in an unbiased manner to new information so that it reflects investment value .An internally efficient market is one in which brokers and dealers compete fairly. Making the cost of transacting low and the speed of transaction high (sharp, Alexander, and Bailey 2003)

The efficient market theory, being extreme hypothesis i.e. price is fully reflect all the information, cannot be tested in the empirical data in its

precise form. However, postulating pricing mechanism with the types of information set being impounded in the stock market, it can be done, Hypothesis of the market efficient depending upon types of information set impounded in to the price. There are;

- (i) The efficient market Hypothesis (EMH)
- (ii) Theory of Weakly Efficient market or Random walk Hypotheses (RWH)

### **The Efficient Market Hypothesis (EMH)**

The efficient market hypothesis is not properly understood by a large segment of financial community. The development of EMH could be traced into the random walk theory of stock market price behavior. Later, when largely random endeavors where made to cloth the empirical results with economic contents which lead to the advancement of efficient market theory. Market efficiency may be in the context of

- (a) Operational efficiency
- (b) Informational efficiency
- (c) Allocation efficiency.

The efficient market hypothesis says that the market rapidly incorporates all information affecting the value of a security .Tests of market efficiency require a model showing the impact of information upon share prices. The EMH can be broken down into three sub-hypothesis, which differ according to the type of information.

<b>Form of efficiency</b>	<b>Set of information reflected in security price</b>
Weak	Previous prices of securities
Semi-strong	All publicly available information
Strong	All information, both public and private

Three forms of efficient market hypothesis depending upon types of information set impound into the prices. If the pricing in the stock market has absorbed all the information available in the stock market, it is considered as weakly efficient and participant of the technical analysis approach in the market becomes futile. If current prices of the stock reflect all the publicly available information i.e. past prices volume data and all the published accounting information had no value because it would have been discounted by participants accurately and instantaneously when they are disclosed.

The weak form efficient market hypothesis assumes that all past information is reflected in security prices. This means that there is no relation between the past and the future price fluctuations. Consequently, Investors are unable to make profit from studying trend or pattern of prices of the securities.

The Semi-strong efficient market hypothesis holds that security prices adjust rapidly to all publicly available information e.g. the announcement of annual earnings, stock splits etc this implies that using publicly available information, investor will not be able to earn above-average return.

The Strong form efficient market hypothesis assumes that all information affecting stock prices both public and private securities prices. Thus, in such a condition even those who have access to private information cannot consistently excess returns.

The main job of fundamentalist is to find out overvalued securities. Furthermore, in a dynamic economy intrinsic value can change them as a result of new information (Breale 1969). The intrinsic value of a given security depends on the earning prospect of the company which is related to economic, political and company's specific factors. In case, new information is not rapidly known to the market participants, security price changes with display dependence. However, if the adjustment to new information is "instantaneous", successive price changes will be independent (Lorie 1973).

The Semi-strong Efficient Market Hypothesis (SSEMH) and strong Efficient Market Hypotheses (SEMH) can't be tested directly. One can do so indirectly by accumulating evidence, which contradicts these hypotheses. Thus, the SSEMH is tested by examining whether share price react accurately to new available fundamental information. if the SSEMH is true ,then accounting information has no value and only a few insiders trading on valuable information can earn a high profit. "In SSEMH, the degree of variance between price and value security is relatively low. SEMH can be tested by determining whether any investor appears to have gained and used superior information" (Firth 1977). It is difficult to test the SEMH because private information can't be examined directly In SEMH variance between price and value is zero.

## **Theory of Weakly Efficient Market of Random Walk Hypothesis**

The weak form of efficient market hypotheses (EMH) states that current price fully reflect the information contained in the historical price movements. The market is efficient in the weak sense if share price fully reflect the information implied by a prior price movement. Price movements in effect are totally independent of previous movements, implying the absence of any price patterns with prophetic significance. 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 to the previous prices or the series of price changes are random phenomenon. Actually the weak form of EMH is referred to as random walk theory of share price behaviour. Weak form of efficient market hypotheses is popular known as the random walk theory. Random walk theories describe whether past prices can predict future prices. The fundamental beliefs at the back of RWH are that successive price changes of an individual stock are independent over time and that its actual price fluctuates freely over time about its intrinsic value. Fama called this model an intrinsic value random walk market (Fama 1965).

But in contrast to this model, random walk theory denies the existence of any kind of “trends” or patterns”. Hence, past price contains no useful information to predict future price behaviours. As Fama advocates, random walk theory implies the future path or the price level of the security is no more predictable than the path of a series of accumulated random numbers. The random walk model in share prices actually involves two main hypotheses which state as:

(a) Successive price changes are independent, and

(b) Price changes conform to some probability distribution “statistically independence means the probability distribution for the price changes during time period 't' is independent from the sequence of price changes during previous periods (Fama 1965). More precisely it is expressed in the following algebraic term.

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

Where the term on the left side of equation is the conditional probability that the price changes during time t will take the value x, conditional on the knowledge, the previous price changes took the values  $x_{t-1}$ ,  $x_{t-2}$  etc. But the term on the right of the equality is the unconditional probability that the price changes during t will take the value x. The expression means the conditional and the marginal probability distribution of an independent random variable are identical (Gupta 1989).

Out of two hypothesis 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 conforms 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. However, the parameter of the distribution should be stationary but not so strongly imposed if independent hypothesis is held true. However, still the form of distribution of price changes is important from investment decision, academic and research point of view (Fama 1965)

Actually market mechanism establishes the existence of random walk theory that the successive price changes to be independent. The stock market poses steady inflow of information that influences the set of anticipation's of the individuals independence is an important property of

random walk hypotheses. Proponents of random walk recognize that, in general, strictly an independence assumption doesn't exist in real world.

## **2.2 Review of Related Studies**

This sub-section is concern with the previous research work done by the different scholars. More specially, the chapter includes the review of foreign research, review of Nepalese research and review of Journals & newspaper.

### **2.2.1 Review of Foreign Research**

Research on the security prices didn't begin with the development of a theory of price formation, which was then subjected to empirical test. The impetus for the development of the theory came from the accumulation of evidence in the middle 1950 that the behavior of common stock and other speculation of prices could be well approximated by a random walk. Much of the theory on the random walk can be traced to French mathematician Louis Bachelier whose PHD dissertation titled "The Theory of Speculation". He tested the model in commodity speculation in France was a "Fair game". He also concluded that the current price of a commodity was an unbiased estimate of its future price. After the first discovery of the random walk model by Louis Bachelier, empirical testing of the model in the stock market prices almost remained stagnate until 1960s. There are large number of studies most of which are briefly review below.

Kendall (1953), Roberts (1959) and Osbern (1959) also tested the model that gave rises to the theory. Then after in 1960s and onwards numerous studies were carried out in this area validated the hypothesis while some other studies refuted this theory as a true description of the market. These

researches applied various analyzing tools and mechanical rules, details of that have been presented in the following paragraphs.

Kendall (1953) made significant contribution to advance in the study of the random walk model. He tested the model of the weekly price changes of the 19 indices of British industrial shares and in the spot price series of cotton (New York) and wheat (Chicago). He analyzed the data by serial correlation coefficient and concluded that the subsequent stock price movement follows random walk. He showed that the successive price changes are statistically independent to its past price changes.

Roberts (1959) he conducted simulation tests by comparing the cumulation of random numbers and the Dow-Jones industrial Average Index (DJIAI) for about one year. He observed the first difference of two series produce the same pattern. He gave a number of methodological suggestions for testing what he calls the chance model. He suggested run analysis for testing independence of price changes. Similarly Osborn (1959) analyzed stock price from New York stock exchange (NYSE) using daily log price changes which called Borwain Motion. He found the consistency between the Borwain motion and share prices movements rise to support on random walk hypothesis.

Cootner (1962) analyzed weekly and 14 week interval data on 45 stocks from New York stock exchange (NYSE). He found that one week interval stock price move as a random walk. However, he also found some dependencies in the data at 14 week interval. The average serial correlation coefficient for one week was -0.047 and for 14 was 0.131. He focused the importance of “differencing interval” while testing for randomness in stock price behaviour.



Fama (1965) studied on the Random walk Model. He observed the daily proportionate prices of 30 individual stocks the Dow Jones Industrial Average. He employed the statistical tools such as serial correlation and run test to draw inference about dependence of the price series. He calculated auto-correlation coefficient for daily changes in log prices for log from 1 to 30 and found that the coefficient were almost close to zero in overall.

Dryden (1970) studied daily London all-market indices for four year, and found the serial correlation coefficient 0.30 to 0.16 which is significantly differs from zero. He suggested "sufficient divergence from the random walk hypothesis to justify a more extensive analysis of the behaviour of individual share quote of the London stock exchange".

Niarchos (1972) studied price series of 15 individual stocks from the Athens stock Exchange (Greece) for the period from 1957 to December 1968. He reported the average 1-lag serial correlation coefficient 0.036 for the individual stock prices. The coefficient for individuals stocks were close to zero. So he concluded that the price fluctuations were random walks and past prices has no meaningful information for future.

Solnik (1973) investigated the daily price of 234 common stocks of eight European countries namely, France, Italy, UK, Germany, Netherlands, Belgium, Switzerland, Sweden for the time period from March 1966 to April 1971. He calculated the returns for various interval of the each stock and studied the distribution of serial correlation coefficient. He pointed out random walk is more apparent in the European stock price behaviour than in the American price behaviour.

Sharma and Kennedy(1977) tested the random walk model, by run test and spectral analysis against representative stock market indices of

Bombay, Network and London stock exchange during 1963-73. They found that the stocks on Bombay stock exchange obey random walk and are equivalent in sense to the behaviour of share price in the market of developed countries.

Gupta (1985) found out comprehensive test of the random walk hypothesis by employing serial correlation and run analysis in two sets of time series data. The two sets of time series data are the first was the economic time index, number of daily share prices and financial express index number of equity prices on a daily and other weekly series and another was a weekend closing price. He concluded on the basis of these test the random walk model share price behaviour suggesting in the Indian stock exchange were efficient in the weak sense in pricing share .

Rao (1988) conducted the study on the weekend prices of the eight blue-chip stocks for five years from July 1982 to June 1987. He applied serial correlation analysis, run test and filter rules. The results from all the tests supported the random walk hypothesis.

Mahapatra (1995) tested the weakly efficient market hypothesis using rank correlation analysis based on relative strength. The sample was end of month closing price of 26 stocks from Bombay stock exchange during the period January 1989 to December 1992. He argued that the Indian stock market is less efficient in the short run but more efficient in the Long run.

Mobarek and Keasey (2000) The study seek evidence supporting the weak form efficient of the market using daily market return series of the listed securities on the Dhaka Stock Exchange for the period of 1988 to 1997, empirical analyses suggest that the Dhaka stock Market of

Bangladesh is not weak form efficient. The result of individual share returns also evidence that they are not following random walk model.

Majnoni and Massa (2001) studied measurement of market efficiency of the Italian stock Market. The data used two deferent's data set on prices and returns, first on daily data that shows the strong positive correlation between price changes and trading volume is due to significant causal relationship between trading volumes and price formation. The increasing concentration of trading should not be interpreted as an indication of poor market efficiency since the component of price volatility due to the market imperfections has declined as a proportion of total volatility even for infrequently traded stocks.

Abraham, Seyyed and Alsakran (2002).The data consist of weekly index value for the three major Gulf stock Markets of Kuwait, Saudi Arabia and Bahrain market efficiency hypotheses are assessed using the variance ratio and the nonparametric (run test) Consistent with results in the literature for similar emerging markets both RWH and weak form efficiency are rejected for the Gulf Markets where price changes are independent for all three markets implying weak form efficiency Random walk Hypothesis for the Saudi Arabia and Bahrain markets cannot reject Kuwaiti market falls to follow a random walk even after the correlation.

Pena and Alana (2003) test stock index price follow random walk in the Spanish stock Market by means of variance rations By using daily, weekly and monthly prices return auto correlation in the Spanish stock Market for the two indexes (IGBM and IBEX35) and for individual securities by means of variance ratio tests. They found that positive string auto correlation for both IGMB and IBEx35 index daily returns can't reject the random walk hypothesis for the period March 31, 1997 to 2000,

significant position of auto correlation especially in daily and weekly period. The positive index auto correlation monthly returns are not significance at 5% level in any period. On the other hand, Spanish stock Market security daily returns show weekly positive auto correlation. Even though index monthly return positive auto correlation are low, there is no strong evidence of monthly return cross-correlation at one lag (a month ) between portfolios based on size. In particular, large stock portfolios leak to the small stock ones.

Wicremasinghe (2004) has conducted an empirical tests of foreign exchange market efficiency have been carried out by using a variance ratio test and random walk in foreign exchange rates. The study examined the weak and Semi-strong form efficiency of the foreign exchange market in Sri Lanka by using monthly data for six currencies. The monthly nominal spot exchange rates for Japanese Yen (JPY), The UK Pound (GBP), the US Dollar (USD), France Franc (FRF), Indian Rupee (INR) and German Mark (DM) for the period January 1986 to November 2000. While unit root test are used to test weak form of the efficient market hypothesis, Semi-strong form of the market hypothesis is investigated using Co-integration, Granger Causality and Variance decomposition analysis. The result of unit root tests indicates that all six exchange rates are random walk. The efficient market in Sri Lanka cannot devise some rule or technique that can be used to predict future movement of an exchange rate from its past value. However, the Co-integration and Granger causality tests and variance decomposition analysis provide evidence against the Semi-strong version of the efficient market hypothesis. They indicate that the movement of one or more exchange rate can be predicted from the movement of the other exchange rates.

Therefore, participants in the foreign exchange market can engage in profitable transaction both in the short and long run.

Islam and Khaled (2005) carried out a test of weak-form efficiency of the Dhaka stock Exchange use of monthly versus daily data or weak .The study uses daily, weekly, market prices and returns of the stock exchange during the year 1990 to 2001. Starting from the January 1990, the daily market price data cover the period up to 23November 2001, while the weekly and monthly price data cover the period up to 21November 2001 and October 2001 respectively. Data For the period 1990 to 1991 were taken from the daily price quotations. Test of weak form efficiency of the Dhaka stock Exchange by using the autocorrelation test. Test separately for the period before July 1996 and for the period after March 1997.They concluded on the basis of hypothesis at the 5% significance level in the case of monthly data. But for weekly data and daily data the market efficiency was rejected for the pre boom period (1996) but not for the post crash.

### **2.2.2 Review of Nepalese Research**

Under this section various master's level dissertation related to this study have been reviewed .These are as follows:

Shrestha (1982) conducted a study on the role of securities marketing centre in the economic development of Nepal. The study was conducted with the objectives to examine the role played by securities marketing centre in promoting Nepalese security. This study covered the period of 4years (2034/35 to 2037/38).He has concluded that the securities marketing centre is very poor in term of the primary market and facing the problem in the demand and supply. Investors are influenced by the

value of share and dividend policy of the company while buying or selling the securities.

Bhattarai (1985) carried out a study of impact of securities exchange centre on capital mobilization with special reference to the government securities and share market in Nepal. The objective of this study was to evaluate the significant features of government securities market to find out the contribution of securities Exchange centre. He concluded that Securities Exchange Centre has mobilized long-term capital required to the new companies launch the development activities in the country to provided the investment opportunities to investor through the primary market.

Bhattarai (1990) carried out a study on share market in Nepal. The sample for the study comprised of 12 companies. This study was based on secondary data. Differential statistical tools and financial tools were applied. She concluded that the investors in capital market through brokers' network raised the transaction volume. Market starts to walk randomly reflecting true value of share and investors are facilitated by providing alternatives to make diversified portfolio.

Bhatta (1995) carried out a study on assessment of the performance of listed companies in Nepal. The basic objective of this study was performance of listed companies. He has taken 10 listed companies as sample based on secondary data. By using different statistical tools like ratio analysis, beta coefficient and portfolio to analyses the dividend yield, liquidity, leverage, risk and return etc. He concluded that capital market to run efficiently requires continues flow of information and there is serious deficiency of such information in market. Investors are

depressed in the market by rules and regulations and bureaucratic set up mind of companies.

Bhatta (1997) carried out a study on dynamic of stock market in Nepal. The primary objective of the study was to analyze the market share price of secondary market. By using differential statistical tools like mean, standard deviation and other essential tools for the study purpose if 14 companies listed in stock market could be regarded as the heart of the capital market. There is a high volatility of share price.

Gurung (1999) conducted a study on the basis of share price behaviour of listed companies in Nepal. The study was conducted with the objectives to test the monthly movement of share price behaviour of listed companies in Nepal. The sample for the study comprised of 15 companies representing from commercial bank, insurance and finance, manufacturing & processing and trading. Using different statistical tools like mean, coefficient correlation and financial parameters. He mentioned that the number of listed companies has been increase during the study period. The study was to analyses the relation between traded and listed companies, to evaluate the trading turnover, to analyses the share price behaviour of listed companies whose stock are listed in stock exchange centre and traded in the stock market. The performance of commercial banks is better than that of trading concerns and the investment in this group is more attractive so, banking group is higher than compare to the other group. Market was bluish during the initial period of the study. The higher fluctuations in prices in decreasing trend and higher variations in prices showed the performances of listed companies have been deteriorating. Moreover this implies the uncertainty and instability in stock market.

Ojha (2000) conducted a research on 'Financial Performance and common stock pricing'. The main objectives of his research were: To study and examine the difference of financial performances and stock prices; To examine the relationship of dividend and stock price; To explore the signaling effects in on stock price. Nepalese stock market is in infancy stage. In general it is very new and just started to develop. Dominance of banking sector is prevalent in the market due to other industries including finance companies, insurance and manufacturing is not encouraging. Corporate firm with long history have a relatively stable profitability parameters than the firms established after the economic liberalization of 1990. Older firms have been issuing bonus shares more times than the new one. Dividend per share is relatively more stable than the dividend payout ratio. That's why payout ratio and dividend yields have been highly fluctuating. Due to lack of proper investment opportunity most of the investors have directed their saving towards the secondary stock market. There is significant positive correlation between the dividends paid and stock prices of banking and manufacturing industries. All other industries have not a perfect correlation between the dividends paid and stock prices. There is a positive correlation between the net worth per share and stock prices of banking, airlines, and hotel industries, there is no perfect correlation between the net worth per share and common stock price.

Timilsina (2001) conducted a study on capital market development and stock price behaviour in Nepal. The main objectives of the study was to find out the fair market prices of equalities and observe the variation of actual prices from computed fair prices to test whether the present behaviour of prices will remain stable. The study covered a period of 8 months (1999/2000).Thirty four listed companies were taken as a sample



for the study. By using different statistical mathematical and financial tools including the formulation of hypothesis was done in the study. He concluded that the market price of share depends on earning per share (EPS) as well as dividend per share (DPS), direct and immediate response in the market.

Dahal (2002) conducted the research on ‘stock market Behaviour of Listed Joint stock companies in Nepal’. The main objective of the research was to examine and study the price trend, with the help of NEPSE index, volume of stock traded, rate of listing of new companies on stock exchange and maintenance of them, impact of signaling factors on NEPSE index. Most of the investors were asked for their preference of investment sector and major portion of them said that they were attached with banking sectors for investment. Investment process and its other factors like NEPSE index, price trend and investments facilitators are not doing their work in systematic way. The investors were not satisfied with their investment as they were asked whether they were satisfied or not to their investment. The investors’ motive for owning shares of company is to receive the dividends from the shares. The investors were found interested to be elected in company’s management. The investors in the stock market take the investment decision on the basis of market price of shares. The efficiency of stock market’s different parties, brokers, market makers, security exchange limited were not found efficient by analyzing interviewer’s expression as they were not getting required support from these parties.

Pradhan (2003) conducted a study on stock market behaviour in a small capital market. Different financial tools were used in the study period of 1986 to 1990 .The sample for study was taken from 7 listed companies. The main objective of the study was the stock market behaviour in a

small capital market in the context of Nepal. He concluded that the larger stocks have larger price earnings ratios, larger ratio of market value to book value of equity, lower liquidity, lower profitability and smaller dividend. Larger stocks also have higher price earnings ratios have lower liquidity, higher leverage, lower turnover, lower profitability and lower interest coverage's.

Shrestha (2003) conducted a study on Behaviour of stock market prices. The objectives of her study were examining the factors that impact on stock price by analyzing the behaviour of NEPSE index and investors views regarding the decision on stock investment. Statistical tools like monthly trend analysis, bar diagrams, co-relation coefficient, regression equation, ANOVA, Run test etc were used to analyze her study. She conducted the study taking all 115 listed companies during the year 1999/2000 as a sample and only six sample companies from three sectors, two from each sector i.e. from banking, finance and insurance companies. She concluded that the value of market capitalization differs from the value of paid up capital because the value of market capitalization was related with market price of share. The value of market capitalization changes due to the changing sentiments of capital market. The investors were highly interested to such companies which had market value in ascending way. There was a significant difference between the market prices of stock of banking, finance sector and insurance sector during her study period. However, she found that the market price movement of sample companies was random. She had suggested that the NEPSE should give more attention to those sectors which were being backward in the NEPSE by conducting research, seminar and training to the investors.

Pradhan and Upadhyaya (2004) conducted a study on the efficient market hypothesis and the behaviour of share prices in Nepal. The objective of the study was to make a comprehensive investigation of weak and other form of efficient market hypothesis. Different statistical tools were used in the study serial correlation, the run test, weighted mean, median, chi-square test and spearman's rank correlation. Twenty-three equity shares listed and actively traded in the Nepal stock Exchange Ltd. He concluded that Nepalese stock market might not be termed as "weakly efficient" in pricing shares where market efficiency is defined as all historical information is reflected in security price. The main factors affecting share prices perceived by the respondents are dividends, retained earnings, bonds share and right issue. The share prices have been found more volatile than expected dividends. The study also found that the shareholders in high tax brackets did not prefer retained earning instead of dividends.

Guragai (2005) conducted a study on stock price behaviour of listed companies of Nepal. The objectives of his study were identify the stock market behaviour in Nepal by analyzing the NEPSE index of listed companies and to examine whether successive price changes are independent or dependent on the environmental incident. He had used simple descriptive analytical approach with the help of histogram line charts tabular form and hypothesis for t-test. He had taken all 114 listed companies at the end of year 2004 as a population and had selected only 10 companies as a sample from six sectors. He concluded that in comparison of sector wise NEPSE index, banking sector insurance sector manufacturing & Processing sectors had dominated the other sectors in NEPSE index .The NEPSE index had decreased after the incident ie. The incident which was taken by him had negative impact on the NEPSE

index. He suggested that the investors should consult with the investment experts while making the investment so that the investors can take the proper investment decision at the right time.

Poudel (2005) conducted study on share price behaviour of listed companies in Nepal. The study was conducted with the objectives to test the daily share price behaviour of listed companies in Nepal. The sample for the study comprised of 21 companies representing from each sector listed in Nepal stock Exchange. This, study is based on the secondary data. Different statistical tools like serial correlation and run test were used. He concluded that NEPSE index showed a steady increase in the later month on the study period, which also shows the better performance on NEPSE stock market performance is more or less in a stable position in the capital market overall in the study period. The stock market performance is steadily increasing with the increase in the number of listed companies. The badly affected sectors were hotels, trading, manufacturing & processing sectors due to different reasons. The NEPSE index of commercial banks is in increasing trend as compared to the other sectors.

Thapa (2006) conducted a study on the Behaviour of Nepal Stock Exchange Index. The main objective of the study was to analyze the trend of Annual Turnover of NEPSE, trend in market capitalization and to analyze the behaviour of NEPSE index. Different statistical tools such as percentage line charts, bar diagram and standard deviation were used. She conducted her study taking all 125 listed companies during the year 2004/05 as a population and eight different sector as sample. She concluded that capital market was a vital importance to develop the economy of the country through an efficient and effective stock market. The number of transactions, traded amount and market capitalization of

the banking and finance companies were in better position in comparison to other sectors. That is why these sectors had most attractive investment alternatives. However she had suggested investing in other sectors too depending on the investor's attitude toward the risk.

### **2.2.3 Review of Journals and Newspapers**

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

Capital market is a crucial element in the national economy. Its role in reinvigorating and boosting the economy activities in the country holds significant. The strategic plan released by security board can, to a great extent, energize the investor's dealer by increasing investor interest in it. Securities trading through broker's 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 sustained.

“There is an urgent need for proficient development of the 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 a relevant with the need of issuers, investors along with promoting efficient capital formation. “(Business age, April 1999:15)

“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 are they now? Similarly, it has been more than a year that Bansbari Leather age has allotted its shares, but why didn't the company list its shares in the market? It has been three years that Gorkhali Rubber Udhyog hasn't called for its AGM Government remained silent in all these cases. This is why the general public as well as the intuitional buyers are not felling secure in investing in stock market.” (Business age, Jan 2000:25)

“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)

“Return from investment in stock is not short run phenomenon.” Investors have to learn few things before they make investment on stock. First of all they should know the financial health of that company. For example: if somebody wants to invest in Nepal Grindlays banks shares. He/she must see its balance sheet or at least paid –up capital, last year net profit, current year anticipated profit and calculate earnings per share and price earnings ratio. These two numbers would judge through the discount factors based upon one of the sound company's data. Market price is equal per share divided by discount factors. EPS can derive by dividing market price per share by EPS. Lower the P/E ratio higher the chance of profit with capital gain and others.”(Business age, July 2001:20)

“Share Marketplace plays a fundamental role in channeling economy of an individual and a corporate region. On that account, it is a prolific Zone of a country’s financial system. In other words share market is an important component of financial sector that provides and facilitates an ordinary exchange of long-term economic allegations. The concept of provincial market has also emerged in the stock exchange. If we can’t move with the universal expansion we should at least consider the regional components. Establishing Credit Rating Agency (CRA) and Central Depository System (CDS) of securities’ is another challenge. The ADB has clearly stated in its report that CRA and CDS are essential for the successful operation of the capital market.”(The Rising Nepal, Jan 20:2003)

“Lack of adequate and effective trading mechanism with Nepal stock Exchange (NEPSE), the only secondary market in the country for securities transaction, is virtually blocking an early issuance of a newer financial instrument into the capital market. Even official at the securities Board, the regulatory authority governing the stock market operations in the country conceded that lack of proper set up has prevented new entrants in to the financial markets and marred the development of capital market.”(The Kathmandu post May13:2003)

“Various factors such as fall in gold price and attraction of investment abroad provided decision slightly igniting their coyness in the stock market .The political instability marked by continuous rejection of Thapa government by major parties, inability to get the peace talks renewed end of one fiscal year’s activities and investment unfriendly atmosphere also contributed to the dismal show in NEPSE say observers. The budget presentation pattern, fractured for the last year due to absence of House of Representatives, the highest body elected by the people could also be

responsible in bringing about uncertainty in the stock market. (Business Age, July 2003:23)

The private sectors have many points to rejoice in a budget and it felt encouraged by this government to go forward in investment. The scheduling of peace talks in Nepalgunj for translating the current cease-fire into the permanent features also NRB promptly after the government proposal for income and expenditure for the year although continuing and highly opposed to the government, does not seem to be highly effective and deterring the investor's confidence in mobilization of capital. All these factors combine should have promoted NEPSE to go up. (Business Age, Aug 2003:19)

The political situation in the country got complicated recently with the disruption of the peace talks, resumption of violence and climaxing of the five party's political agitation sending disappointing signals to the whole of economy. The government's banning of protest of any kind in Kathmandu in the five party's decision to launch civil disobedience challenging. It made investors disturbed but they should know direct edginess, said an observer of the NEPSE index behaviour. To avoid flood of people schedule to gather in Kathmandu in connection with the protest, prime minister introduced through the anti democratic measure. But it could not stimulate the economy. It's somehow helped the stock market to gain as compared to the last week of August. The investor appear to have moved continuously and positively in the NEPSE floor. (Business Age, Sept.2003:35).

The year 2004 was a good one for the Nepali stock market. It gained Rs.10568 in market capitalization and 36.77 points in the NEPSE index between January 2 and December 31 of the year 2004.



All the sectors, except the development banks, gained in the NEPSE index over the period though the gain was very marginal in trading companies that belonged to the other categories.

Though the overall NEPSE index went on tumbling right from the later part of January and reached a nadir of 194.71 on its weekend close of April journey throughout the year except slight weekend wavering in some weeks after late August.

One major reason for the increase in market capitalization was the listing of some big companies such as Laxmi Bank Ltd Kumari Bank Ltd. Lumbini Bank Ltd and number of finance companies. Also listed was National Hydro, the first power generation company listed in NEPSE. (New Business Age, 2005:55).

### **Research Gap:**

The above-mentioned studies are related to stock price behaviour of listed companies of Nepal. But the present study has tried to carry out the latest data from FY 2004/05 to FY2008/09 of the sample companies for analyzing the stock price behaviour of the listed companies. This study has taken up latest data of five years. The data is different from those of previous studies in terms of time period. This study has chosen different companies than previous studies.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter refers to the overall research method from the theoretical aspect to the collection and the analysis of data. Research methodology is the way to systematically solve the research problem. This research tries to perform a well-designed quantitative research in a very clear and direct way using both financial and statistical tools. This study has also developed definite methodologies to achieve the set objectives.

#### **3.2 Research Design**

Generally research design means definite procedure and technique, which guides to study and provides way for research viability. It is the arrangement of collected data and its analysis. A plan of study or blue print for the study represent a series of guideposts to enable the researchers to progress in the right direction in order to achieve the goal is called research design or strategy (Joshi, 2001:12). To achieve the objective of this study descriptive and analytical research study has been used. Some financial and statistical tools have been applied to examine the fact and description techniques have been adopted to evaluate stock price behaviour. All data used in this study are secondary in nature. It is especially based on the price pattern of the share that, increase or decrease. It is based on the recent five year historical data provided by NEPSE.

### 3.3 Sources of Data

To achieve the above-mentioned objective, the research is based upon the secondary data for the quantitative assessment of the information. As input for the study, the secondary data are collected through various published and unpublished documents. Mainly sources of secondary data on study are monthly and annual trading report of NEPSE. In addition supported data and information have been collected from the article of newspaper, brochure, journals, booklets and published and unpublished record of NEPSE. Extensive uses of the bulletin, survey of NEPSE and securities Board have been taken in this study. Moreover, relevant literatures were collected from the central library of TU, library of Shankar Dev campus and library of security board Nepal.

### 3.4 Sample and Population

All the companies listed in NEPSE are considered as total population. At the end of 2008/09 there were altogether 159 listed companies in NEPSE. NEPSE has classified the total number of companies in to eight groups. Only ten companies of eight groups have been sampled for the study. The table (I) below represents the total population and sample.

**Table no. -1  
Population & Sample**

S.	Types of the listed companies (group)	Total population	Sample
1	Commercial banks	21	2
2	Development banks	29	1
3	Insurance companies	17	1
4	Finance companies	61	2
5	Hotels	4	1
6	Manufacturing & processing companies	18	1
7	Trading companies	4	1
8	Others	5	1
Total		159	10

The names of the sample companies are as follows:

1. Himalayan Bank Limited (HBL)
2. Machhapucchre Bank Limited (MBL)
3. Nepal Insurance Company limited (NICL)
4. Nirdhan Uthan Bank Ltd. (NUBL)
5. Pokhara Finance Ltd. (PFL)
6. Citizen Investment Trust(CIT)
7. Taragaon Regency Hotels Limited (TRHL)
8. Unilever Nepal Limited (UNL)
9. Bishal Bazar company Limited (BBCL)
10. Butwal power Company Limited (BPCL)

### **3.5 Analysis and Presentation of data**

Simple descriptive analytical approach has been followed. Results are presented in histograms, line chart and tabular form and clear interpretations are given simultaneously. Detailed calculation and raw data are presented in appendixes at the end of this study.

### **3.6 Data Processing Procedure**

Major objective of the study is to find out the stock price behaviour of the listed companies. To achieve these objectives, statistical tools has been used. The statistical tools used in this study are percentages, bar graph, histograms and line chart and likewise hypothesis t-test, Karl Pearson's correlation coefficient and regression equation have been used to analyze the behaviour of NEPSE index and the share price of the listed

companies. Data collected from secondary sources were analyzed by using the statistical tools like trend analysis, histograms, tabulation and hypothesis paired t-test has been used. They are:

### **3.6.1 Tabulation**

For any statistical enquiry, we need data. So the first step of the statistical enquiry is to collect the data. Then the first data are classified in to different groups according to their similarities. After the data have been classified, the next step is to present them in to tabular form i.e. the data are to tabulate.

Tabulation is the process of arranging the data in an orderly manner into rows and columns. Rows are horizontal arrangements and the columns, the vertical arrangements. The purpose of the tabulation is to simplify the presentation of data and to facilitate comparison between related information. It is the final step of collection of data and is a step of collection of data and is a stepping-stone to the analysis and interpretation of figure. (Bajracharya, 2061:45)

#### **3.6.2.1 Graphs of Time Series or Histogram**

The series formed form a set of value of a variable collected on different period of time is known as time series. The time may be yearly, monthly, daily etc. Most of the series relating to business and economic data are time series. The graphic representation on time series helps in the analysis the changes in the variable with respect to the changes of time .The data forming the time series presented graphically is known as time series graph or line graph or histogram. In time series graph, the independent variable i.e. time is taken along x-axis and the dependent variable under the study is taken along y-axis .Points are plotted with these independent

and dependent variables. These points are joined by straight lines. A suitable title should be given to every graph.

Graph of time series can be drawn either on a natural scale (of Arithmetic scale) or on a ratio scale. In natural scale, the absolute changes from one period to another are shown where we draw graphs of time series on a natural scale.(Bajaracharya,2061:77)

### 3.6.3 Mean

Mean of the set of observations is the sum of all the observations divided by the number of observation:

$$\bar{X} = \frac{\sum X}{n}$$

Where,  $\bar{X}$  = mean value  
 $\sum X$  = Sum of variable  
 $n$  = Number of variable

### 3.6.4 Standard Deviation

It is usually denoted by the letter (small sigma) of Greek alphabet It was, first suggested by Karl Person as a measure of dispersion in 1993. It is the quantity measure of total risk of asset. It measures the dispersion of the return around the mean. Its advantage is that the uncertainty of the return can be summarized into a single easily calculated number. It is defined as a positive square root of arithmetic mean of the squares of deviation of the given observations from their arithmetic mean. Thus if  $X_1, X_2, X_n$  is a set of observation than the standard deviation is given by:

$$\sigma = \sqrt{1/n \sum (X - \bar{X})^2}$$

Where,  $\bar{X} = 1/n \times \sum X$  is the arithmetic mean of the given values  
 (Gupta, 2001:380)

### **3.6.5 Hypothesis**

A quantitative statement about the population parameter is called a hypothesis. In other words, it is an assumption that is made about the population parameter and then its validity is tested. It may or may not be found valid on the verification. The act of verification involves testing the validity of such assumption which, when undertaken on the basis of sample evidence, is called statistical hypothesis. We can find out whether it deserves the acceptance of hypothesis. We can find out whether it deserves the acceptance of hypothesis is the test the characteristics of hypothesized population parameter based on the sample information whether the difference between the population parameter and sample statistic is significant or not. (Chaudhari and Sharma, 2008:229)

#### **3.6.5.1 T-Test**

The branch of statistics that helps in arriving at the criterion for avoiding the risk of taking wrong decision is known as testing of a hypothesis. (Gupta, 1999:1116-1117). The t-distribution, commonly called the student's t-distribution, is used when the sample size is equal to or less than 30 (termed small sample), the parent population from which the sample is drawn is normal, the population standard deviation is unknown and the given observed sample correlation coefficient the following hypothesis are tested.

#### **Hypothesis**

**Null hypothesis ( $H_0$ ):** There is significant difference between the NSE Index before and after the 22 parties entry on government or successive price changes of the stock are independent of 22 parties entry on government.

**Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE Index before and after the 22 parties entry on government or successive price charges of the stock are dependent on 22 parties entry on government.

**Null hypothesis ( $H_0$ ):** There is significant difference between the NEPSE Index before and after the Maoist's entry on government or successive price charges of the stock are independent of Maoist's entry on government.

**Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE Index before and after the Maoist's entry on government or successive price charges of the stock are dependent on Maoist's entry on government.

**Null hypothesis ( $H_0$ ):** There is no significant difference between the NEPSE Index before and after Jan-Andolan-2 or successive price changes of the stock are independent to the incidence.

**Alternative hypothesis ( $H_1$ ):** There is significant difference between the NEPSE index before and after Jan Andolan-2 or successive price charges of the stock are dependent to the incidence.

**Null hypothesis ( $H_0$ ):** There is no significant difference between the NEPSE index before and after the Royal move on government or successive price changes of the stock are independent to the incidence.

**Alternative hypothesis ( $H_1$ ):** There is significant difference Between the NEPSE index before and after the royal move on government or, successive price changes of the stock are dependent on incidence.



**Null hypothesis (H<sub>0</sub>):** There is no significant difference between the NEPSE index before and after Nepal's entry on WTO or successive price changes of the stock are independent on Nepal's entry on WTO.

**Alternative hypothesis (H<sub>1</sub>):** There is significant difference between the NEPSE index before and after entry on WTO of Nepal or successive price changes of the stock are dependent on Nepal's entry on WTO.

### 3.6.6 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 coefficient between two variables (series) X and Y, usually denoted by r (X, Y) or r<sub>xy</sub> or simply 'r' can be obtained as:

$$r_{12} = \frac{\sum x_1 x_2}{\sqrt{\sum x_1^2 \times \sum x_2^2}}$$

The value of correlation coefficient 'r' lies 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,1995: 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)

### 3.6.7 Probable Error (P.E.) of Correlation Coefficient

Probable error of the correlation coefficient denoted by P.E. is the measure of testing the reliability of the computed value of the correlation coefficient, 'r'. The probable error (P.E.) is defined by,

$$P.E.=0.6745\times\frac{1-r^2}{\sqrt{N}}$$

Where,

r= correlation coefficient

N= number of pairs of observations

If  $r < P.E.$  the value of 'r' is not significant no matter how high r value is i.e. there is no evidence of correlation between the variables.

If  $r > 6P.E.$  the value of r is significant i.e. correlation is significant.

(Shrestha and Silwal, 2000: 325)

### 3.6.8 Regression Analysis

Regression analysis means the estimation or prediction of the unknown value of one variable from the known 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 variables or is used for prediction, is called independent variable. (Gupta, 1999: 289: 298)

### 3.6.8.1 Line of Regression of Y on X

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

$$Y=a+bX$$

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

$$\sum Y = na + b \sum X \dots\dots\dots (i)$$

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

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

## **CHAPTER-IV**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1 Introduction**

This chapter is the main part of this study. The data are mostly collected by the secondary source. Such collected data are presented in systematic formats and analyzed using different appropriate tools and techniques.

In this chapter, the relationship of the variables is presented in graphics and figures. The relevant and available data of 10 listed companies were analyzed to study the stock price behaviour number of listed companies, trend of market capitalization, trend of annual turnover and trend of share price of sample company for the current five years and NEPSE index trend from the same period were analyzed to know the movement of stock price trend. Similarly the study also focuses on the effect on share price from the signaling factors and market behaviour of the companies in Nepal.

#### **4.2 The Trend of Annual Turnover of Nepal Stock Exchange (NEPSE)**

Securities market is the market where financial instruments are traded securities market facilitates the process of transferring funds from savers to investors. Listing means the registration of securities are traded in the floor of exchanges. The listing of securities in the NEPSE may be of two types temporary listing and permanent listing temporary listings are done for redeemable securities like redeemable preference share and redeemable debenture while permanent listing are done for common stocks, irredeemable preference share and debentures. Trading in the exchange takes place either on the basis of the auction on a trading floor

or a broker dealer market, previously the NEPSE has adopted an auction system of trading securities. It means transactions of securities were conducted on the open auction principle on the trading floor.

To develop computerized Trading System (CTS) NEPSE has made an agreement with the British Company Comdaq Limited in November, 2006 under the Asian Development Bank (ADB) loan assistance project-corporate and Financial Governance (CFG) at the cost of 300,000 US dollar. The project has targeted to be completed by mid August 2007 which aims to substitute the present open out cry system by electronic system.

The annual turnover of NEPSE of five years (i.e. FY 2004/05 to 2008/09) has been presented in the table no. 4.2

**Table no. - 2**  
**Annual Turnover**

( Rs. in Millions)

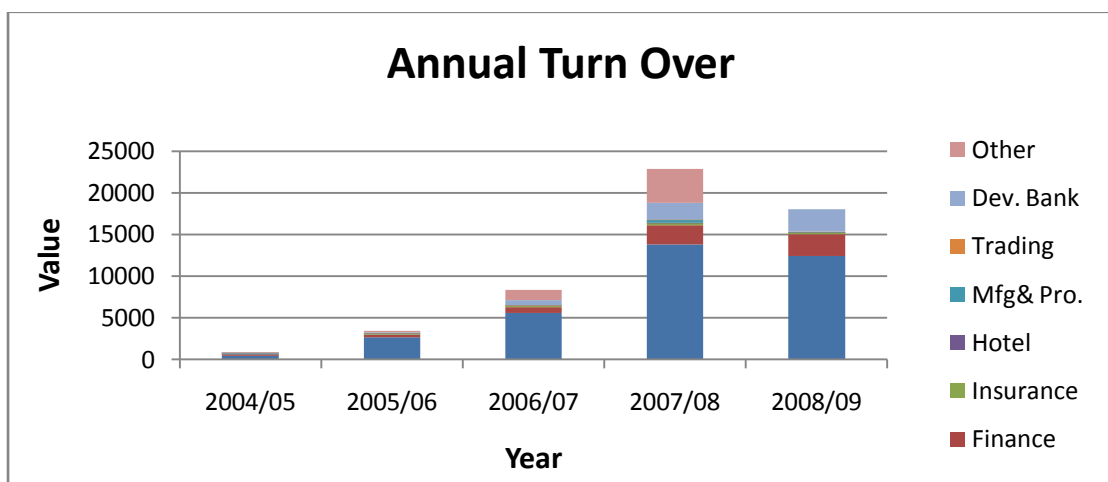
Year Sector	2004/05		2005/06		2006/07		2007/08		2008/09	
	value	percent	value	percent	value	percent	value	percent	Value	percent
Commercial Bank	4021.85	89.22	2696.28	78.12	5563.49	66.55	13822.1	60.57	12406.45	57.22
Finance	216.37	4.8	305.85	8.86	713.57	8.54	2307.5	10.11	2615.40	12.07
Insurance	67.62	1.5	129.90	3.76	204.97	2.45	264.9	1.16	212.80	0.98
Hotel	4.48	0.1	19.77	0.57	7.04	0.08	27.7	0.12	18.69	0.08
Mfg& Pr	114.9	2.55	17.19	0.50	24.27	0.29	343.4	1.50	26.08	0.12
Trading	7.99	0.18	15.80	0.46	10.42	0.12	33.7	0.15	33.49	0.15
Development Bank	22.01	0.49	82.76	2.40	577.55	6.91	1981.1	8.68	2740.36	12.64
Others	52.48	1.16	183.88	5.33	1258.76	15.06	4040.5	17.71	3627.87	16.74
<i>Total</i>	<i>4507.7</i>	<i>100</i>	<i>3451.43</i>	<i>100</i>	<i>8360.07</i>	<i>100</i>	<i>22820.8</i>	<i>100</i>	<i>21681.14</i>	<i>100</i>

*Source: Nepal Stock Exchange Ltd*

Table no.2 shows that the annual turnover of NEPSE during 5 years study period was decreasing trend in year 2004/05 to year 2005/06, however it increased to Rs.8360.07 million in the year 2006/07 in comparison to Rs. 4507.7 million of the year 2004/05 and Rs 3451.43 million of the year 2005/06. Andt it again increased to meet the mark of Rs. 22820.8 million

in the year 2007/08. Through the value of commercial bank was in decreasing order. In 2004/05 the value of commercial bank was Rs.4021.85 million (89.22%) came down to Rs. 2696.28 million (78.12%) in the year 2005/06, but it occupied 66.55% of total turnover in the year 2006/07 and then falls to decreasing order of 60.57% and 57.22% In the years 2007/08 and 2008/09 respectively. Finance sector's turnover has also been fluctuating from 4.8%, 8.86% ,8.54%,10.11% and 12.07% in the years 2004/05, 2005/06, 2006/07,2007/08 and 2008/09 respectively, however it was clearly seen that the trading amount has been increased in those years. In case of Insurance sectors values of annual turnover as well as percentage both were in fluctuating manner. Hotel groups hardly made any presence in overall study period. Manufacturing and processing sector has dominated to other sectors in the year 2004/05 by 2.55% otherwise in other years, it has very less contribution in NEPSE. Trading sectors performance has been in decreasing order where as development bank sector has shown strong presency in the year 2006/07 by occupying 6.91% and other sectors (which included hydropower sector also) has occupied the second position with15.06% in the year 2006/07 which shows its position has been in improving order. These details also have been presented in the figure (4.1).

**Fig. no. 4.1**



### 4.3 Paid up Capital of Listed Companies

Total paid up value is the function of the number of listed shares and companies and paid up value as per listed share. Thus the total paid up value is derived by the paid up value per share of corresponding outstanding shares and summing up the value per share of corresponding outstanding shares and summing up the value of all them. Paid up value indicates the actual amount of investment in assets.

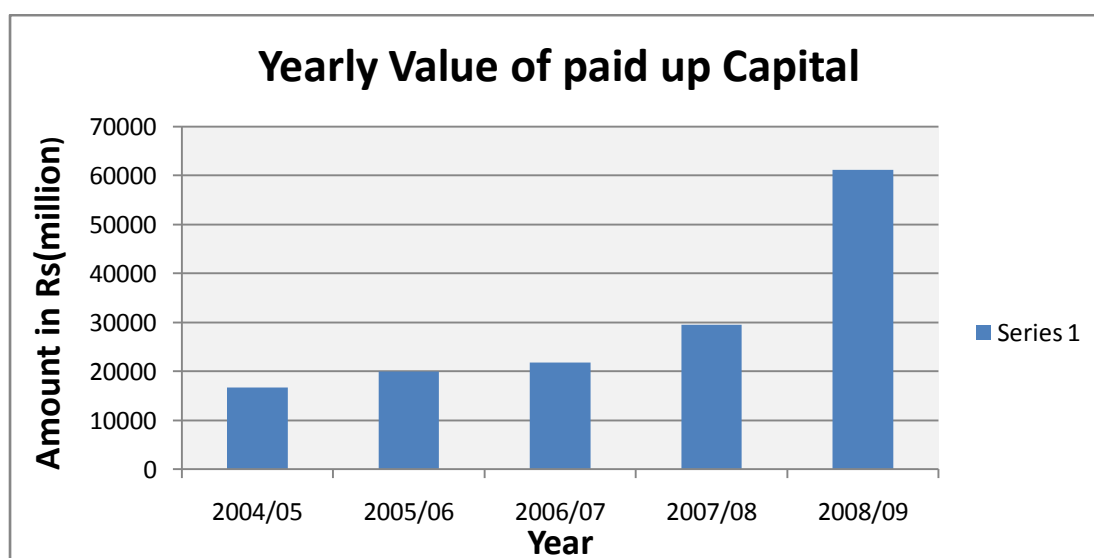
For the analysis of behaviour of paid up capital of listed securities five years total paid up capital value have been taken.

**Table no. 3**

FY	Value of paid up capital in (million)
2004/05	<b>16771.85</b>
2005/06	<b>20008.55</b>
2006/07	<b>21798.80</b>
2007/08	<b>29465</b>
<b>2008/09</b>	<b>61140</b>

Source: SEBON Annual Reports.

**Fig. no. 4.2**



The above table shows yearly value of paid up capital trend from the FY 2004/2005 to 2008/2009. The paid up capital of listed companies has increased year by year. It has the value of 16771.85, 20008.55, 21798.8,29465 and 61140 in terms of million (Rs) in the FY 2004/05, 2005/06, 2006/07, 2007/08 and 2008/09 respectively. It has shown the increasing trend of the paid up capital during the study period.

#### 4.4 The number of listed companies in stock exchange

The table below shows the number of listed companies in Nepal Stock Exchange (NEPSE) from the fiscal year 2004/05 to 2008/09

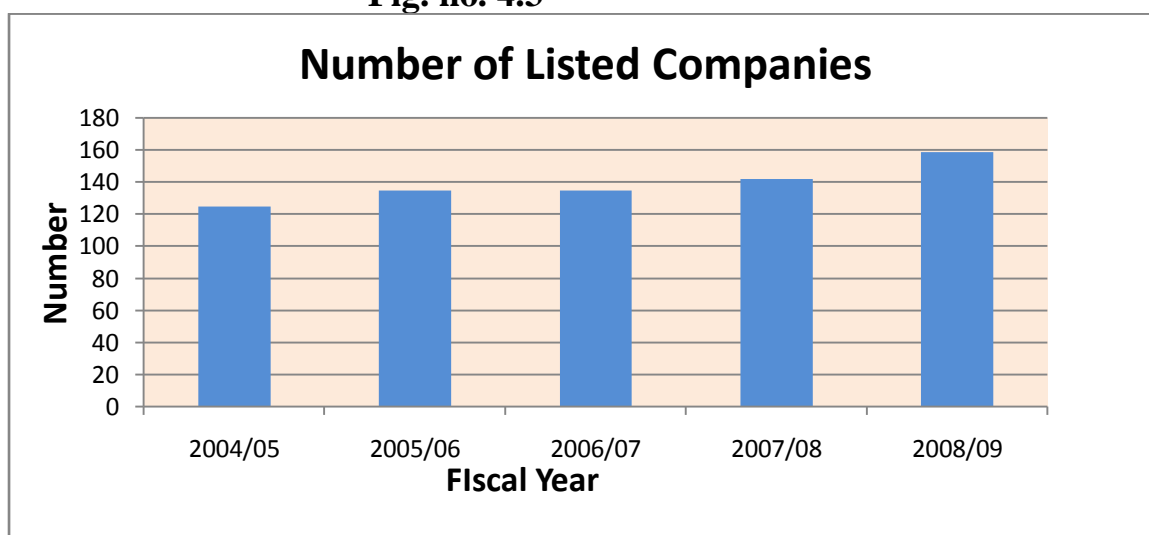
**Table no. - 4**  
**Number of listed companies (FY 2004/05 to 2008/09)**

Fiscal Year	No. of listed companies	% of increase or decrease
2004/05	125	-
2005/06	135	8
2006/07	135	-
2007/08	142	5.18
2008/09	159	11.97

Source: SEBON, Annual Reports

The following bar diagram is used to present the no. of listed companies from FY 2004/05 to 2008/09.

**Fig. no. 4.3**





From the table it is clear that the rate of listing for the first year to second is increasing trend, second year to third year it remains constant. Third year to fourth and fourth year to fifth year it is increasing trend. However it may be affected by the delisting of the companies from the NEPSE. For its clarification, example of FY 2006/07 can be taken. The 12 companies were Listed in the NEPSE and the same number of companies were delisted companies are shown in Appendix-1

#### **4.4.1 The Numbers of Listed Companies under different sector in Stock Exchange**

The table below shows the total number of listed companies under different sector by the end of fiscal year 2008/09

**Table no. - 5**

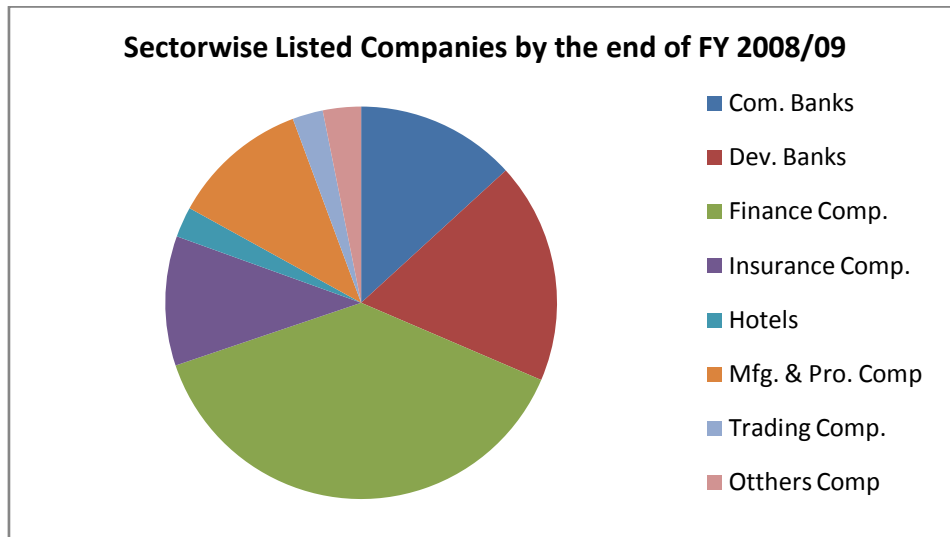
#### **Listing Summary of Companies (FY2008/09)**

S.N	Sector	Number	Percent (%)
1	Commercial banks	21	13.20
2	Development banks	29	18.24
3	Finance companies	61	38.36
4	Insurance companies	17	10.70
5	Hotels	4	2.52
6	Manufacturing & Processing companies	18	11.32
7	Trading companies	4	2.52
8	Other companies	5	3.14
	Total	159	100

Source: SEBON, Annual Report 2008/09

The following chart presents the number of listed companies under different sector by the end of the fiscal year 2008/09

**Fig. no. 4.4**



From the above table, it is clearly see that the total number of listed companies under different sector in NEPSE by the end of fiscal year 2008/09 is 159. The table also shows that the number of finance companies is the highest 61 i.e. 38.36% and the number of Hotel and trading is the lowest 4 i.e. 2.52%

#### **4.5 Market Capitalization Value of Listed Securities**

The market capitalization is derived by multiplying the number of listed shares of all these companies by the closing market price of corresponding shares and by summing them up. Thus the market capitalization is directly or proportionately related to the closing price of the stock. Market capitalization indicates the present value of investment. The value of market capitalization is related with market price of the share. The value of market capitalization changes due to the charging sentiments of the capital market. If the market condition is favorable the market value of assets increases substantially so that the value of the company increases market value further suggest the good performance of the concerned companies. So the investors are highly interested in such

companies for the analysis of trend in market capitalization in the Nepal's capital market five year's total market capitalization has been taken as sample.

This table (6) shows the trend of market capitalization from the FY 2004/05 to 2008/09 as sector wise form.

**Table No. - 6**

**Market Capitalization**

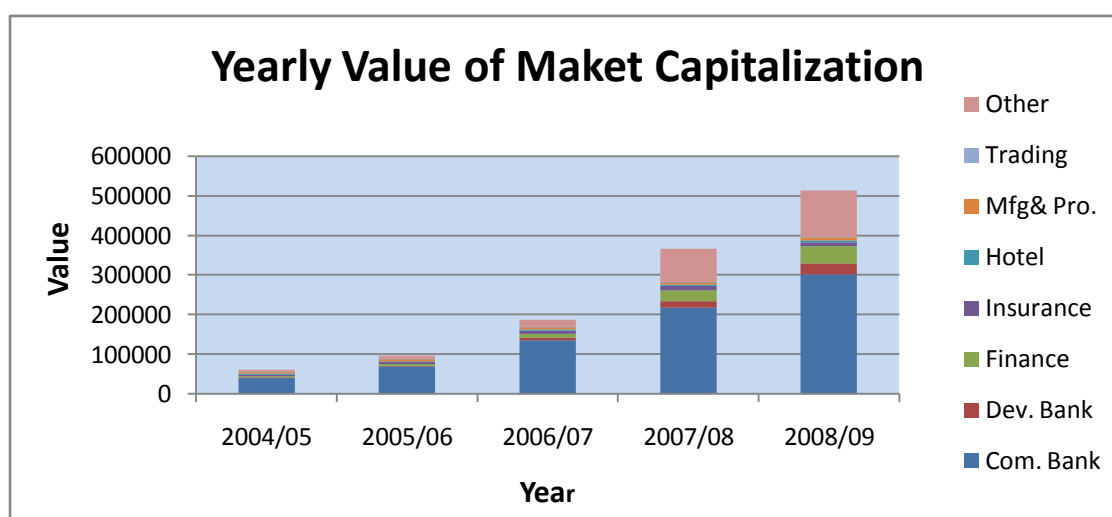
(Rs in millions)

Year	2004/05		2005/06		2006/07		2007/08		2008/09	
	value	percent	value	percent	value	percent	value	percent	value	percent
<b>Commercial bank</b>	40119.9	65.38	68694.4	70.96	135588.4	72.78	218264.2	59.59	302219.29	58.92
<b>Development bank</b>	1050.07	1.71	1577.45	1.63	6010.56	3.23	15619.4	4.65	27137.89	5.29
<b>Finance co.</b>	3666.13	5.97	5000.04	5.17	9889.32	5.31	27113.6	7.40	43007.13	8.38
<b>Insurance co.</b>	3966.1	6.46	4952.19	5.12	8059.78	4.33	10897.2	2.96	10537.49	2.05
<b>Hotel</b>	2308.38	3.76	2344.21	2.42	3261.11	1.75	3484.1	0.95	4851.95	0.95
<b>Mfg&amp; processing co.</b>	5024.83	8.19	5472.11	5.65	6199.99	3.33	6576.2	1.80	7706.09	1.50
<b>Trading co.</b>	635.88	1.04	754.44	0.78	796.36	0.43	686.7	0.19	1696.36	0.33
<b>Other company</b>	4594.62	7.49	8773.3	9.06	16495.75	8.85	83606.1	22.83	115782.88	22.57
<b>Total</b>	61365.9	100	96813.7	100	186301.3	100	366247.5	100	512939.07	100

*Source: Nepal Stock Exchange*

The value of market capitalization has increased up to Rs.512939.07 million in the year 2008/09 in comparison to Rs.61365.9 million in the year 2004/05,ie. The value of market capitalization during the study period has been in increasing trend.

Fig. no. 4.5



The comparative study of contribution on market capitalization of the sample companies, the percentage of contribution of five year from the FY 2004/05 to 2008/09 have been shown below:

Table no. - 7

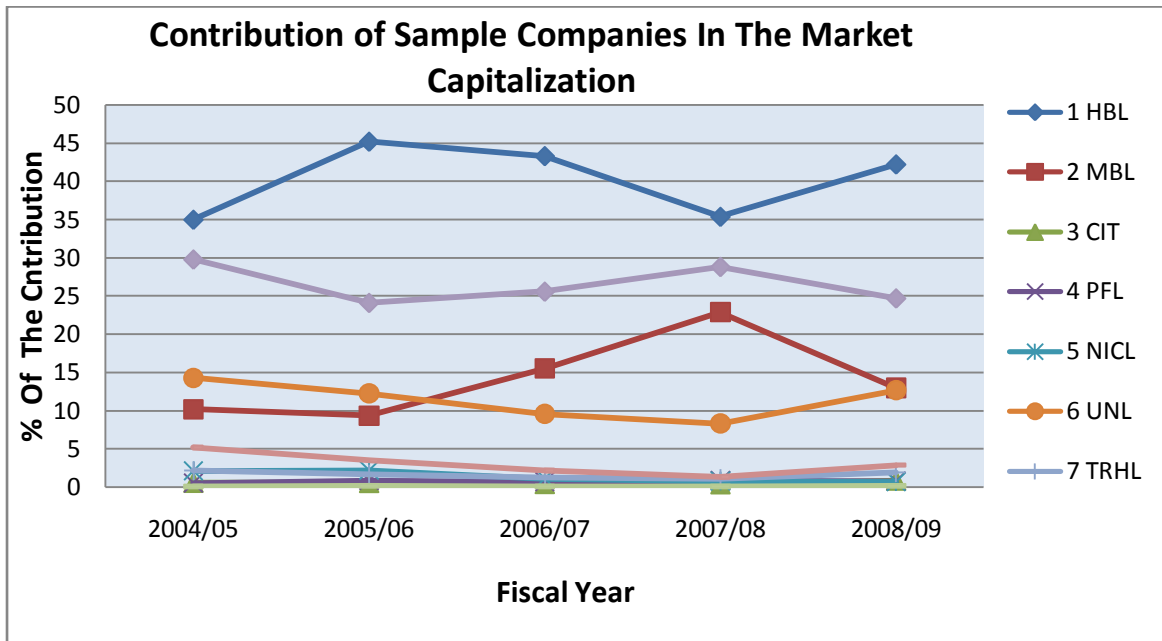
**Contribution of sample companies in the market capitalization:**

S.N	YEAR COMPANY	2004/05	2005/06	2006/07	2007/08	2008/09
1	HBL	35	45.24	43.53	35.38	42.26
2	MBL	10.20	9.37	15.53	22.91	13.01
3	CIT	0.58	0.56	0.43	0.39	0.87
4	PFL	0.53	0.87	0.73	0.87	0.80
5	NICL	2.11	2.21	1.12	0.79	0.71
6	UNL	14.30	12.25	9.55	8.32	12.67
7	TRHL	2.16	1.7	1.25	1.12	1.91
8	BBCL	5.21	3.48	2.14	1.32	2.88
9	NUBL	0.072	0.14	0.11	0.081	0.16
10	BPCL	29.80	24.13	25.6	28.83	24.72

Source: SEBON Annual Reports

The values of above table are derived from the Appendix no.3.1 According to the table the following fig. no 4 has been made for the comparative study.

**Fig. no. 4.6**



#### **4.6 Behaviour of NEPSE Index**

Stock market indexes are used to study the trend of growth pattern in the economy. To analyze as well as to forecast investment trend and to correlate stock market index, NEPSE trend has been used.

The objectives of the NEPSE index are to measure the market movement. There is no other reliable index than NEPSE to measure the market movement. NEPSE index has nearly 16 years long history and it has been accepted by almost all of the investing people. It has reflected the market movement. So market index has always been of great importance for securities analysis. Here NEPSE index has been taken as a measuring tool, whether the performance of stock market is good or not. This clearly focuses on the price of stock that is increasing or decreasing in the market. The higher index suggests the increase in market price of stock and implies the better performance of companies and vice versa. Thus the NEPSE index shows the behaviour of stock price in the capital market.

NEPSE follows the standard and Poor's index method, U.S.A. while calculating the index of share prices. According to this, NEPSE uses the following formula:

$$P_{01} = \frac{\sum P_1 \times Q_1}{\sum P_0 \times Q_0}$$

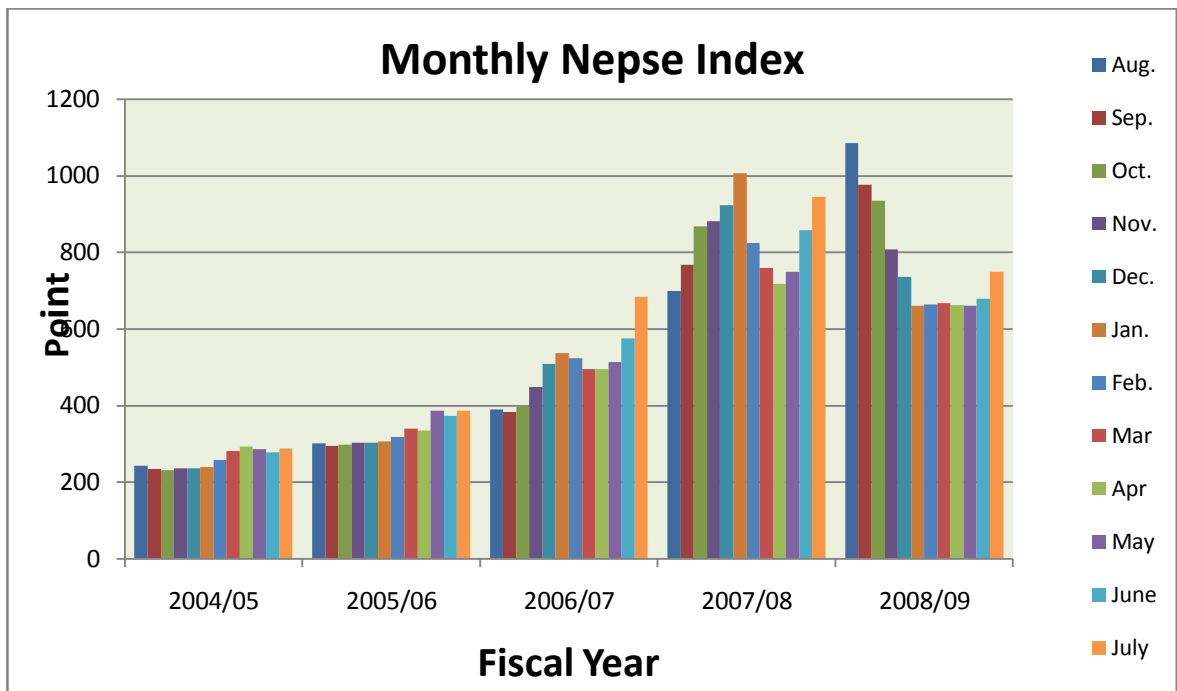
Where,

$P_{01}$	=	NEPSE Price index
$P_1$	=	Today's stock price
$Q_1$	=	Listed share (i. e. No. of share outstanding)
$P_0$	=	Base market price
$Q_0$	=	Base listed share

The index for a day is calculated as the percentage of the aggregate market value of the equity shares of all the companies in the sample on that day to the average market value of equity shares of the same companies during the base period. This method of compilation has the advantages that it has the necessary flexibility to adjust for arbitrary price changes that it has the necessary flexibility to adjust for arbitrary price changes caused by the issue of bonus share and right shares. After the initiation of trading floor, the NEPSE has taken Feb.1994 (Magh 2050) as a base period (*NEPSE daily record, April 15, 1999*).The base period value for the index was initially set at 100.

The comparative monthly index of five years (from the FY 2004/05 to 2008/09) has been taken as a sample to study the behaviour of NEPSE index.

**Fig. no. 4.7**



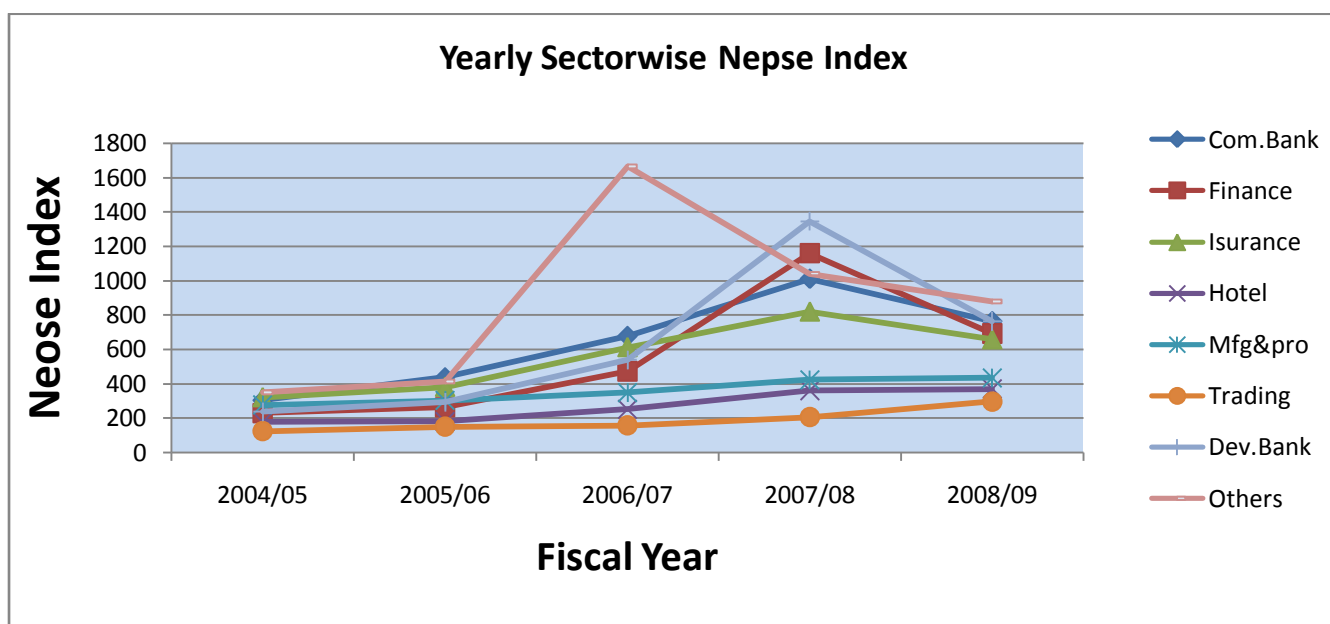
The figure has been drawn based on the appendix no. 1.1 the above figure shows the NEPSE index has started to move up from 241.51 in Aug 2004/05 and the index has increasing trend during five years study period, i.e. in 2004/05, 2005/06, 2006/07, 2007/08 and 2008/09. By the end of the fiscal year 2008/09, the NEPSE index of the listed securities (Price Index) remained to be 749.10points, which is less than that of the last fiscal year 2007/08 end index of 963.36 points. The highest index during the fiscal year 2008/09 was recorded at 1175.38 points on August 31, 2008 and the lowest index was 609.46 points on January21, 2009.

During the study of 5 years period, first half shows the weak position of national economy and the second half shows the improving of national economy. It is clearly seen that by the end of fiscal year 2006/07 NEPSE index going to upward and after the third month of fiscal year 2008/09 the index is slowly going to downward.

#### 4.6.1 Sector Wise Movement of NEPSE Index

The NEPSE index of eight sectors (note that it is further grouped into nine sectors since July 3, 2007 by separating hydropower sector from other sector) Listed in NEPSE from the five years (FY 2004/05 to FY 2008/09) has been taken to comparative analysis.

Fig. no. 4.8



The figure has been drawn based of the appendix no.1.2 the figure shows the sector wise NEPSE index movement. The NEPSE index of insurance and other sectors has reached to a higher level index compared to other sectors index in the FY 2004/05. Then in FY2005/06 and FY2006/07 commercial bank and other sectors index have reached to higher level. In FY 2007/08 Development bank and other sector index reach to higher level and in FY 2008/09 other sector and commercial bank index reach to higher level. The others sectors hydropower has played very important role that is why it is separated into another group since July 3, 2007, but writer has adjusted hydropower in others group for the year 2006/07 to make the study easier. Trading sector's NEPSE index has been dominated



by all other sectors during 2004/05 to 2008/09, however others sectors was dominated by all other sectors in the FY 2004/05. All the sectors of NEPSE index have recorded an increasing behaviour. In overall sectors comparison Commercial bank, Insurance and others sectors have moved along the NEPSE index competitively. During the FY 2008/09 the NEPSE index has decreasing trend due to political causes it is very bad to the overall economy. In our study period NEPSE index had reached highest point in FY 2007/08, the sectors like in Finance, Insurance, Hotel, Commercial Bank and Development Bank but there after the FY 2007/08 NEPSE index has decreasing in all sectors. But in Hotel sectors there was up and down fluctuation has seen in the study period. However the overall scenario of all the sectors has an improving trend left FY 2008/09.

#### **4.7 Equity share price behaviour of listed companies**

In this part, the movements of listed companies were analyzed so as to know the price trend of the companies. Out of 159 listed companies of FY 2008/09 are taken as sample for the purpose of study out of which two are the commercial bank, two are the finance companies and one each from development bank insurance company, Hotel manufacturing and processing company and other sectors.

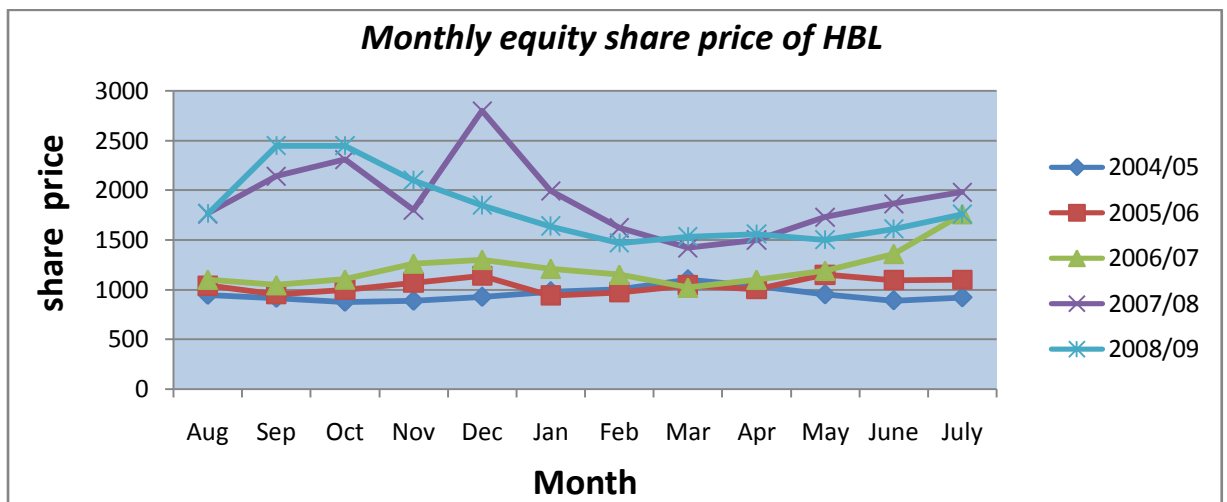
Out of commercial bank, Himalayan Bank Limited and Machhapuchhre Bank limited and among finance companies citizen Investment Trust and Pokhara Finance Ltd has been taken. Similarly Nepal Insurance Company Limited, Unilever Nepal Limited, Bishal Bazaar Company Limited, Nirdhan Uthan Bank Limited and Butwal Power Company limited are chosen from the sector, Insurance, Manufacturing & processing, Hotels, Trading, Development bank and others respectively as a sample for the purpose of study. The data available from the NEPSE Trading Report

were gathered & presented in the form of graphs and tables; so that it becomes easier for the researcher to analyze and interpret it easily and systematic manner.

### **HIMALAYAN BANK Ltd.**

Monthly share price of five year from FY 2004/05 to FY 2008/09 has been taken to analyze the share price behaviour of Himalayan Bank Ltd. The figure below corresponds to the data presented in the appendix no. 2.1

**Fig. no. 4.9**



It shows the upward trend of the monthly share movement of the HBL share within the observed period. The highest closing price is Rs.1760 in the month of July 2007 and the lowest closing price is Rs 764 in the month of April 2004. The whole data of the study period shows that there is very much fluctuating i.e. up & down movement in the share price of HBL. However, the closing price of every year's i.e. Share price of each July month clearly indicates that there is positive movement during the study period.

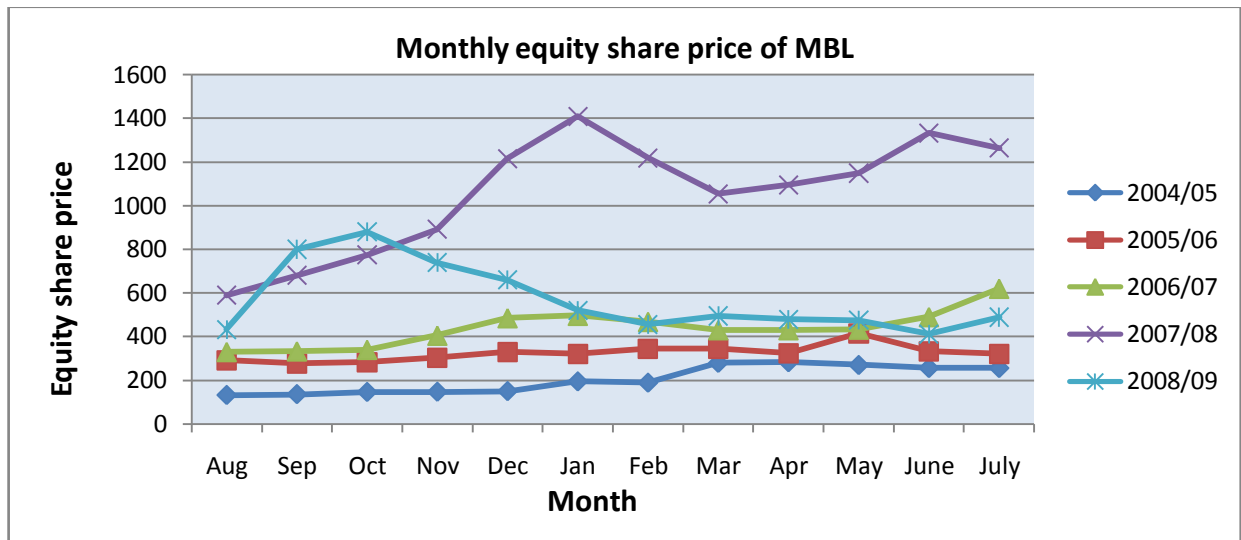
In short we can say that the share price has reached its maximum value in the FY 2006/07 and the lowest in 2004/05. Moreover the increasing trend

of the price is slightly higher than the decreasing trend. This concludes that the overall monthly price movement of HBL is in the increasing trend with the sign of significant fluctuation during the study period.

### **MACHHAPUCHCHRE BANK Ltd.**

To analyze the share price behaviour of Machhapuchhre Bank Ltd, the monthly share price of five year (from the FY 2004/05 to 2008/09) has been taken as sample. The figure below corresponds to the data presented in appendix no. 2.2

**Fig. no. 4.10**



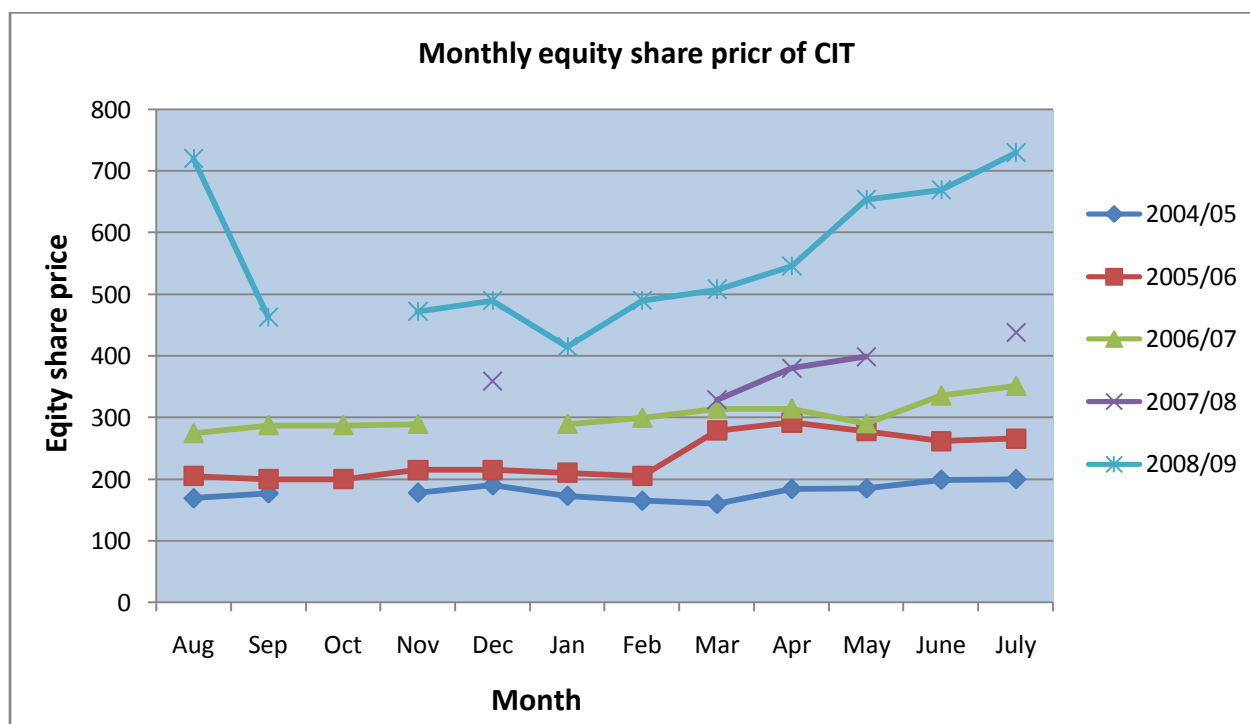
The figure shows the monthly share price movement of Machhapuchhre Bank Ltd. It shows the upward trend of the share price since its listing in July 2003. During the year 2004/05 there was no drastic change in its price; however from June 2004 with price 112, its price increased & up to May 2006 for Rs.415. Then its price fall down and moved upward slowly and reached Rs 620 at end of FY 2007/08 period with marginal fluctuation showing positive trend. The highest closing price is Rs.1335 in the month of June 2008 and the lowest of closing price is Rs 131 in the month of August 2004.

In short the decreasing trend of the share price movement of MBL shows the increasing trend. Thus the overall monthly price movement of MBL shows the increasing trend during the study period without FY 2008/09.

### CITIZEN INVESTMENT TRUST

Monthly share price of five years from (FY2004/05 to FY2008/09) has been taken to analyze the share price behaviour of citizen Investment Trust.

**Fig. no. 4.11**



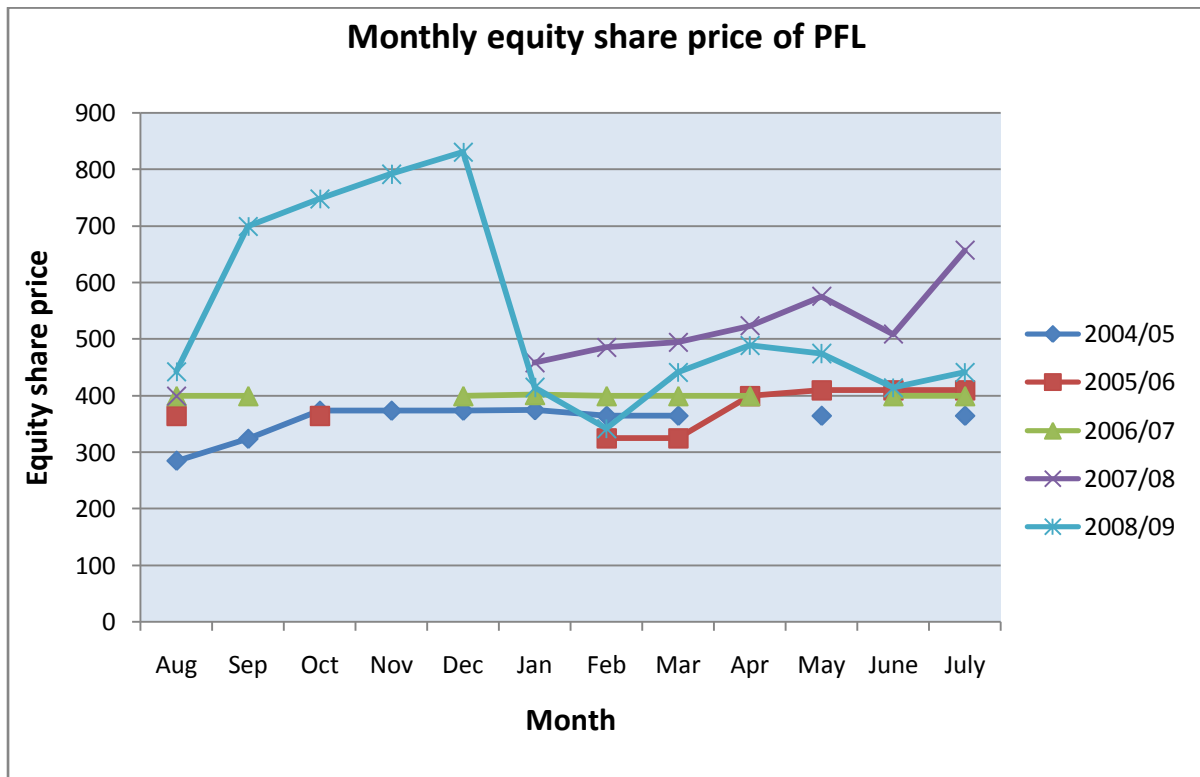
The figure corresponds to the data presented in the appendix no. 2.3. The above figure shows the monthly share price movement of CIT. According to the given data the share price of the Citizen investment trust, Rs. 169 in the share price movement of CIT. According to the given data the share price of the Trust, Rs.169 in the month Dec2004, Jan2004 and March 2005 is the lowest and Rs.730 in the month July 2009 is the highest Before July 2009, it never reached in such a peak point. The data shows

that the share price of CIT has increasing trend, however it also clearly shows that there are some irregularities i.e. some fluctuation. But in conclusion since the increasing trend of share price of CIT is more in comparison to decreasing trend, CIT has the increasing or upward trend during the study period.

### **POKHARA FINANCE Ltd.**

Monthly closing price of five years (from FY 2004/05 to 2008/09) has been taken to analyze the share price behaviour of the Pokhara Finance Ltd.

**Fig. no. 4.12**



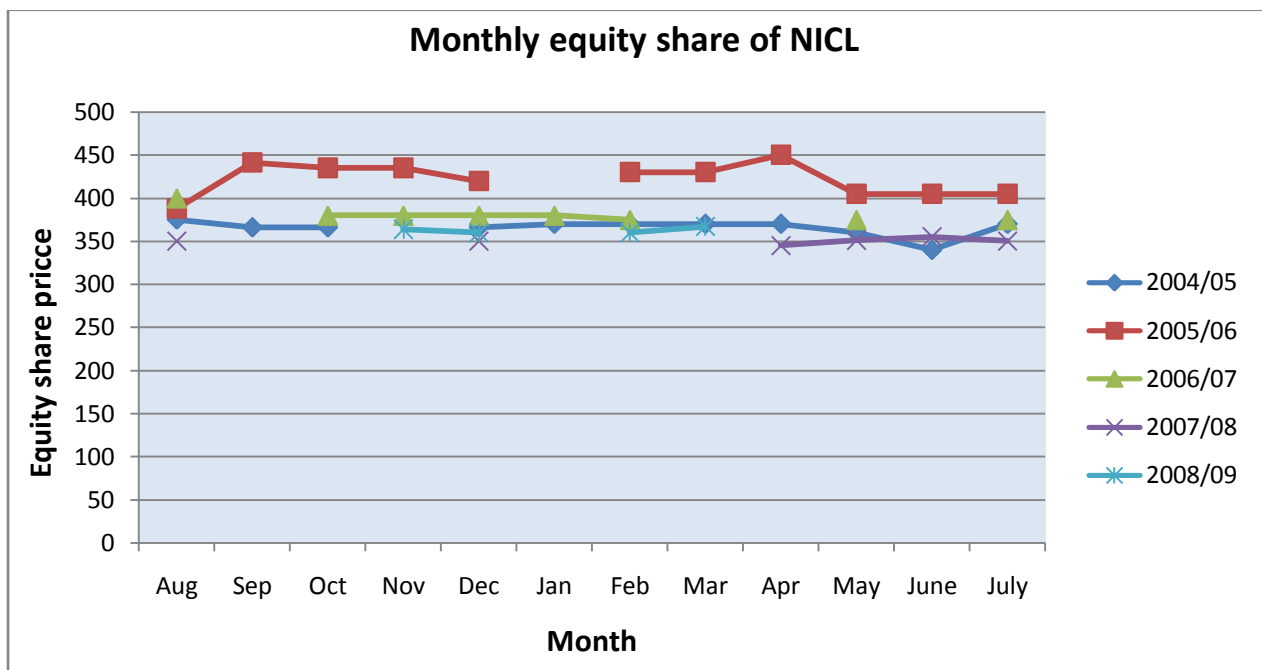
The figure has been drawn based on the appendix no. 2.4 According to this figure the share price of Pokhara Finance Ltd is not in increasing order. It has started to move up from the price Rs 285 in August 2004. It has increased and reached to price Rs 831 in December 2008 and the

share price of Pokhara Finance Ltd remains around Rs400 decreasing value comparing to end of FY 2008/09. Since the share price of PFL at the end of study period is lower than the previous year it, shows that the performance of PFL is poor.

### NEPAL INSURANCE COMPANY LIMITED

Monthly share price of five years (from FY 2004/05 to 2008/09) has been taken to analyze the share price behaviour of Nepal Insurance Company Limited.

**Fig. no. 4.13**



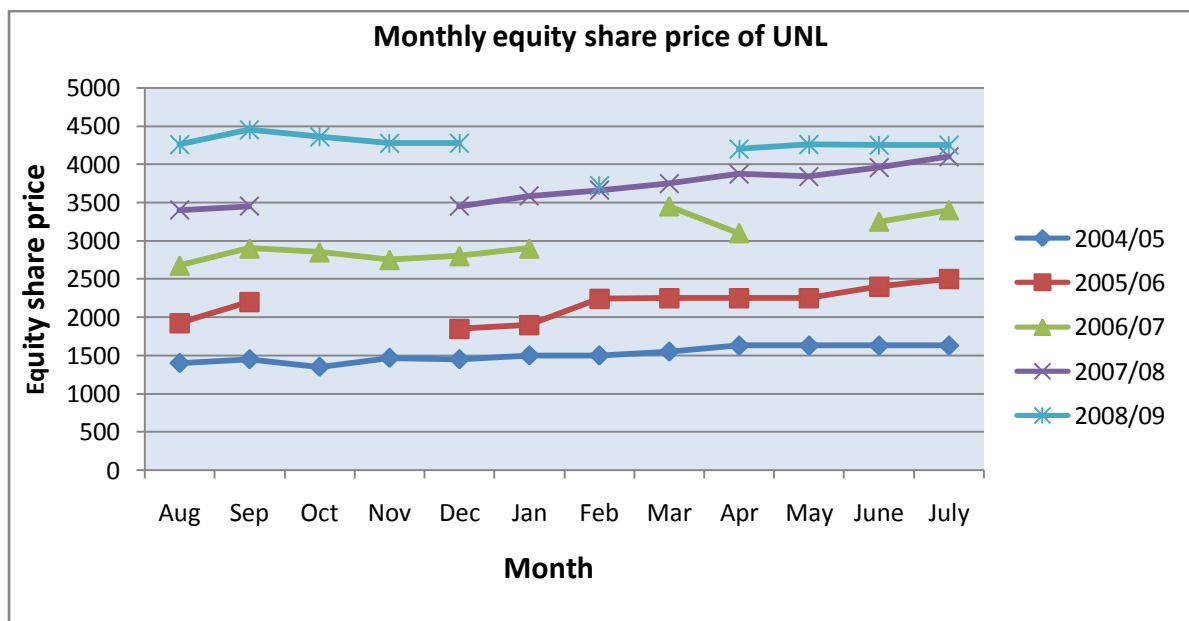
The figure corresponds to the data presented in the appendix no.2.5. The above figure shows the monthly share price movement of NICL based on closing price. According to the given data, the share price of the NICL has moved up from the price value of Rs375 in August 2004 and reached Rs 367 in end of 2009. During the study period, the maximum closing price of the company is Rs 450 in April 2006 and the lowest closing price is Rs 340 in June 2005. Except the period of FY2005/06, the share price

of the company for the whole study period remains in decreasing order i.e., the increasing trend of the share price is lower than the decreasing trend. So in overall analysis the share price movement of NICL has decreasing trend and the downward movement of the graph clearly indicates the deteriorating situation of NICL during the analysis or study period.

## UNILEVER NEPAL LIMETED

Monthly share price of five years (from the FY 2004/05 to 2008/09) has been taken as sample to study the share price movement of Unilever Nepal Ltd.

**Fig. no. 4.14**



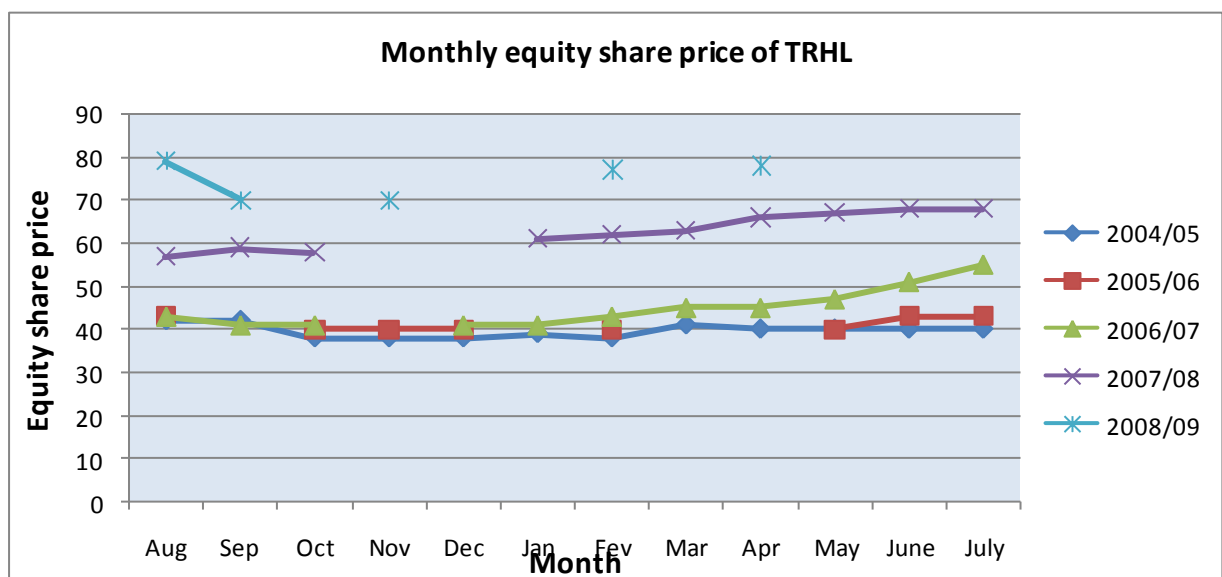
The figure corresponds to the data presented in the appendix no.2.6. The above figure shows the monthly share price movement of Unilever Nepal Ltd. According to the given data, the highlighted value of share price is Rs 4452 in February 2008 and the lowest is in October 2004. The price trend of the company is in increased trend with a marginal fluctuation. The decreasing trend of share price is lower than the increasing trend. So

in overall analysis, the share price movement of UNL has increasing trend during the study period and has shown improving performance in the Nepalese capital market.

### TARAGAON REGENCY HOTEL LIMITED

Monthly closing price data of five years (from FY2004/05 to 2008/09) has been taken as sample to study the share price behaviour of Taragaun Regency Hotel Ltd.

**Fig. no. 4.15**



According to this figure the share price movements of Taragaun Regency Hotel Ltd has a decreasing trend. The figure has been drawn based on the appendix no 2.7. It has started to move up from the price Rs 42 in August 2004 and rose up to price Rs 79 in August 2008. It has decreased to Rs 38 in October 2004 and started increasing from March 2005. However it started to increase from February 2007 but could not cross Rs 80 during the whole study period. It means it has shown the up down trend. The price has decreased to Rs 38 in October, November and December of 2004 which are the lowest price of the hotel during the study period. The

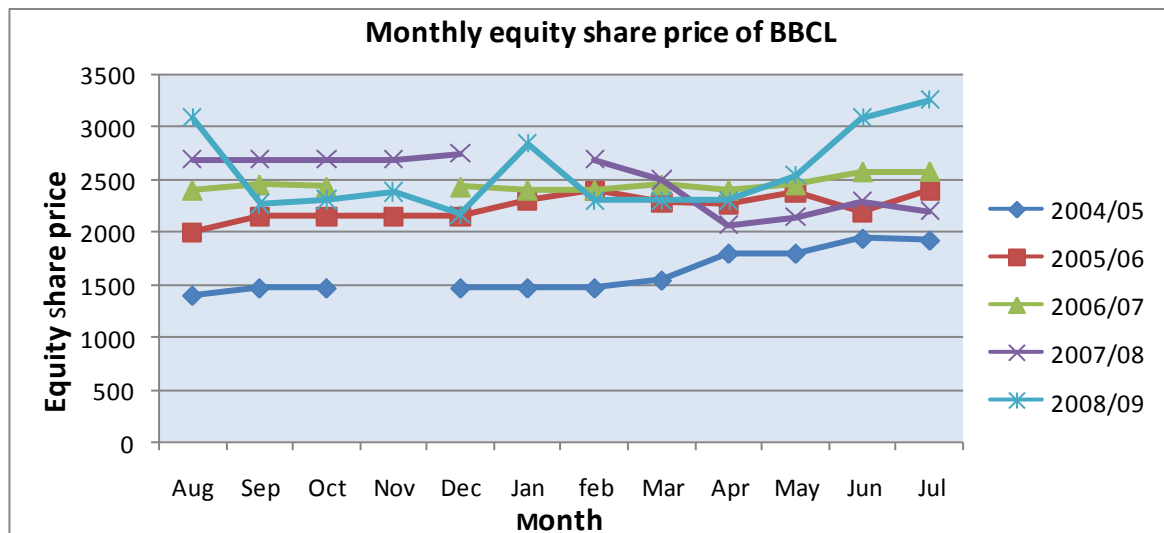


figure shows the increasing share price behaviour of Taragaun Regency Hotel Ltd After FY 2007. The poor performance of the Ltd is shown by the share price of Taragaun Regency Hotel Ltd, which is lower than the par value of share. It shows that the performance of THRL is getting even and worse during the study period. However in the yearly comparison, the condition has been improved during the FY 2006/07 but even less than par value.

### **BISHAL BAZAR COMPANY LIMITED**

Monthly closing share price of five years (from FY 2004/05 to 2008/09) has been taken as a sample to study the equity share price behaviour of Bishal Bazar Company Ltd.

**Fig. no. 4.16**



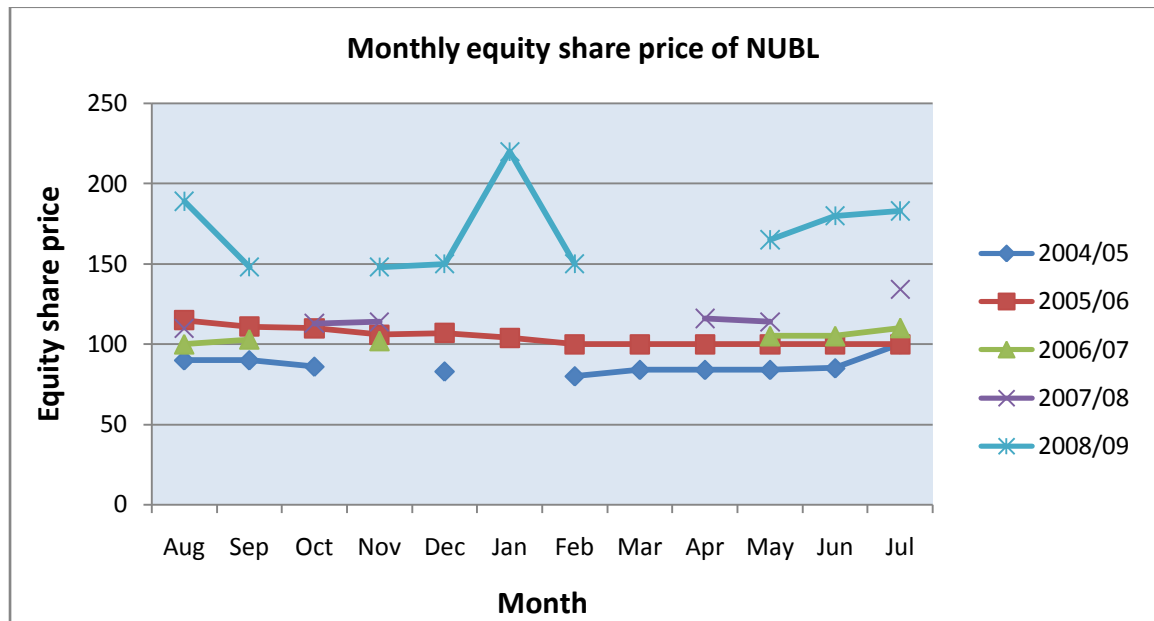
According to the figure the share price movement of Bishal Bazar Company Ltd has moved to increasing trend. The figure has been drawn based on the appendix no.2.8. The highest closing price of the company during the study period is Rs 3264 in July 2009 and the lowest price is Rs1400 in August 2004. Though, during the FY2004/05, the price of the company is in decreasing line and in other years also there are some

fluctuation, the increasing trend is more in comparison to decreasing. So in overall, it is concluded that the share price of BBCL is in increasing trend and the performance of the company is well satisfactory during the analysis period.

## NIRDHAN UTTHAN BANK LIMITED

Monthly closing share price of five years (from FY 2004/05 to 2008/09) has been taken to analyze the share price behaviour of Nirdhan Utthan Bank Limited.

**Fig. no. 4.17**



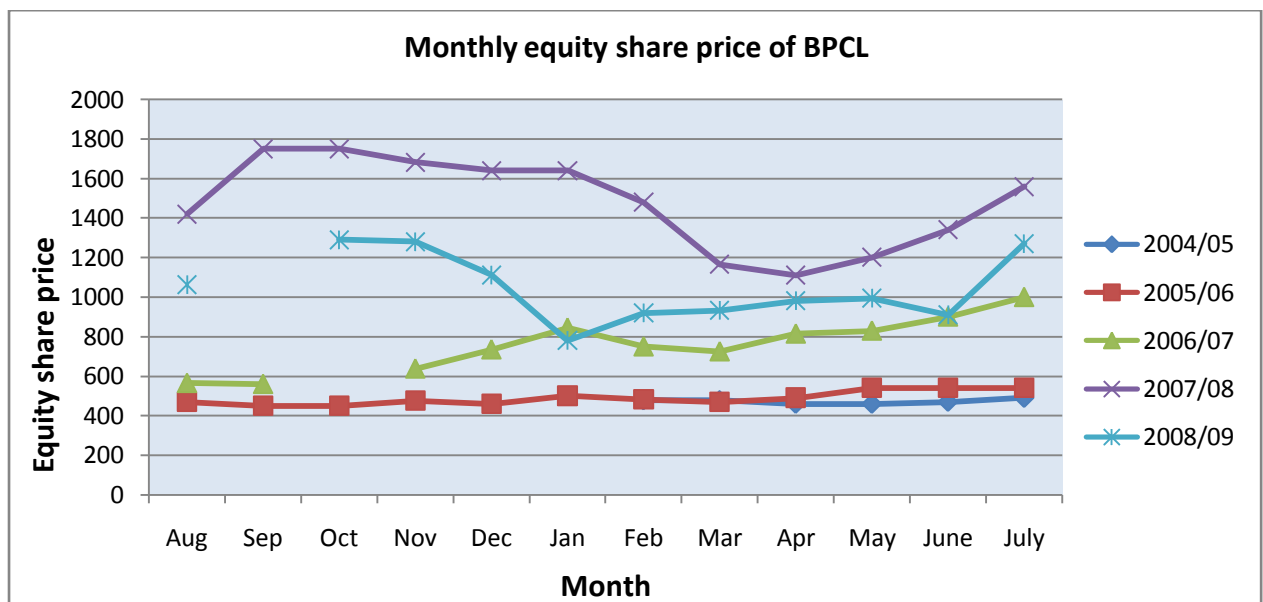
The figure corresponds to the data presented in the appendix no 2.9. The above figure shows the monthly share price behaviour of NUBL. According to our study period the closing price the bank started from Rs 90 in August 2004 and has reached minimum value of Rs80 in February 2005. It reached the maximum value or Rs. 220 in January 2009, then it never cross the value of Rs 220. The data shows that there are no regular transactions of this bank in the NEPSE. The decreasing trend of the share

price is negligible in comparison to increasing trend. So, in overall analysis the share price behaviour of NUBL has increasing trend and the upward movement of graph clearly indicate the deteriorating situation of NUBL during the analysis period.

### **BUTAWAL POWER COMPANY LIMITED**

Monthly share price of five years (from the FY 2004/05 to 2008/09) has been taken as a sample to study the share price behaviour of Butwal Power Company Limited.

**Fig. no. 4.18**

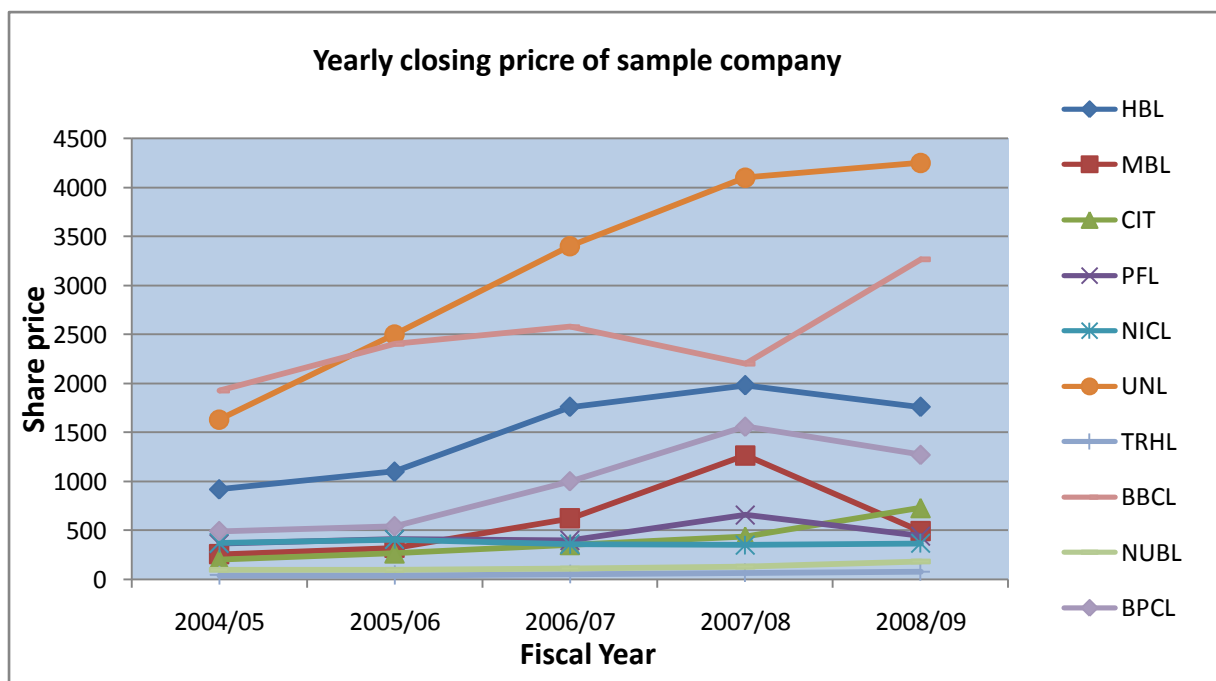


The figure has been drawn based the data of appendix no. 2.10. However its transaction started in NEPSE trading floor since February 2005 with the price value of Rs 478. During the study period, its minimum value reached at Rs 450 in September and October month of 2005 and the maximum value is at Rs. 1750 in September and October 2007. In the short period of listing BPCL has shown the good performance. It can be concluded because of its increasing trend.

## Comparative study of the closing share price of the sample companies

Yearly closing share price of sample companies in FY2004/05 to 2008/07 has been taken for a comparative study of this price.

**Fig. no. 4.19**



The figure has been drawn based on the appendix no 2.11. The figure has shown the trend of yearly closing share price of sample companies. The figure tells about the comparative study of the sample companies.

Unilever Nepal Limited's share price has reached to the top level among sample companies in the FY2008/09. In this period BBCL, HBL and BPCL have 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> position respectively. In the FY 2004/05, BBCL topped the 1<sup>st</sup> position with 1925 closing price whereas UNL, HBL and BPCL have 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> position respectively. In the FY2005/06, 2006/07, 2007/08 and 2008/09 UNL 1<sup>st</sup> BBCL 2<sup>nd</sup> HBL 3<sup>rd</sup> and BPCL 4<sup>th</sup> position respectively. These UNL, BBCL, HBL and BPCL companies have good performance in the market. Their share price has high demand

than sample companies. But TRHL, NUBL, NICL do not have good performance. Among the sample companies, TRHL has very poor performance in the market. Its market value of share is even less than par value. The comparative study of sample companies shows that more of the companies have increasing share price behaviour. That's why the share price market of Nepal is hopefully optimistic.

#### **4.8 Analysis of the environment effect on the stock price**

To test the stock price change dependent or independent on environmental factor paired t-test has been conducted. To find the impact of environmental factor on stock price, 20 days NEPSE index of these incidents has been taken. NEPSE index, 10 days before & after the incident, has been taken to analyze the impact on stock price.

Five incidents, i.e. 22 parties on Government 15, June 2009, Entry of Maoist on government on 1<sup>st</sup> April 2007, success of Jan-Andolan -2 on 24 April 2006, Royal move on Government and Nepal's entry on WTO are taken as a sample of environmental incident to analyze the effect. These incident-wise data has been analyzed with the help of paired t-test. The details of calculation have been shown in appendix no.4 and hypothesis formulation, interpretation & graphs has been presented below.

#### **Hypothetical decision on the entry of 22 parties on Government at 15, June, 2009**

Mean Deviation  $\bar{d} = 12.861$

Standard deviation ( $S_d$ ) = 5.5603

(Detail calculations have been shown in the appendix no. 4.1)

**(i) Formulation of Hypothesis**

**(a)** Null Hypothesis ( $H_0$ ):  $\bar{d} = 0$ . i. e. there is no significant

Difference between the NEPSE index before and after the entry of 22 parties on government or the successive price changes of stock are equal on the coincidence.

**(b)** Alternative Hypothesis ( $H_1$ ):  $\bar{d} \neq 0$  i. e. there is significant difference between the NEPSE indexes before and after the entry of 22 parties on Government or the successive price change of stock are not equal on 22 parties on Government.

**(ii) Level of significant:**  $\alpha = 5\%$

**(iii) Number of observation:**  $n = 10$  (n < 30)

Apply t-test.

**(iv) Test statistics: under  $H_0$**

$$t = \frac{\bar{d}}{S_d / \sqrt{n}} \sim t_{n-1}$$

Where,  $\bar{d} = \sum d/n$

d = difference between sample pairs (X1- X2)

$$t = \frac{12.861}{5.5603\sqrt{10}}$$

$$t = 0.7314$$

$$|t| = 0.7314$$

**(v) Area of Critical Reason**

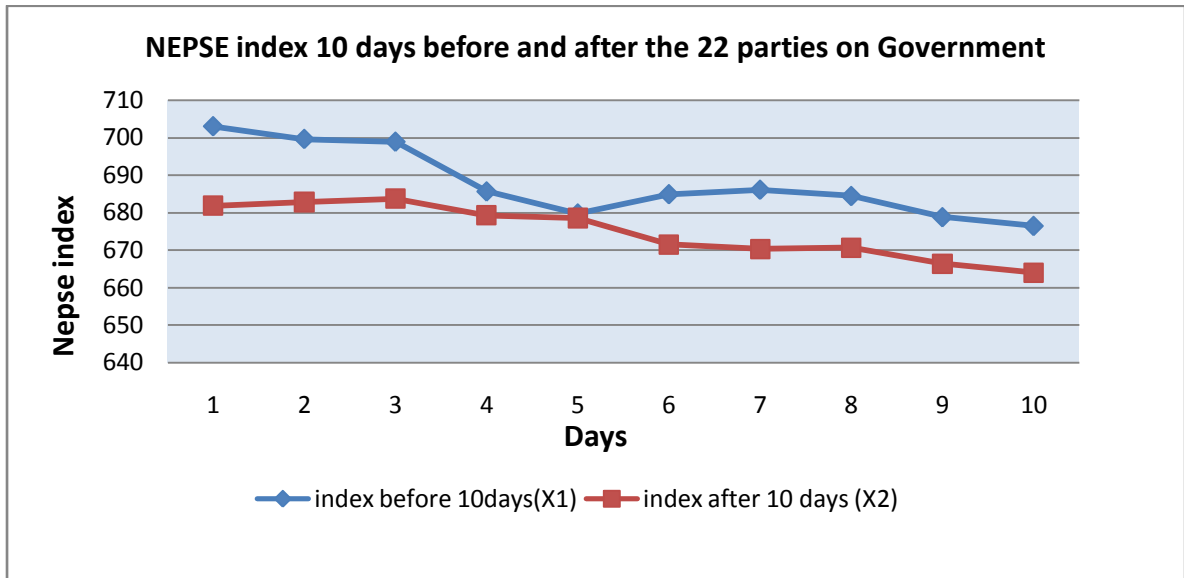
Table value of t at 5% level of significant (10-1) = 9 degree of

Type equation here. Freedom in two tailed test is. 2.262

**(vi) Decision**

Calculated value  $|t| < \text{Tabulated } |t|$ , Therefore  $H_0$  is accepted which means  $H_1$  is rejected which means the successive price changes of stock equal on the coincidence.

**Fig. no. 4.20**



The above fig. no. 4.20 shows that the NEPSE index is in decreasing trend after the event and it started to decrease after the incident. From the above calculation, calculated value of  $t$  is positive (0.7314). This means that the negative impact on the NEPSE index from entry of 22 parties on Government.

**Hypothetical decision on the entry of Maoist on Government at 1<sup>st</sup> April, 2007**

Mean Deviation  $\bar{d} = -1.243$

Standard deviation ( $S_d$ ) = 8.8397

(Detail calculations have been shown in the appendix no. 4.2)

## i. Formulation of Hypothesis

- a. **Null Hypothesis ( $H_0$ ):**  $\bar{d} = 0$ . i. e. there is no significant difference between the NEPSE index before and after the Maoist's entry on government or, successive price change of stock are independent to coincidence.
- b. **Alternative Hypothesis ( $H_1$ ):**  $\bar{d} \neq 0$  i. e. there is significant difference between the NEPSE index before and after the Maoist's entry on government or, successive price change of stock is dependent to coincidence.

(ii) **Level of significant:**  $\alpha = 5\%$

(iii) **Number of observation:**  $n = 10$  (n < 30)

Apply t-test.

(iv) **Test statistics: under  $H_0$ :**

$$t = \frac{\bar{d}}{S_d / \sqrt{n}} \sim t_{n-1}$$

$$\text{Where, } \bar{d} = \frac{\sum d}{n}$$

d = difference between sample pairs (X1- X2)

$$t = \frac{-1.243}{8.8397/\sqrt{10}}$$

$$t = -0.04446$$

$$|t| = 0.04446$$



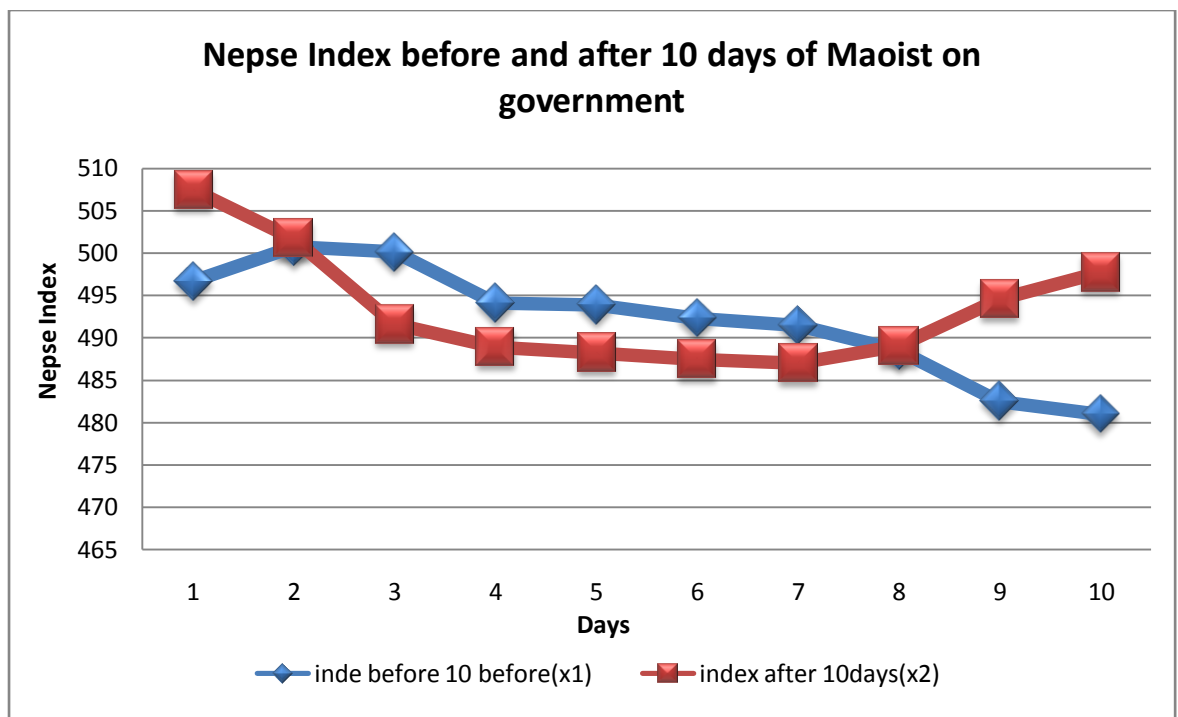
**(v) Area of Critical Reason**

Table value of t at 5% level of significant (10-1) = 9 degree of freedom in two tailed test is. 2.262

**(vi) Decision**

Calculated value  $|t| < \text{Tabulated } |t|$ , Therefore  $H_0$  is accepted and  $H_1$  is rejected which means there is no significant difference between the NEPSE index before and after the Maoist entry on government or the successive price change of stock is independent to coincident.

**Fig. no. 4.2**



The above figure shows that there is neither any change nor any one side effect in the NEPSE index. However, the calculated value of is negative which shows the positive effect on NEPSE index.

## Hypothetical decision on the success of Jan Andolan-2 at 24 April, 2006

Mean Deviation  $\bar{d} = -28.242$

Standard deviation  $(S_d) = 14.0941$

(Detail calculations have been shown in the appendix no. 4.3)

### (i) Formulation of Hypothesis

(a) **Null Hypothesis ( $H_0$ ):**  $\bar{d} = 0$ . i. e. there is no significant difference between the NEPSE index before and after Jan Andolan-2 or successive price changes of stock are independent to coincidence.

(b) **Alternative Hypothesis ( $H_1$ ):**  $\bar{d} \neq 0$  i. e. there is significant difference between the NEPSE index before and after Jan Andolan-2 or, successive price changes of stock are dependent to coincidence.

(ii) **Level of significant:**  $\alpha = 5\%$

(iii) **Number of observation:**  $n = 10$  ( $n < 30$ )

Apply t-test.

(iv) **Test statistics: under  $H_0$**

$$t = \frac{\bar{d}}{S_d / \sqrt{n}} \sim t_{n-1}$$

$$\text{Where, } \bar{d} = \sum d/n$$

$d$  = difference between sample pairs ( $X_1 - X_2$ )

$$t = \frac{-28.242}{14.0941\sqrt{10}}$$

$$t = -6.3366$$

$$|t| = 6.3366$$

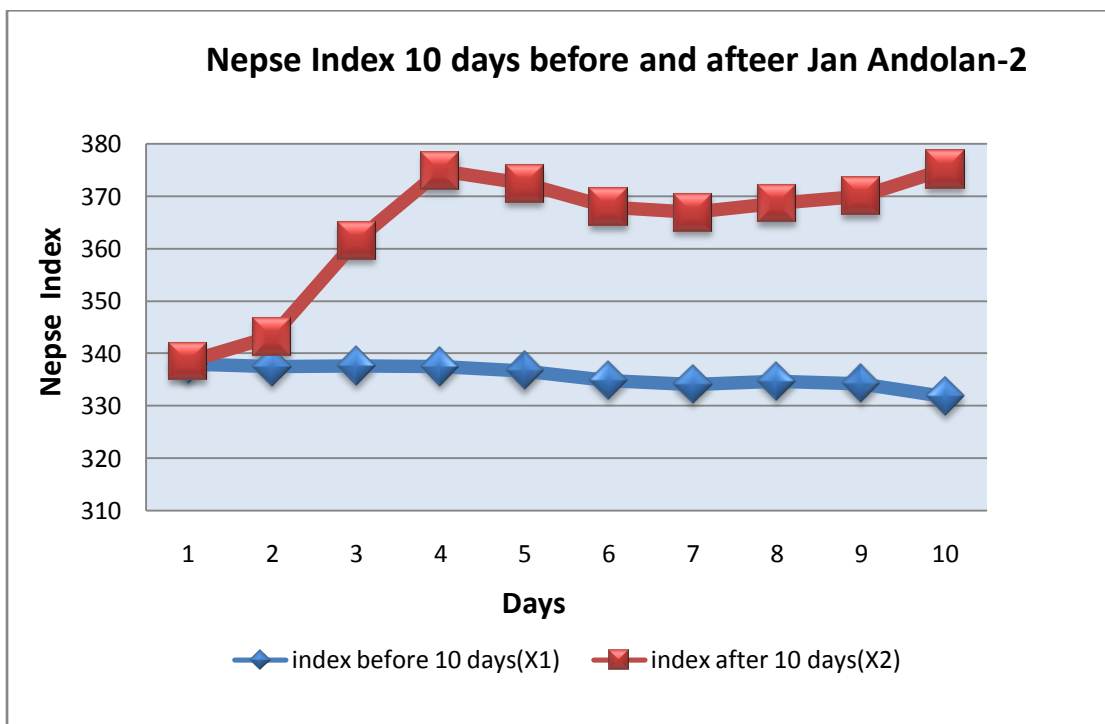
**(v) Area of Critical Reason**

Table value of t at 5% level of significant (10-1) = 9 degree of freedom in two tailed test is. 2.262.

**(vi) Decision**

Calculated value  $|t| >$  Tabulated value, Therefore  $H_0$  is rejected and  $H_1$  is accepted which means there is significant difference between the NEPSE index before and after Jan Andolan-2 or the successive price change of stock is dependent on coincident.

**Fig. no. 4.22**



The above fig. shows that the NEPSE index was in decreasing trend before the event and it started to increase after the incident since calculated value of t is negative it shows the positive effect on NEPSE

index from the incident. This means the Jan Andolan-2 had positive effect on the NEPSE index.

### **Hypothetical decision on the Royal move government at 1 Feb. 2005**

Mean Deviation  $\bar{d} = -9.473$

Standard deviation ( $S_d$ ) = 3.2515

(Detail calculations have been shown in the appendix no. 4.4)

#### **(i) Formulation of Hypothesis**

(a) **Null Hypothesis ( $H_0$ ):**  $\bar{d} = 0$ . I.e. there is no significant difference between the NEPSE index before and after the Royal moved on government or, successive price change of stock are independent to coincidence.

(b) **Alternative Hypothesis ( $H_1$ ):**  $\bar{d} \neq 0$  i.e. there is significant difference between the NEPSE index before and after the Royal Move on government or, successive price change of stock are dependent to coincidence.

(ii) **Level of significant:**  $\alpha = 5\%$

(iii) **Number of observation:**  $n = 10$  ( $n < 30$ )

Apply t-test.

(iv) **Test statistics: under  $H_0$**

$$t = \frac{\bar{d}}{S_d / \sqrt{n}} \sim t_{n-1}$$

$$\text{Where, } \bar{d} = \frac{\sum d}{n}$$

d = difference between sample pairs (X1- X2)

$$t = \frac{-9.473}{3.2515\sqrt{10}}$$

$$t = -9.2130$$

$$|t| = 9.2130$$

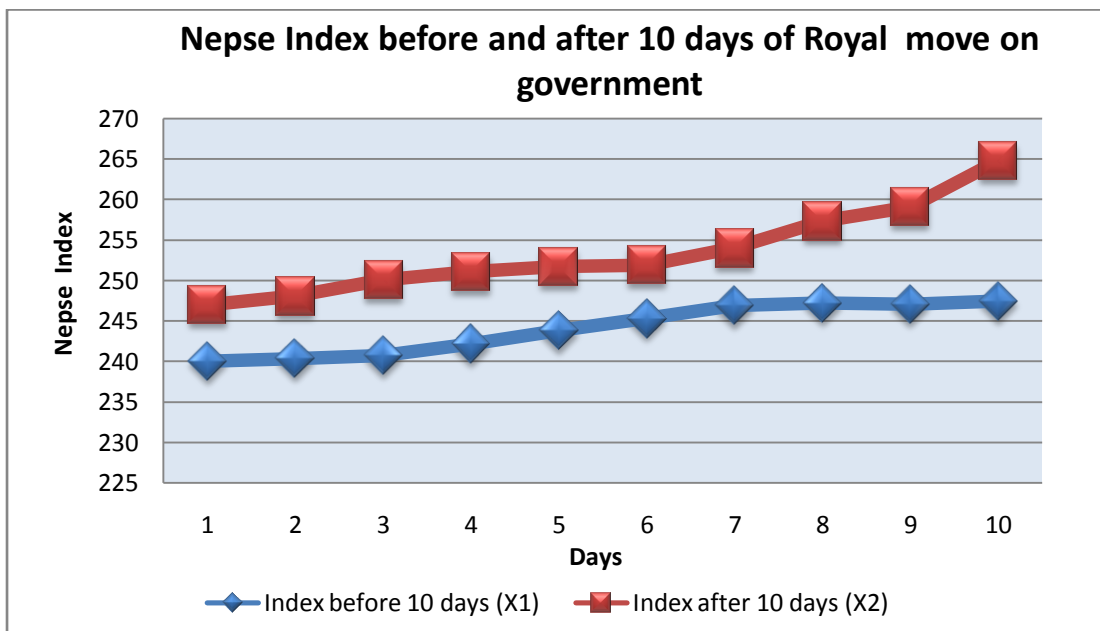
**(v) Area of Critical Reason**

Table value of t at 5% level of significant (10-1) = 9 degree of freedom in two tailed test is. 2.262

**(vi) Decision**

Calculated value  $|t| >$  Tabulated  $|t|$ , Therefore  $H_0$  is rejected and  $H_1$  is accepted which means there is significant difference between the NEPSE index before and after the Royal move on government or the successive price change of stock is dependent on coincident.

**Fig. no. 4.23**



The above fig. no.4.23 shows that the NEPSE index was in decreasing trend before the event and it started to increase after the incident. Since calculated value of t is negative its shows the positive effect on NEPSE index from the incident. This means the Royal move on government had positive effect of the NEPSE index.

### **Hypothetical decision on the Nepal's Entry on WTO**

Mean Deviation  $\bar{d} = -3.488$

Standard deviation ( $S_d$ ) = 2.0554

(Detail calculations have been shown in the appendix no. 4.5)

#### **(i) Formulation of Hypothesis**

**(a) Null Hypothesis ( $H_0$ ):**  $\bar{d} = 0$ . I.e. there is no significant difference between the NEPSE index before and after Nepal's entry on WTO or successive price change of stock are independent on Nepal's entry on WTO.

**(b) Alternative Hypothesis ( $H_1$ ):**  $\bar{d} \neq 0$  i.e. there is significant difference between the NEPSE index before and after entry on WTO of Nepal successive price change of the stock are dependent on Nepal's entry on WTO.

**(ii) Level of significant:**  $\alpha = 5\%$

**(iii) Number of observation:**  $n = 10$  (n < 30)

Apply t-test.

**(iv) Test statistics: under  $H_0$**

$$t = \frac{\bar{d}}{S_d / \sqrt{n}} \sim t_{n-1}$$

$$\text{Where, } \bar{d} = \sum d/n$$

d = difference between sample pairs (X1- X2)

$$t = \frac{-3.4882}{2.0554\sqrt{10}}$$

$$t = -5.3664$$

$$|t| = 5.3664$$

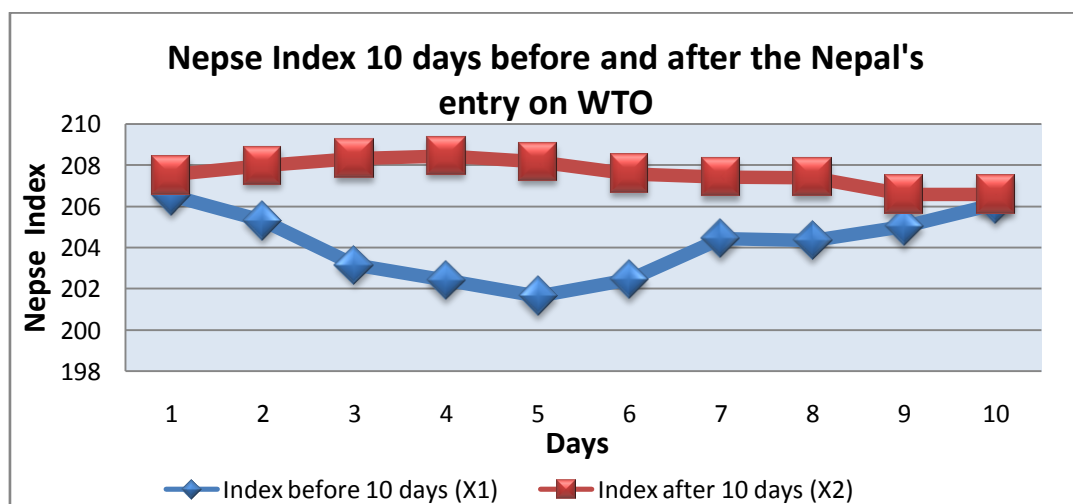
**(v) Area of Critical Reason**

Table value of t at 5% level of significant (10-1) = 9 degree of freedom in two tailed test is. 2.262

**(vi) Decision**

Calculated value  $|t| > \text{Tabulated } |t|$ , Therefore  $H_0$  is rejected and  $H_1$  is accepted which means there is significant difference between the NEPSE index before and after the entry on WTO or the successive price change of stock is dependent on coincident.

**Fig. no. 4.24**



The above fig no. 4.25 shows that the NEPSE index was in decreasing trend before the event and it started to increase after the incident. Since the calculated value of t is negative. It shows the positive effect on NEPSE from the incident, which means the entry on WTO of Nepal, has positive effect on the NEPSE index.

**Table no. 8**  
**Summary of Result from Hypothesis paired t-test**

S.N	Events	Tabulated Value	Calculated Value	Accepted/Rejected		Impacted on NEPSE
				H <sub>0</sub>	H <sub>1</sub>	
1	Entry of 22 parties on government	2.262	0.7314 (positive)	Accept	Reject	-ve impact
2	Entry of Maoist on government	2.262	0.4446 (Neg)	Accept	Reject	+ve impact
3	Jan Andolan-2	2.262	6.3366 (Neg)	Reject	Accept	+ve impact
4	Royal Moved on Government	2.262	9.2130 (Neg)	Reject	Accept	+ve impact
5	Nepal's Entry on WTO	2.262	5.3664 (Neg)	Reject	Accept	+ve impact

From the above table no. 8, it is clear that, the paired t-test tabulated value at 9 degree of freedom at 5% level of significance for two tailed test is 2.262. The calculated value (t) is more than the tabulated value except the first and event i.e. entry of 22 parties on Government and entry of Maoist on government. It means that the H<sub>0</sub> has accepted and the successive price changes of stock depend on the environmental incidence. From the above calculation, it has also been found that the calculated value of the event Entry of Maoist on government, Jan Andolan -2, Royal Moved on Government, and Nepal's Entry on WTO negative value and negative value of 't' indicates that positive impact on NEPSE index.



#### 4.9 Correlation Coefficient Analysis

Correlation coefficient analysis of NEPSE index 10 days before and after of some important sample events in between FY 2004/05 to FY 2008/09 has been done and their summary has been presented on the following table based on Appendix V (Appendices 5.1 to 5.5)

**Table no. 9**

#### Summary of Correlation Analysis

S.N.	Events	Correlation Coefficient (r)	Probable Error (PE)	Significance
1.	Entry of 22 parties on government	0.8085577	0.0738502	$r > 6PE$ Significant
2.	Entry of Maoist on government	0.149214	0.2085	Insignificant
3.	Jan Andolan-2	-0.5746	0.14287	Insignificant
4.	Royal Move on Government	0.59137	0.1387	$PE < r < 6PE$
5.	Nepal's Entry on WTO	-0.6340	0.2175	Insignificant

From the above table we can clearly see that the correlation coefficient of NEPSE index 10 days before the entry of 22 parties on Government with 10 after is 0.8085577 i.e. highly positively correlation. And the correlation coefficient of NEPSE index 10 days before the entry of Maoist on Government with 10 days after is 0.149214 i.e. positive correlation. In case of NEPSE index 10 days before and after the Jan Andolan-2 is -0.5746 i.e. negative correlations. Similarly, in case of Royal move to Government, it is 0.59137 and has positive correlation. Again, in case of Nepal's Entry on WTO, it is -.6340 and has negative correlation. Also the correlation coefficient of 1<sup>st</sup> is significant and 2<sup>nd</sup>, 3<sup>rd</sup> and 5<sup>th</sup> event is insignificant as the value of r is less than PE. But about the 4<sup>th</sup> case it cannot conclude because  $PE < r < 6PE$ .

#### **4.10 Regression Equation Analysis**

In this thesis, the writer has analyzed the regression equation of market capitalization on paid up capital of listed companies during the FY 2004/05 to FY 2008/09. The detail calculation regarding the concerned regression equation has been shown in the appendix 5.6. It is found that the regression coefficient (b) is 9.66 (positive). This indicates that one rupee increase in paid of capital of listed companies increased by Rs. 9.66 on an average of market capitalization of listed companies. In other word, a rise is paid of capital of listed companies leads to a rise in market capitalization value.

#### **4.11 Major Findings of the Study**

On the basis of the above analysis and presentation the findings and result of the study are presented as follows:

1. Nepal Stock Exchange was established on 1993 under the Securities Exchange Act, 1983. NEPSE commence its operation on 13<sup>th</sup> January 1994 with ownership among Nepal Government, NRB NIDC and its licensed member.
2. The annual turnover of the NEPSE is in increasing order during the study period. The annual turnovers of the FY 2004/05, 2005/06, 2006/07, 2007/08 and 2008/09 are Rs.4507.7 million, Rs.3451.43 million, Rs 8360.07 million, Rs 22820.8 million and RS. 21681.14 million Respectively.
3. The paid up capital of NEPSE during the study period (ie. From FY 2004/05 to 2008/09 are in increasing trend). It has the value of Rs.16771.85 in FY 2004/05, Rs.20008.55 in 2005/06, Rs.21798.8 in 2006/07, Rs. 29465 in FY 2007/08 and Rs. 61140 in FY 2008/09.

4. The number of listed companies is in increasing trend. The number of the companies in the initial year was 125 in 2004/05 and 135 in 2005/06 and the same number 135 in 2006/07, 142 in 2007/08 and 159 in 2008/09.

Out of these 159 companies in 2008/09, 21 are commercial bank, 29 are development banks, 61 are finance companies, 17 are insurance companies, Hotels-4, manufacturing and processing company-18, Trading company-4 and Hydropower plus other companies are also 5.

5. The value of market capitalization from 2004/05 to 2008/09 is in increasing trend. Initially its value was Rs 61365.9 million in 2004/05 and then Rs.96813.7 million, Rs. 186301.3 million, Rs. 366247.5 and RS 512939.07 million in the fiscal years 2005/06, 2006/07, 2007/08 and 2008/09 respectively. However the proportion of market capitalization of commercial bank is the highest among eight sectors. Its proportion is 65.38%, 70.96% and 72.78%, 59.59 and 58.92 in 2004/05, 2005/06, 2006/0, 2007/08 and 20068/09 respectively. Commercial bank commands a Lion's share in the NEPSE trading floor.
6. NEPSE index in general is in increasing trend during the study period. NEPSE index has reached the peak level i.e. 1084.76 in August 2008 and its lowest level i.e. 231.31 was in October 2004.

In the sector wise comparison, the NEPSE index of others sector has reached to top level index in the FY 2006/07 with the points of 1666.05 in our study period. In the fiscal FY 2004/05, 2006/07 and 2008/09 others sector goes to top level with the points of 347.65, 1666.05 and 876.66 respectively. Commercial bank reached to top

level with the points of 437.49 in FY 2005/06. Development bank reached to top level with the point of 1346.36 in FY 2007/08.

7. Unilever Limited share price has reached to highest level among the sample companies in the study period with the share price of Rs 1925,2500,3400,4100 and Rs 4200 in FY 2004/05, 2005/06, 2006/07, 2007/08 and 2008/09 respectively.

UNL, BBCL, HBL and BPCL have good performance in market and its share have high demand than the other sample companies. TRHL has very weak position than other sample companies.

8. The price index changes depend on environmental change, favorable environment effect on NEPSE index positively and unfavorable environment effect on the NEPSE negatively.

According to hypothesis test if the calculated value of 't' is negative the price index will be positively affected. In this research in all five sample event in all five sample event i.e. Entry of 22 parties on Government, entry of Maoist on Government, Jan Andolan-2, Royal move on government and Nepal's entry to WTO have positive impact on NEPSE.

9. The correlation coefficient between 10 days before and 10 days after the events i.e. entry of 22 parties on Government, entry of Maoist in government, Jan-Andolan-2, Royal move on Government, and Nepal's entry on WTO are 0.8085577, 0.149214, -0.5746, 0.59137, and -0.6340 and are significant except the event of Royal move on Government which is not correctly concluded.
10. The regression coefficient of market capitalization on paid of capital listed capital is 9.66 which mean one rupee increase in paid of capital increase by Rs. 9.66 on the market capitalization.

## **CHAPTER-V**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

This chapter presents the summary and conclusions drawn from the analysis of the study. The study was conducted to find out the behaviour of NEPSE Index. Similarly the study also tries to find out the stock market behaviour and the impact on NEPSE from the environmental incidents. For this purpose, 10 sample companies were selected from the FY 2004/05 to 2008/09. Various statistical tools as well as trend diagram were adopted as test methodology. Finally in the chapter, the writer presents the summary conclusion and recommendations for the future study.

#### **5.1 Summary**

Financial market mainly refers to the money market may be defined as short –term financial asset market, which facilitates liquidity and marketability of the security, as the capital market is concerned with the long-term finance.

In the capital market demand comes from agriculture, industry, trade and government, while supply comes from the individuals and surplus of the government saving institutions.

Security market is the place where the share of listed companies are traded or transferred from one hand to another at a fair price through the organization brokerage system. There are two types of security market where the security is traded. One is the primary market and the other is the secondary market. Primary market is the market in which securities are sold at the time of their initial issuance and secondary market is the market in which securities are traded that has been issued at some previous point of time. Security markets in the developed countries have

a long history but they do not have long history in Nepal. The Government of Nepal passed a law relating to the company registration and regulating in 1936 A. D. After the enactment of this law, Biratnagar Jute Mill Ltd was established in 1976 to trade the securities. Nepal stock exchange was established in 1993 under the securities Exchange Act 1983. GN under a programme initiated to reform the capital markets converted SEC in to NEPSE in 1993, which commenced its operation on 13<sup>th</sup> January 1994. And also SEBO was established in 1993 under the security Exchange Act 1983. There are 159 listed companies by the end of 2008/09. The Board has renewed the License or certificate of 23 stockbroker, 2 security dealers and 16 issue managers during the period.

NEPSE has experienced many rise and fall in stock market since its establishment. The basic Law of demand and supply determines the price of the securities.

The basic objective of the study is to analyze the behaviour of NEPSE index. Apart from this stock market behavior, equity share price behaviour and environmental incidence are also analyzed on the NEPSE of the listed companies.

The second chapters present the theoretical and research review. In the theoretical review, the concept of financial market, capital market and securities analysis have been presented. In the research reviews the review of study on capital market done so far has been represented. There are three approaches, efficient market analysis technical analysis and fundamental analysis for the security analysis. In an efficient market, a set of information is fully and immediately reflected in the market price. There are three types of market efficiency depending upon the type of information set impounded in to the price. They are weak form efficiency, semi-strong form efficiency and strong form efficiency these

three types of efficiencies are not indifferences to each other but they are serially higher order in degree on market efficiency.

Fundamental approach forecast stock price on the basis of earnings and dividends of the company where as technical analysis forecasts stock prices on the basis of past price behaviour of the company. The study focuses on the technical approach to analyze the behaviour of NEPSE index. This approach emphasizes on the past information of the prices and trading volume of stock to predict the future stock prices. Technicians believe that a future stock price depends on its supply and demand in the market place. In general, technical analysis records the historical financial data on charts, in search of pattern that they find meaningful and Endeavour to use the patterns to predict the future prices.

Research methodology deals with the method of analysis. This chapter presents the research design of the study. This study is mainly based on the secondary data of the past five years that covers the FY 2004/05 to 2008/09. Out of 159 listed companies only 10 companies have been selected as a sample for this study. Basically data used in this study are secondary and the major sources of data are NEPSE and SEBON. For the analysis of data percentage method, bar & line graphs have been used. The number of listed companies are 125, 135, 135, 142 and 159 in FY2004/05, 2005/06, 2006/07, 2007/08 and 2008/09 respectively There are eight groups (during the study period) in the NEPSE i.e. commercial bank, development bank, finance company, hotels, manufacturing and processing company, insurance company, trading company and other.

NEPSE Index has been taken as measuring tools whether the performance of stock market is good or not. This clearly focuses on the price of stock that is in increasing or decreasing trend. The higher index suggests the increase in market price stock and it implies the better performance of the companies and vice- versa. NEPSE Index of the share price has computed

by using standard and the Poor's index method with the base period of 30<sup>th</sup> Magh 2050 (12<sup>th</sup> Feb, 1994) and the base period value for the index was initially set at 100. During the study period NEPSE Index has started to move up 241.51 in August 2004, reached to lowest point of 231.31 in October 2004 and has reached to highest point of 1084.76 in August 2008. In the sector wise comparison others sector companies have reached to the top level index in the year 2004/05, 2006/07 and 2008/09 with the index of 347.65, 1666.05 and 876.66 point. Commercial bank reached to top level in year 2005/06 with the index of 437.49 point and development bank reached to top level in fiscal year 2007/0 with the index of 1346.36 point. Others sector remain the top level as a whole in our study period. The NEPSE Index in general, is in increasing trend during the study period except year 2008/09.

The annual turnover of the NEPSE is in increasing trend. It has the value of 4507.7, 3451.43, 8360.07, 22820.8 and 21681.14 in the million terms during the study period. It indicates that the performance of the total market is in good position paid up value indicates the actual amount of the investment in Assets. For the analysis of the behaviour of paid up capital of the listed companies five years total paid up capital value have been taken. The paid up capital of listed companies have increased year by year. It has the value of 16771.85, 20008.55, 21798.8, 29465 and 61140 in the million terms during the study period. The market capitalization has increased year after year. It has the value of 61635.89, 96813.74, 186301, 366247.5 and 512939.07 in terms of Rs million during the study period, which shows that the market capitalization is in increasing trend. These facts reflect that the performance of the economy is in improving way. Among the eight sectors, commercial bank has the highest proportion during the whole five years period of study, which implies that commercial bank sector has a lion's share in the NEPSE. And among the sample companies taken, UNL, BBCL, HBL, and BPCL, HBL and BPCL



have good performance in market and its share have high demand than the other sample companies. TRHL has very weak position than other sample companies.

To find the impact of the environmental incident on stock price, five incidents i.e. Entry of 22 parties on government on 15 June, 2009, entry of Maoist on government on 1<sup>st</sup> April 2007, success of Jan-Andolan-2 on 24<sup>th</sup> April 2006, royal move on government on 1<sup>st</sup> Feb 2005 and Nepal's entry on WTO at 11<sup>th</sup> Sept. 2004 are taken as sample. From the above study it is clear that the paired t-test tabulated value at 9 d. f at 5% level of significance for two tailed test is 2.262. In case of 22 party's entry on government, Maoist's entry on government  $H_0$  is accepted and there is no significant difference between NEPSE index before and after the event i.e. the price changes of the stock are independent on the incident. Whereas in other four cases  $H_1$  is accepted and there is significant difference between the NEPSE index before and after the events i.e. the price changes of the stock are dependent on the incidents. However, in all the cases, the negative value of 't' indicates that the positive impact of incidents on NEPSE index. The investors should consider these types of events.

The correlation coefficient between 10 days before and 10 days after the events i.e. entry of 22 parties on government, entry of Maoist in government, Jan-Andolan-2, Royal move on Government, and Nepal's entry on WTO are 0.149214, -0.5746, 0.59137, -0.6340 and -0.64087 and are significant except the event of Royal move on Government which is not correctly concluded.

The regression coefficient of market capitalization on paid of capital listed capital is 9.66 which means one rupee increase in paid of capital increase by Rs. 9.66 on the market capitalization.

## 5.2 Conclusion

The following conclusions have been derived with the help of findings of this study.

NEPSE Index has reached to highest level of 1084.76 points in August 2008, which has started to move from the points 241.51 and has reached to 231.31 (lowest) in October 2004 of the study period. In between this period, though there has been some fluctuation in the NEPSE Index, it has increasing trend mean the indicator of economic efficiency has increasing trend but in FY 2008/09 it shows the decreasing trends. However it shows the improving position of national economy than the past. In the comparison of sector wise NEPSE Index others, manufacturing and processing sector, and commercial bank sector have dominated the others in NEPSE Index.

The share price of most of the sample companies has been in increasing trend during the study period. Especially the share prices of these companies have been increased in the FY 2005/06 and 2006/07. Among the sample companies UNL, BBCL have dominated all other sample companies through the value of shares. Some of the companies like UNL, BBCL have good performance in the market than the other sample companies. In another side, at the same value of NICL is in decreasing trend and TRHL has the weakest performance in the market among the sample companies.

The annual turnover of the NEPSE is in increasing trend which indicates that the performance of the total market position is good. The paid of capital of listed companies has been in an increasing trend during the study period. This implies that the number of the listed companies has increased year by year and it has reached 159 at the end of study year. The values of total market capitalization have been moving in increasing trend, which also shows the improving position of national economy.

Commercial bank has the highest proportion of market capitalization among the eight sectors of NEPSE and hotels and Trading companies have very less contribution in the market capitalization.

Hypothesis has been tested by using t-test NEPSE Index has affected by the entry of 22 parties on government and it has not affected by the event of entry of the Maoist on government. However in other cases i.e. Jan Andolan-2, Royal move on government, and Nepal's entry on WTO and have positive impact on the NEPSE Index, which means the value of NEPSE Index has increased after these incidents.

Correlation coefficient analysis and regression equation analysis has been applied. With the help of correlation coefficient it is concluded that the NEPSE index with the events of entry 22 parties on Government is significant and the entry of Maoist on Government, Jan-Andolan-2, and Nepal's entry on WTO are insignificant whereas it is not concluded with the events of Royal move on Government. Similarly, regression equation explains that for a increment of market capitalization by Rs. 9.66, there must be increment of one rupee in the paid of capital by Rs. 9.66 of listed companies.

### **5.3 Recommendations**

The findings of the studies may be an important for those who concern directly or indirectly with the NEPSE. Thus the followings recommendations can be out lined.

1. The performance of commercial bank and other sector especially hydropower are better than the other sectors. So it is recommended to the investors to invest their investment in these sectors. However, the fluctuating trend of the share price is not predictable by general investors. So investors are recommended to get the

consultancy service from the investment experts while making the investment.

2. NEPSE should give more attention and should take action for the reason of being backwards of the other sector than the commercial bank & other sector. For this it should have to conduct research, seminar and training and make the awareness about how to increase the company's market price and how to show their performance in listing of NEPSE by updating their reports periodically informing actual financial position of the company.
3. Signaling factors should be analyzed on a regular basis through the concerned authorities so that the future movement of the price can be predicted from the side of analysis and investors.
4. The future researchers are recommended to apply the statistical tools like serial correlation run test filter rules etc. on such kind of subject matter.