

# CHAPTER – I

## INTRODUCTION

### 1.1 Background of the study

Financial market is a place where the financial instruments are traded. Financial instrument includes share, bond, debentures etc. It is a mean to transfer fund from savers to those in need of funds. Financial experts have mentioned it as a brain of entire economy system. The failure of the financial market as a brain obstructs the progress of whole economy. Share or stock market is a major component of the securities market. Stock market is a medium through which corporate sector mobilizes funds to finance productive projects by issuing shares in the market. The efficient collection of small amounts of savings and transferring funds into the competitive and efficient uses requires a well functioning capital market to facilitate the process.

The capital market plays an important role in mobilizing savings and channeling them into productive investment for the development of commerce and industry of the country. It assists in capital formation and economic growth of the country. The history of capital market in Nepal is very new. The concept of capital market was developed by the establishment of Security Exchange Center on 2033 B.S. which was later on renamed by Nepal Stock Exchange (NEPSE) Limited. The number of listed companies and their trading was very negligible until the government of Nepal has made economic reforms along with broad financial policy in 2049 B.S. As the government opened broad financial policy in the process of economic liberalization, the privatizations of public enterprises had initiated. Various financial and insurance companies in private sector were started with local and foreign investment. In spite of the recent economic reforms by the country, the capital market of Nepal is still small, emerging and disorganized.

Up-liftment of nation's economic growth and solving the problem of underdeveloped economy depends upon the nature of its economic infrastructure. One of the basic

elements in achieving a self-reliant growth of the economy for sustaining the desired level of economic development is an accelerated rate of investment or capital upon the efficiency of the financial system. A developed financial system is a hallmark of any free enterprises. The market instrument and institutions that comprise the system facilitate the efficient production of goods and services and there by contributing the society's well being. The financial systems or markets perform this function by channeling the nation's saving into best uses. This can be done by bringing together those who have surplus funds to lend and those who wish to borrow the funds to finance their expenditures.

The non-security of Nepal came under regulatory framework when Nepal Rastra Bank, the central bank of Nepal was established in 1956. Prior to this, Nepal Bank Ltd. was the only financial institution operating under Nepal Bank Limited Act 1973. Another commercial bank, Rastriya Banijya Bank was established under Rastriya Banijya Bank Act 1966 in the public sector.

A single Commercial Bank Act was enacted in 1974 to consolidate the functioning of all the commercial banks under one legal umbrella. Also the Finance Companies Act and Development Bank Act came in 1985 and 1996 respectively. At present, the country has 26 commercial banks including joint venture banks, 63 developments banks and 77 finance companies operating in the financial market according to Mirmire-2006, NRB. In addition to the above, there are 15 Micro credit Development Banks and 16 Saving and Co-operatives doing limited banking operations. Besides, there are 45 NGOs licensed by NRB and other non-depositary institutions like Employees Provident Fund and Citizen Investment Trust collecting huge amount of fund from the public in different forms and nature, providing long term funds to the people for various purposes.

In the absence of developed securities market in Nepal, the government was the sole issuing authority of Developments Bonds and National Saving Certificates. Therefore the securities generally founded in the market were mainly the Government Securities. Accordingly, Nepal Rastra Bank has been managing the issue of short-

term treasury bills to time. Nepal Rastra Bank makes arrangement for the issue, register, purchase and sale, transfer of ownership and redemption of government bonds and debentures. Therefore, Government securities are fully traded under the management and supervision of Nepal Rastra Bank.

Altogether 36 public enterprises were established through subscription of shares under the Companies Act during 1960-1975. The Government had dominant control as to the capital investment and management in most of those companies. Many companies were later on either liquidated or sold to private parties. Some of the prominent companies are still in operation under public sector while a few of them are in the process of privatization. Most of the companies are incorporated either under the full ownership of the government or under joint investment with the private sector. The role of private sector except in the operation of few small scale industries was almost nil during that period.

Institutional development of securities market in Nepal started from the year 1976 when securities exchange centre (SEC) was established under the companies Act with the joint capital contribution on Nepal Rastra Bank and Nepal Industrial Development Corporation. The industrial policy of the government also encouraged the promotion of securities exchange activities in Nepal. The main objective of the establishment of the centre was to mobilize public savings and encourage the people to participate in the ownership of industries and business enterprises. As a securities market intermediary, its role was to organize and provide marketing facilities of channeling securities exchange business through the center. Its activities included the purchase, underwrite and sale, directly or through the licensed brokers or sub-brokers of the center, the shares, stocks and debentures of public limited companies and also development bond as well as Treasury bills issued by the government.

## **1.2 Financial market in Nepal**

The history of the financial market in Nepal is not so old and it is in the growth stage. However, the pace of development of said market is not completely satisfactory

compared to the development and emergence of various financial and non-financial institutions.

The financial market in Nepal is not basically different from the financial market in general. Hence, it has been explained very briefly here.

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

The system of collecting deposit and granting loans in the organized sector had started with the establishment of Nepal Bank Ltd. in 1994 B.S. The mobilization of funds by selling securities to the general public had however started with the establishment of Biratnagar Jute Mill in 1993 B.S. The organized transaction of securities started in an organized way with the establishment of Security Marketing Centre (Present Nepal Stock Exchange) in 2033 B.S.

There are many changes taking place in the financial system of Nepal due to financial liberalization. The business activities are increasing rapidly. The situation of Monopoly has come to an end and age of competition has emerged in Nepalese financial system. Many banks and financial institution have been established to cater the credit need of individuals and business firms.

### **1.2.1 Classification of Financial Markets**

There are mainly two type of financial market. First one is money market and second one is capital market. Short-term funds of firm are raised from money market and

long and middle term funds of firms are raised from secondary market. This can be explained below:

**1.2.1.1 Money Market:** Money market is also known as short term financial market. The financial market in which funds are borrowed for short-period is money market.

**Figure 1: Classification of Nepalese Money Market**

Generally money market trades Commercial papers, Certificates of deposit, Short-term bonds and Government Treasury bill. Nepalese money market can be divided as the organized and un-organized sector. Under the organized sector Commercial banks, Co-operative Ltd., Agriculture bank and Central bank are working and under the Un-organized sector, creditors, local merchants, landlords, friends and relatives are working.

**1.2.1.2 Capital Market:** Capital market is also known as long-term financial market. Long-term funds of firms are collected from the capital market. Hence, capital market is a long-term credit market. The meaning of capital market can be made clear from its definition.

“The capital market is designed to finance long-term investments; financial instruments traded in the capital market have original maturities of more than one year.”

Capital is the life blood of any organization without it imagine is veil to conduct the business activities. Capital structure is the combination or composition of the long-term debt, preferred stock and common stock. An optimum capital structure decreases the cost of capital and increase the earning per share. A conscious financial analyst ever uses the low capital gearing, first. Business finance is that business activities which is concerned with acquisition and conversion of capital funds in meeting the financial needs and overall objective of business enterprise, from company's point of views.

Investors are the real owner of the company, they purchase shares and establish the company to get the dividend and capital gain, but who protect their investment and right? Yes, Securities Board of Nepal (SEBO) protects and promotes the interest of investors by regulating the securities market. For this purpose, SEBO was established on 26th may, 1993 under the provision of the Securities Exchange Act, 1893 (first amendment). Besides the regulatory role, it is also responsible for the development of securities market in country.

“Nepal Stock Exchange limited (NEPSE) is the only one license holder mediator of securities board of Nepal (SEBO). All the broker companies (who has received the certificate of stock trading and become the member of NEPSE) trade in the trading floor of NEPSE. This is the secondary market of stock which is the only market for liquidating capital market instruments like share and debentures. In this respect, capital market plays a crucial role in mobilization a constant flow of saving and changing these financial resources for expanding productive capacity in the countries. Stock market is a major component of the securities market. Stock market is a medium through which corporate sector mobilizes funds to finance productive projects by issuing shares in the market. Similarly, stock market provides the best investment opportunity to the investors. “Further, many profitable projects require a

long-term venture capital to finance. Most investor tempts to provide risk and is reluctant to tie their saving 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 projects because they can sell securities quickly and easily, if they want to get back their saving before the project matures. At the same time, companies receive easy access to capital through new issuance of shares.

The organized stock is recent phenomenon in Nepal. The history and securities market began with the floatation of shares by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. In 1937A.D. Introduction of the company act in 1951, the first issue of government bond in 1964 and the establishment of securities exchanges center in 1976 were other significant developments relating to capital markets. Securities exchange center was established in 1976 with the objective of facilitating and promoting the growth of capital markets. Before conversion into a stock exchange it was the only capital market institution undertaking the job of brokering, underwriting, managing public issues, market making for government bonds and other financial services.

His Majesty's Government under a program initiated to reform capital market converted securities exchange center into Nepal Stock Exchange in 1993. Nepal Stock Exchange, in short NEPSE, is a non-profit organization, operating under securities exchange Act, 1983.

The basic objective on NEPSE is to impart free marketability and liquidity of the government bonds and corporate securities by facilitating transactions in its trading floor through market intermediaries, such as brokers, market makers etc.

In board sense, Capital market can be classified into two markets. First one is securities market and second one is non-securities market. Under the securities market shares, debentures and bonds are traded by the government and reputed organization where as under the non-securities market financial institutions period the long-term loan to the industries and business. Under the securities market these are mainly six

types of markets. They are Stock market, Bond market, Business securities market, Government securities market, Primary market and secondary market.

The market where securities are traded is known as capital market. The capital market is broadly categorized into two markets. They are primary capital market and secondary capital market.

**(i) Primary Capital Market:** The new securities are issued by the company to trade in the capital market. Here the securities of large business firms are issued for the first time are bought and sold. The issuer of such securities may directly sell through private placement without underwriting to the investors. Besides, the securities may be sold after being made underwriting by the institution like investment bankers. The issuer (Company) collects amount and invest in the productive sector to earn the profit.

**(ii) Secondary Capital Market:** Secondary market provides the liquidity and marketability opportunity to the stock market. Stocks are traded second time in the agreement of buyer and seller in the stock market. Stock market may be either OTC marketer registered. Usually, those buying the securities for the first time went to see the securities within a short period. Secondary market can be subdivided into two parts:

**OTC Market:** Full form of the OTC Market is 'Over-the Counter Market'. The market where the securities of the companies not listed in the stock exchange or delisted from there are traded is called 'Over-The-Counter Market'. Intermediates and authorized dealers head such kinds of securities transaction. This market is also known as the proceeds from sale of securities in the secondary markets don't go to the organizational issuer instead to the initial owners of the securities different factors in secondary market.

**Registered Stock Market:** This type of market is registered in the government agency. There is only one registered stock exchange i.e. Nepal Stock Exchange (NEPSE) in Nepalese securities market. It trades the securities of listed companies firms for the general public. Here, transactions of only listed companies are made.



## **Figure 2: Classification of Nepalese Capital Market**

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

#### **Introduction of SEBO**

Securities Board, Nepal (SEBO) was established on 26 May, 1993 under the provision of the Securities Exchange Act, 1983 which was the first amendment. It was established with the objective of promoting and protecting the interest of investors by regulating the securities market. Besides the regulatory role, it is also responsible for the development of securities market in the country. So, SEBO has identified the policy development, legal and regulatory reform, standardizing disclosures, bringing enforcement to ensure compliance and promoting broad based market as a priority area to reform.

As a part of its continuous effort to build a sound system to the securities exchange, the private sector has also equally participated. In private sectors, Investors, Listed Companies, Financial & Market intermediaries and similarly in government sectors; Ministry of Finance, Registrar of the companies (Ministry of Industry, Commerce and

Supply), Nepal Rastra Bank, Nepal Stock Exchange Ltd., Federation of Nepalese Chambers of Commerce and Industries (FNCCI), Institute of Chartered Accounts of Nepal (ICAN) and Association of Chartered Accounts of Nepal have vital support in promoting the capital market in the country.

*The objectives of the SEBO are as follows:*

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

### **Introduction of NEPSE**

The history of securities market began with the flotation of shares by Biratnagar, Jute Mills Ltd. and Nepal Bank Ltd. in 1937. Introduction of the Company Act in 1946, the first issue of Government Bond in 1964 and the establishment of Securities Exchange Centre Ltd. in 1976 were other significant developments resulting to capital markets.

Securities Exchange Centre was established with an objective of facilitating and promoting the growth of capital markets. Before conversion into stock exchange it was only the capital market institution undertaking the job brokering, underwriting, managing public issue, market making for government bonds and other financial services.

His Majesty's Government, under a program initiated to reform capital market, converted Securities Exchange Center into Nepal Stock Exchange in 1993.

Nepal Stock Exchange Center, in short NEPSE, is a non-profit organization operating under Securities Exchange Act. 1983.

The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transaction in its trading floor through market intermediaries, such as broker, market and makers etc.

NEPSE opened its trading floor on 13<sup>th</sup> January 1994 through licensed members.

His Majesty's Government, Nepal Rastra Bank, Nepal Industrial Development Corporation and Licensed Members are the shareholders of the NEPSE.

### **Board of directors of NEPSE**

The board of directors of NEPSE consists 9 (Nine) members but the SEBON (Nepal Securities Board) has not nominated their representative since its establishment. Therefore it constitutes 7 directors. The chairman is from the Ministry of Finance. 2 directors are from Nepal Rastra Bank (i.e. Central Bank), one from NIDC and 2 elected from members. The General Manager is the ex-officio director of the Board.

**Table 1: Board of directors of NEPSE**

<b>S. No.</b>	<b>Name of Organization</b>	<b>No. of Director</b>	<b>Designation</b>
1.	Ministry of Finance	1	Chairman
2.	Securities Board	2	Director
3.	Nepal Rastra Bank	2	Director
4.	Nepal Industrial Dev. Corporation	1	Director
5.	Licensed Members	2	Director
6.	General Manger of NEPSE	1	Director

*(Source: - NEPSE index annual report 2005/2006)*

### **Trading System of NEPSE**

NEPSE operates on the 'NEPSE Automated Trading System '(NATS), a fully screen based automated trading system, which adopts the principle of an order driven market.

The best buy order is matched with the best sell order. An order may match partially with another order producing multiple trades. For order matching the best buy order is the one with the highest price and the best sell order is the one with the lowest price. This is because the system views all buy orders available from the point of view of the sellers and all sell orders from the point of view of the buyers in the market. So, of all buy orders available in the market at any point of time, a seller would obviously like to sell at the highest possible buy price that is offered. Hence, the best buy order is the order with the highest price and the best sell order is the order with the lowest price.

### **Trading Days and Hours of NEPSE**

NEPSE has fixed the trading days and hours during which the members are allowed to enter the floor to make the transactions.

**Table 2: Trading days & hours of NEPSE**

<b>Types of Trading</b>	<b>Days</b>	<b>Trading Time</b>
Regular Trading	Sunday to Thursday	12:00 AM to 3:00 PM
Odd lot Trading	Friday	12:00 AM to 1:00 PM

(Source: [www.nepalsharemarket.com](http://www.nepalsharemarket.com))

### **Listing fee of NEPSE**

The listing fee and the annual fee to be paid by the listed company are based on the capital of the company. The capital range and respective fees for listing and annual charges are as follows;

**Table 3: Listing Fee of NEPSE**

The rates currently applicable are as follows		
Paid up capital	Fee	
	Listing (Rs.)	Annual (Rs.)
Up to Rs. 10 millions	0.20% or minimum Rs. 15000	Rs. 15,000

Above Rs. 10 millions to Rs. 50 millions	0.15% or minimum Rs. 45,000	Rs. 25,000
Above Rs. 50 millions to Rs. 100 millions	0.10% or minimum Rs. 75,000	Rs. 35,000
Above Rs. 100 millions	0.075% or minimum Rs. 1,00,000	Rs. 50,000

(Source: - *Dhitopatra Suchikaran Samandhi Janakari Pustika*)

### **Other important factors of NEPSE**

**BOARD LOT:** NEPSE has fixed the board lot of 10 shares if the value is Rs. 100 or 100 shares if the face value is Rs. 10. In the case of debenture the trading lot is 1 being the paid up value of Rs. 1000. The transactions on regular trading should be on at least lot. The transactions of less than 10 shares are admitted by on odd lot trading hours. There is no odd lot transaction in case of debenture.

**Circuit Breakers:** NEPSE has implemented index-based circuit breakers with effect from 2064/6/4 (21 September 2007). In addition to the circuit breakers, price range is also applicable on individual securities.

**Index-based Circuit Breakers:** The index-based circuit breaker system applies at 3 stages of the NEPSE index movement of 3%, 4% and 5%. These circuit breakers when triggered bring about a trading halt in all equity.

- In case of 3% movement either way, there would be a market halt for 15 minutes if the movement takes place during first hour of trading i.e. 13:00 hours. In case this movement takes after 13:00 hours there will be no trading halt at this level and market shall continue trading.
- In case of 4% movement either way, there would be a market halt for half an hour if the movement takes place before 14:00 hours. In case this movement takes after 14:00 hours there will be no trading halt at this level and market shall continue trading.

- In case of 5% movement in either way, trading shall be halted for the remainder of the day.

**Price Range:** Price Range is applicable on individual securities. The trading of the individual securities are not halted but allowed to trade within the price range.

- The price band is 10% of previous close on either way.

\* During the ATO session the range is 5% on either way of Previous Close Price. After the band is 2% on either way of the Last traded price till it reaches to 10% of the previous close.

**Trading Location:** The trading can be done either from NEPSE's trading floor or from the broker's office. NEPSE uses sophisticated technology through brokers can trade remotely from their office located inside the Kathmandu valley. This remote trading facility was started from 1 November 2007.

**Settlement:** NEPSE has adopted a T+3 settlement system. Settlement will be carried out on the basis of paper verses payment. The trading is done at "T" and at T+1; the buying brokers have to submit bank vouchers for settlement with covering letter. At T+2, the selling brokers must submit share certificate with covering letter. At T+3, NEPSE prepares billing for payment and this will be forwarded to the bank. Once the settlement is done the buying brokers with the consultation of the clients must decide and present the purchased shares if they want to record it as blank transfer. This must be completed within T+5.

**Blank Transfer:** Under this mechanism an opportunities to derive the market benefit is provided. But presently, the buying brokers must complete the BT process within T+5. The transactions that are executed can be recorded in different way and NEPSE has considered all possible retention. The followings are the major key points to be considered.

1. This is related only with buy of the securities.
2. The buyer may decide to have market benefit either to have capital gains or to minimize the loss.

3. In order to do this s/he may partly send for name transfer or may register it in blank transfer.
4. If s/he register total purchase in blank transfer and can put for sale and if only the part of the shares are subscribed then s/he can handover the part and the part can be forwarded for name transfer to the concerned company. In order to do this s/he has to cancel the blank transfer for that portion.

**BROKERAGE:** The rate of brokerage on equity transactions ranges from 0.7% to 1% depending on the traded amount, that for Government bond is 0.05% to 0.20% and for all other stocks is 0.40% to 0.75%.

## **Market Index Calculation**

Market index is a single figure obtained from averaging the prices of selected securities, which reflects the overall investment performance of a particular market for financial assets for a particular point of time. Therefore, an index is developed to give a quick answer to the question: What is the market doing? And what is the market performance as compared to that of yesterday? Market indexes have always been of great importance in the world of securities analysis and portfolio management. Index can be constructed in various ways. There are three weighting methods of construction of market index, which are most often used.

1. Price weight.
2. Value weight.
3. Equal weight.

**1. Price weight:** A market index in which, the contribution of a security to the value of the index is a function of the securities current market price. It is calculated by summing the price of stocks that are included in the index, and dividing this sum by a constant (the divisor).

$$I_t = \frac{\sum_{i=1}^n P_{i,t}}{d}$$

$$i=1$$

Where,

- $I_t$  = index
- $n$  = no. of stocks
- $P_{i,t}$  = Price of  $i^{\text{th}}$  stocks
- $d$  = divisor

**2. Value Weight:** It is a market index in which the contribution of a security to the value of the index is a function of the securities market capitalization. It is calculated by multiplying the price of the stocks in the index and their respective number of share outstanding and then dividing the corresponding figure for the day the index was started (i.e. base period). The resulting number is multiplied by any base that may be 10, 100, 1000 etc.

$$I_t = \frac{\sum_{i=1}^n P_{i,t} N_{i,t}}{\sum_{i=1}^n P_{i,b} N_{i,b}} \times I_b$$

Where,

- $I$  = Index
- $P_{it}$  = Price of  $i^{\text{th}}$  stock at time  $t$
- $N_{it}$  = No. of shares outstanding for  $i^{\text{th}}$  stock at the time  $t$
- $P_{ib}$  = Price of  $j^{\text{th}}$  stocks in the base period
- $N_{ib}$  = No. of shares outstanding of  $j^{\text{th}}$  stock in the base period.
- $I_b$  = Index on Base Period

NEPSE has adopted value weighted index method till the date; 13<sup>th</sup> Feb 1994 is the base period for construction on the index NEPSE multiples index by 100 as base where as India and USA multiplies the same figure by 1000 and 10 respectively.



**3. Equal weight:** -The third method of constructing market index is equal weighted. This is computed daily by multiplying the level of the index on the previous day to the arithmetic mean of the daily price relative (today's price divided by yesterday price) of the different individual stocks which are included in the construction of index.

## **1.4 Focus of the study**

Market price of the stock moves daily in the securities markets. The vision and mission of this study is to analyse the different causes leading to move the price of securities ups and downs.

What factors affects the market price of stock? Finding the solutions of this problem, case study of the securities market is essential, cause of price change may be signaling effect, return from the stock, risk involved in it, lack of knowledge, income of the investors, book close for different purposes, overall political and government stability, decisions of market makers and regulators, credit availability for investment, cost of credit, size of capital market and investors, demand and supply of stock in the market, decision making capacity of the investors and pricing method of the stock.

There is a close relationship between the price to volume of the stock, i.e. high price, low volume and low price high volume. Similarly, Price of stock is determined by the demand and supply, do this situation exist in the security market or not? What is the impact of price trend, volume of the stock traded and what is the listing rate of companies in Nepal Stock Exchange? Do the investors see the price trend? Do the investors see the volume of trend and other views while making investment decision? There are the burning issues regarding stock price determination of secondary market in Nepal. Hence, the centralization of this study is to seek and analyse the different aspects due to which stock price volatility is caused.

## **1.5 Statement of problem**

The stock market is part and parcel of corporate development. Corporate business is a business organization established under company act consisting of billions of rupees of smaller stockholders and holders of debt certificates of the small denomination.

Due to some limitation of sole trading and partnership like, unlimited liabilities, uncertain future, difficult to transfer ownership, people thought that corporate firm collects its capital by issuing shares and debt certificates. The two types of shares are preference share capital and equity share capital.

The magnitude of preference share is very small in corporate firm. An equity or ordinary share comprises the largest category of securities in corporate firm of Nepal listed with the stock exchange. So this study will analyze the price determination of common stock of secondary market in Nepal.

Corporate firms must have common equity to register. Common stock represents the ultimate ownership of firm in regard to the claim on assets and income. Common stocks are firstly marketed by the capital raising companies through primary capital market and later on these stocks are negotiable in secondary capital market. Capital market provides investors good investment opportunity with fair return and instant liquidity with minimum risk of loss it helps to mobilize financial resources for the investment in development project and thereby helps economic development of the country. The stock market also imparts liquidity to the securities holder. This offers an opportunity for investors to invest in long term venture, while market also enables to convert their securities into liquid cash before the maturity of the project. Furthermore they can invest their current income against their future income thereby achieve their time preference of consumption. The liquid market also promotes the primary issuances of share because investors participated in the issuance of share markets can get back the fund easily. The primary market is positively and highly elastic with the stock price and liquidity in the secondary markets.

Usually the price of common stock in primary market is par value but in secondary market may be any price i.e. more than par value, less than par value and equal to par value. Stock price in secondary market is the main issue of this study. What could be

the reasonable price paid for a stock in secondary market? What is the impact of the price trend, volume of stock traded and, Do the investors see the price trend, volume of stock traded and, others views while making investment decision? These are the burning issues regarding stock price determination of secondary market in Nepal. Capital market provides investors good investment opportunities with fair return and instant liquidity with minimum risk of loss. The stock market also imports liquidity to the security holders.

The study is directed towards answering the following questions:

1. What could be the reasonable price paid for the stock in the secondary market?
2. What is the impact of price trend, volume of stock traded?
3. Do the investors is aware of it while making investment decision.
4. What are the major factors leading to change the price of stock and how they perform?

These are the burning issues regarding Stock price determination of Secondary market in Nepal.

***Research Questions:***

The research is mainly based on the behavior aspect of stock market in Nepal. It includes the secondary market and analyzes the dependence and independence of stock price movement in relation to stock market trend. Therefore, to shed light on the problems and to skin up the findings, this study mainly deals and concerned with the following questions:

- (i) What is the present state and status of NEPSE index regarding to the stock market?
- (ii) What are the causative elements that the stock price influences or affects?
- (iii) Whether the price changes are the random phenomenon or not?
- (iv) What is the condition of market price and market capitalization in relation to banking?

- (v) What are the realized rate, expected rate and coefficient of variation commercial banks occupied against of the stock market?
- (vi) Are the stock price changes highly correlated with its past price movements or not?

## **1.6 Objectives of the study**

The objectives of the study are as follows:

1. To analyze major elements resulting the change in stock price and their relationship with it.
2. To examine group wise overall behavior of NEPSE index.
3. To analyze and examine the signaling factor's impact on stock price with the help of NEPSE index.
4. To assess the randomness of share price.

## **1.7 Significance of the study**

This study will be important for the following groups and individuals.

1. The research is very useful for future researchers.
2. The research is very useful for university students who are new generation.
3. The research is very useful for financial manager and analysis.
4. The research is very useful for Govt. of Nepal.
5. The research is very useful for NGO's and INGO's.
6. The research is very useful for all other interested individuals and parties.
7. The research is very useful for Researcher.
8. It is equally important for investors and the listed companies to drag attention towards the forces and factors causing market changes.

## **1.8 Limitations of the study**

1. Time and budget limitations.

2. The study is limited only in the stock market of Nepal.
3. Research is based on the data of NEPSE office file, website and some of its publications only.
4. Stock price trend is seen only with the help of NEPSE index of particular time period.
5. The reality of the study fully depends on secondary sources of data and questionnaires filled by respondents.
6. This report covers the stock market behavior of listed companies in NEPSE only.

## **1.9 Organization of the study**

Chapter 1	Introduction
Chapter 2	Review of Literature
Chapter 3	Research Methodology
Chapter 4	Data collection and Presentation
Chapter 5	Summary, Conclusion and Recommendation

**Chapter 1:** The first chapter deals with the Introduction. This includes Background, Statement of problem, objective of the study, hypothesis of the study, limitation of the study and organization of the study.

**Chapter 2:** The second chapter deals with the review of available literature. It includes review of books, reports, journals previous thesis etc.

**Chapter 3:** The third chapter explains the research methodology used in the study, which includes research design, source of data, population and samples, methods of data analysis etc.

**Chapter 4:** The fourth, which is the important chapter of the study, will include presentation and analysis of data.

**Chapter 5:** The fifth chapter summarizes the main conclusion of the study.

## **CHAPTER - II**

### **REVIEW OF LITERATURE**

Review of literature comprises a vital part in the thesis writing. The study has been done effectively by studying the various old thesis, dissertation, newspaper, magazine and suggestion from the experts of the related field. For studying the “Movement of stock price in NEPSE securities market” various available books in investment, capital structure and other financial areas gave some idea about the study. So, in the context of writing this section of Report many books, articles, old thesis paper, dissertation and suggestions of experts has been done to make this concrete report.

#### **2.1 Conceptual Review**

The stock market is one of the forms of secondary market. It is a medium through which corporate sector mobilizes funds to financial productive projects by issuing shares in the market. Similarly, stock market provides the best investment opportunities to the investors. Thus, the effective collection of small amounts of savings and transferring funds into the competitive and efficient uses requires a well functioning capital market to facilitate the process. “In the absence of an efficient capital market, which attracts the funds the savers and channels them for the individual development, the savings which would otherwise have been available through capital markets are prone to remain dormant or leave the country or be deflected to less efficient uses.” (*Mahat: 1981:30-31*).

The stock market also imparts liquidity to the security holders. This offers an opportunity for investors to invest in the long-term ventures, while market also enables them to convert their securities into liquid cash before the maturity of the projects. Further, stock market liquidity may influence economic development. Many profitable projects require a long-term venture capital to finance. Most investors tend to avoid the risk and are often reluctant to tie their savings into the long-term commitments. Liquid stock market makes the investment less risky and more

attractive. It encourages savers to invest in the long-term projects because they can sell the security quickly and easily if they want to get back their investments before the project matures. While at the same time, companies receive easy access to capital through new issuance of shares.

Among the many review, experts are the clue parts itself because the study is focused and centralized over their views till its final step. The growth of stock market and its regulation is not so old in context of Nepal. The investment sector is flourishing in recent years as other economic sector. Today, most of the developed countries are boosting their economic activities by the help of their investment sectors. In the present context of the work any type of global activities undertaken in any part of the world has influenced most of the investment sectors. The incidents in one corner of the world bring the changes in whole world's stock market. As for example, due to the September 11 terror attack in USA and USA attacked upon Iraq most of the investment sector's indexes were affected. Similarly, in Nepal due to the political disequilibrium, there is always fluctuation in stock prices resulting to large volatility in overall market situation.

### **Common stock**

Common stock refers the ownership stock from company point of view. It is one of the important sources of capital of the company. Common stock is also known as equity share representing ownership interest in the organization. There are mainly two parties that trade the stock i.e.

- (i) Vendor or Company.
- (ii) Buyer or Stockholder.

Vendor Companies issues the equity share in the security market and purchasing companies purchase theirs' stock to be an owner of the company. These kinds of issue may be in lump sum basis or installment basis.

“There are shares which don't carry any special or preferential rights in the payment of annual dividend or repayment of capital. The rate of dividend on such shares is not

fixed. Dividend on equity shares is paid out of the residual profits left after paying interest on debentures and preference shares dividend. Similarly, equity shareholders are paid at the time of winding up to receive what is left after all the prior claims have satisfied. Therefore, equity shareholders are the real risk bearers. They also enjoy voting right in the management and control of the company". While issuing the equity share, company can achieve great advantages i.e.

**a) Permanent Capital:** Equity shareholders provide the permanent capital to the company. There is no any obligation to return the money except at the time of liquidation of the company.

**b) No Obligation for Dividend:** Equity shares do not impose an obligation to pay a fixed dividend but are payable only if the company has adequate profit.

**c) Sources of Prestige:** A company with substantial equity capital has a high credit standing. Creditors readily lend money to it because they regard equity capital as a safety shield.

**d) Small Denomination:** The face value of an equity share is generally quite low i.e. Rs. 100. The company can mobilize huge funds from investors belonging to different income groups.

**e) No Charge on Assets:** Company is not required to mortgage or pledge it's assets for issuing common stock. The assets remain free of charge for borrowing money in future.

"Common stockholders of a corporation are its residual owners, their claim to income and assets come after creditors and preferred stockholders have been paid in full. As a result, a stockholder's return on investment is less certain than the return to a lender or to a preferred stockholder. On the other hand, the return to a common stockholder is not bounded on the upside, as are returns to the others. A company should not issue stock at a price less than par value, because stockholders who bought stock for less than par value would be liable for the difference between below the par price they paid and the par value." (*Van Horne; 1997:85*)



Usually common stock is issued with a perpetual life. These stocks are subjected to issue and trading in primary market where it is generally issued with its face value and once the stock gets listed in the stock exchange the trading starts to take place and this particular market is called secondary market. Each share of stock is a fraction of the rights that belongs to the owners of a business. A stock certificate is evidence of that fractional ownership; it is tangible evidence, a certificate of title, to be a part of the company.

### **Value of the Common Stock**

There are mainly three kinds of value of the common stock:

- Face Value
- Book Value
- Market Value

**a) Face Value:** The face value of the mentioned in article of association and memorandum book of the company. The face value does not change until there is a stock split or other such initiative by the board of directors. The par value of new issue is Rs. 100, as directed by company act 1993.

**b) Book Value:** It represents the assets value per share after entire obligation of the corporation is met and is calculated by dividing the total shareholder equity on the B/S by number of equity shared outstanding.

**c) Market Value:** This value is based on the market demand and supply. Market value is determined by the demand and supply factors and reflects the negotiation between investor and seller for the transaction. The market value is influenced by many factors like economic and industry condition, expected earnings and dividends, speculations and other signaling effects like major events inside the country, Governments stability". (*Cheney & Mosses; 1995:417-418*).

### **Features of Common Stocks**

Study of the key features of common stocks would be the important to find out the causes of stock price movement. Common stockholders are the true owner of the business firm. Common stockholders are the residual owner in the same that they received what is left after all other claims on the firm's income have been satisfied. The main positive consideration involve in equity ownership are income and control. Common stockholder has the right of:

**a) Involvement in controlling the firm:** As they are real investors they can directly involve in controlling the firm to progress it. They must be invited in the annual general meeting of the company, and they are provided the voting right to choose the best management team i.e. board of directors, which in turn, elects the Management Committee. The stockholders also have other voting rights on issues, which have substantial effects on the corporations, on issues, which bring about change in their ownership percentage, any contract or financial arrangement.

**b) Preemptive Rights:** The Preemptive right provides the first option to purchase the additional number of share to the equity shareholder. Preemptive right allows stockholders to maintain their proportionate ownership in the firm when new issues are made. Preemptive right permit existing shareholder to maintain their voting control and protect against the dilution of their ownership and earnings. In the right, the stockholders are the first subjected to purchase of any new additional issues so that they do not lose their voting right control and there is protection in the value of the shares being diluted. These rights sustained by the use of rights offerings.

**(c) Other right of common stockholder:** The right of stockholder to common stock in a business firm is established by the law of the state in which the corporation is chartered and major rights of common stockholder are as follows:

**(i) Specific right of common stockholder**

- ) The right to sell and purchase the stock.
- ) The right to inspect the corporate documents.
- ) The right to vote in the manner prescribed by the corporate charter.
- ) The right to share residual assets of the corporation on dissolution.

**(ii) Collective right of Common Stockholders**

- J The right to adopt and amend bylaws of the company. The right to elect the directors of the corporation.
- J The right to authorize the sales of fixed assets.
- J The right to enter into merger.
- J The right to change the amount of authorized common stock.
- J The right to issue preferred stock, common stock, debenture and other securities.

**(d) Right to income and distribution of other shares:** As a matter of fact, shareholders have no right to receive income distribution from the corporation. As practice prevails, BOD declares cash dividends if enough financial resources are available. The dividends can be cash dividends, stock dividends, property dividends, etc. (*Cheney & Moses; 1995:411-415*)

“Do accounting numbers such as net income explain changes in a company’s stock prices? The answer is yes. Evidence from research shows definite link between the “new” conveyed in net income and the price changes in a company’s stock (returns). “Good news” net income is accompanied by positive price changes. Also, the more good or bad is net income, the greater is the accompanying stock prices reaction. Similar evidence exists for other summary financial statement numbers such as book value.

Research also shows that many factors influence the relation between accounting numbers and stock prices. These include company factors, such as risk, size, leverage, and variability, which decrease the influence of numbers like net income on prices, and factors, such as earnings growth and persistence, which increase their impact. Analysis must recognize those influences impacting the relevance of accounting numbers for security analysis.

Fundamental analysis research offers guidance in use of financial statement information for predicting future stock price changes. Evidence indicates financial statements help reveal the permanent and transitory portion of net income. Permanent portions are much more long-lasting in their impact on stock prices and are

commensurately of greater magnitude in their influencing on price. (*Bernstein, Wild; 1998: 18-19*)

### **Recent stock market development in global context**

“The newer stock markets, known as the third and fourth market have reshaped the organized exchange and the OTC market.

The market is part of the OTC market; it trades listed securities at discounted commission rates and thus competes with the organized exchanges for trades. The Traditional OTC market trades securities issued by local firms and municipalities and U.S. treasury securities. Some OTC deals trade these traditional OTC securities while also participating in the third market.

The fourth market is the communications network between block traders. The development of the third and fourth markets has strengthened stock markets in the USA and enabled investors to get better service.

In efficient markets, securities prices equal their values. When prices are unrelated to values and thus don't reflect relevant economic information, Investors resources are misallocated. A securities market should be efficient in two respects.

External efficiency requires that security price fully reflects all available information. Internal efficiency requires that all securities be immediately marketable at a reasonable cost. Third market firms and more recently discount brokers have done much to increase the internal efficiency of security market. These market makers compete with NYSE member brokerage firms in making market for listed securities by offering the same securities at the same market price but at lower commission rates. This economic competition and new computer technology have done much to move the US closer to having a national securities market that is geographically dispersed but centrally reported. (*J.C. Francis; 1983:100*)

### **Theories of stock price movement**

Simply, stock price movement refers the fluctuation of the stock price in the secondary capital market, i.e. market value is more than book value and market value

is less than book value due to the different internal and external causes. It is necessary to study the other external factors of foreign country. Due to the globalization, liberalization and modernization, the entire world has become within a boundary so effect of one areas' movement automatically lies upon others. Theory is code of conduct of explanation process is pushed further, from where a concrete theme can be derived.

In broad sense, there are three theories concerning stock price movement. The theories explain share price fluctuation in the stock market. Market efficiency is the premise for all of the theories. The theories are:

- a) Efficient market theories.
- b) Fundamental analysis theories.
- c) Technical analysis theories.

**a) Efficient Market Theories**

Efficient market theories refer the optimum price of the stock in the competition market. Stock price is neither over-valued nor under-valued in the market like monopoly market.

The term efficiency may be defined in various ways like allocate efficiency, operational efficiency and information's efficiency. When the finance literature speaks of market efficiency it is generally speaking exclusively about informational efficiency in pricing the stocks. A market is said to be informational efficient if the current market price instantaneously and fully reflects all relevant available information and adjust instantaneously every influx of new information. In an efficient market, only price changes that would occur are those, which result from new information. "An initial and very important premise of an efficient market is that there are large numbers of knowledgeable and profit maximizing independent buyers and sellers, new information is generated randomly and the investors adjust the information rapidly." (Reilly; 1986:166) Therefore, if market is efficient, it uses all available information to it in setting price. The measure of efficiency evolved from

the notion of perfect competition, which assumes free and instantly available information, rational investors with no taxes or transaction cost.

*The requirements for a securities market to be an efficient market are:*

- Prices must be efficient so that new inventions and better products will cause a firm's securities price to rise and cause investors to want to supply capital to the firm (i.e., buy its stock).
- Information must be discussed freely and quickly across the nation so all investors can react to new information.
- Transactions cost such as sales commissions on securities are ignored.
- Taxes are assumed to have no noticeable effect on investment policy.
- Every investor is allowed to borrow or lend at the same rate.
- Investors must be rational and able to recognize efficient assets so that they will want to invest money where it is needed most. (i.e., in the assets with relatively high returns). (*Bhalla; 1983:309*)

This constitutes the world of the efficient market theory or more popularly the capital assets pricing model.

As efficient market is concerned with the pricing mechanism of securities market, it has two dimensions of price adjustment. One is the type of information reacting to and another is the speed and quality of adjustment of security to the information. As any random infusion of information instantaneously and correctly adjusted in prices, there will be no subsequent dependencies or lags that are profitable. Pricing not only should be instantaneously, but also should discount accuracy of information so that the prices fluctuate closely around its intrinsic value. So, Keane rightly pointed-out, "it would be clearly an add interpretation of efficiency if a doubling in price of a share were regarded as an efficient reaction to new information, simply because the movement was instantaneously, if the information in fact warranted a substantial reduction in price". (*Kene; 1983:9*) Agreeing with this, Francis and Taylor noted, "Market efficiency refers to the ability of financial assets to quickly adjust and reflect all information that is relevant to value in its price." (*Francis; 1986:4*) Therefore, it

assumes, that any given time, the market correctly prices all securities. The result, or so the theory advocates, is that securities cannot be overpriced or under priced for a long enough period to profit there from.

**(i) Levels of market efficiency:** There are three levels of market efficiency depending upon types of information set impounded into the price. In other words, the forms of markets are determined on the basis of how publicly available information is reflected in the market price of shares. The statements that price reflect all available information represents the highest order of market efficiency. As Fama suggested, it is useful to distinguish three level of market efficiency.

○ **Weak-form efficiency:** If the pricing into the stock market has reflected all information found in the record of past prices and volume it is considered as weak form efficiency and participation of technical analysis approach in the market become futile.

○ **Semi-strong-form efficiency:** If current prices of stocks reflect not only all information found in the record of past prices and volume but also other publicly available information the market is semi strongly efficient. In that the market even fundamental analysis of published accounting information has no value, because participants would have discounted it accurately and instantaneously when they are disclosed.

○ **Strong-form efficiency:** The market where stock prices fully reflect all the available relevant information public as well as private, it is considered that the market held strong form of efficiency. In this market insider information cannot beat the market because no single participant has monopolistic access to that kind of information.

These three levels of efficiency described above are not indifferent to each other but they are serially higher order in degrees of market efficiency. If the market is semi-strongly efficient, it must be efficient in weak sense also because the past price data is one form of published information, which must have been impounded in the price. If the market is not efficient in a weak sense, the past price information could be

contained in past prices has not been reflected fully into the current prices. Similarly, for the market to be strongly efficient it must also be efficient at the semi-strong and weak levels, otherwise prices are not reflecting all relevant information.

**(ii) Theory of weakly efficient market or random walk hypothesis:** “The weak form of efficient market hypothesis stipulates that historical price and volume data for securities contain no information which can be used to earn a trading profit above what could be attained with a native buy-and-hold investment strategy” (*Francis; 1986:543*). “Sense if share prices fully reflect the information implied by all prior price movements. Price movements in effects are totally independent of previous movements, implying the absence of any price patterns with prophetic significance.” (*Keane; 1983:10*) The weak form of Efficient Market Hypothesis (EMH) is popularly known as the random walk theory. Random walk theory describes whether past price can predict future price. Fama argued, “random walk theory implies the future path of price level of a security is no more predictable than the path of series of cumulated random numbers. The series of price changes has no memory, that is, the past cannot be used to predict the future in any meaningful way,” (*Fama; 1965:34*) It means, that the current size and direction of price change are independent and unbiased outcome of previous price changes. Put it differently, prices appeared to follow a random walk, implying that successive price changes is independent of one another.

Random walk model says that previous price changes or changes in return are useless in predicting future price or return changes. It means if we attempt to predict future price in absolute term using only historical price change information, we will not be successful i.e., successive price changes are independent. This independence implies that prices at any time will on the average reflect the intrinsic value of the security. If a stock's price deviates from its intrinsic value because among other things, different investors evaluate the available information differently or have different insights into future prospects of firm, professional investors and astute non professional will seize upon the short-term of random deviations from the intrinsic value and through their active buying and selling of the stock in question will force the price back to its



equilibrium position. Finally, the efficient market theory holds that since price reflects all available information and since information arrives in a random fashion, there is little to be gained by any type of analysis whether fundamental or technical. It assumes that every piece of information has been collected and processed by thousands of investor and this information (both old and new) is correctly reflected in the price. Returns cannot be increased by studying historical data, either fundamental or technical, since data will have no effect on future prices.” (*Fischer and Jordan; 2000:553*)

Though the subject of market efficiency has been much concerned area of the study for the academicians and researchers in recent times, “the advocates of the efficient market theory are matched by an equally eloquent opposing camp which argues that the stock market is neither competitive nor efficient. The critics contend that one or more of the following factors cast their shadow over the efficiency and competitiveness of the stock market.” (*Chandra; 1994:589*)

- **Information inadequacy:** Information is neither freely available nor rapidly transmitted to all the participants in the stock market. In addition, there is a calculated attempt by many companies to circulate “misinformation”.
- **Limited information processing capabilities:** Human information processing capabilities are sharply limited. As Nobel Laureate Herbert Simon observed: “Every human organism lives in an environment which generates millions of new bits of information every second, but the bottleneck of perceptual apparatus certainly does not admit more than a thousand bits per second and possible much less.”
- **Irrational behaviors:** In theory, it is generally assumed that investor rationality will ensure a close correspondence between market prices and intrinsic value. In practice, this may not be true. As J.M. Keynes argued: In point of fact all sorts of consideration enter into the market valuations which are in no way relevant to the prospective yield. L.C. Gupta made a similar observation: “our findings suggest that the markets evaluation process work haphazardly almost like a blind man firing a gun. The market seems to function largely on a ‘hit –or – miss’ basis rather than on the

basis of informed beliefs about the long-term prospects of individual enterprises.”

*(Gupta; 1981:20)*

o **Monopolistic influence:** In theory, the market is regarded as highly competitive. No single buyer or seller is supposed to have undue influence over price. In practice, powerful institutions and big operators wield great influence over the market. The monopolistic power enjoyed by them diminishes the competitiveness of the market.

Finally, due to these challenges posed by the critics of efficient market theory, there are many factors to point the finger at its reality validity and authenticity. This appears to be truer like relatively less developed capital market of Nepal. Nepalese capital market is yet to be efficient in terms of information as well as operations.

#### **b) Fundamental Analysis Theory**

Generally Fundamental analysis theories refer the formula and principle. According to the technical analyst, fundamental analysis is idealist part of analysis. So it is not perfect and market principle of analysis of stock price movement.

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

“The value of common stock is simply the present value of all the future income which the owner of the share will receive.” *(Francis; 1986:398)* And the actual price should reflect intrinsic value of the stock i.e., good anticipation of cash flows and capitalization rate corresponding to future time period. But in practice, first, it is not known in advance what the appropriate discount rate should be for a particular stock. Therefore fundamentalists estimate their intrinsic value by studying in details all matters that are relevant to company. “The study would involve examining its sales earnings, profit margins, dividends, management proficiency, industrial and business

outlook, labour competence any factor that would have a bearing on its performance in the future”. (Raghu; 1991:167)

Fundamentalists forecast stock price on the basis of economic industry and company statistic. The principal decision variable ultimately takes form of earning and value with a risk-returns framework based upon earning power and the economic environment. “Fundamental analysts delve into companies’ earnings, their management, economic outlook, firm’s competitor’s market conditions and many other factors.” (Francis; 1986:398)

The objective of fundamental security analysis is to appraise the intrinsic value of a security. The intrinsic value is the true economic work of financial asset. “The fundamentalists maintain that any points of time every stock has an intrinsic value which should in principle be equal to the present value of the future stream of income from the stock discounted at an appropriate risk related rate of interest” (Bhalla; 1983:283). Therefore the actual price of security is considered to be a function of a set of anticipation. Price changes as anticipation changes which in turn change, as a result of new information. In other words, a new piece of news is released, securities’ intrinsic values will change, and the securities’ market prices will adjust towards the new values.

On the basis of such a study fundamentalists project a company ought future profits and earning capacity with reasonable accuracy what the price of a company’s share to be. This estimated price is termed as intrinsic value. The intrinsic value of the stock is generally away from its present market value. Thus there is difference or gap between them. Fundamentalist reaches and investment decision by comparing this value with current market value, it is believed that price will rise. In this situation, fundamentalists will acquire shares as this difference presents them with an opportunity to make a profit. Alternatively, if the intrinsic value is lower than the market value, the share is overpriced and is an indication to the fundamentalists to sell. Following this rule, they believe, above average return can be attained, and given that market is inefficient in pricing the shares.

Therefore “The fundamental analysts work to find new information before other investors so they can get into a position to profit from price changes they anticipate.”

*(Francis; 1986:603)*

“Fundamental analysis uses different models like Top-Down versus Bottom-up forecasting, probabilistic forecasting, econometric models, financial statement analysis etc. to estimate the value of security” *(Sharpe, Alexander and Bailey; 2001:850-853)*.

Therefore the fundamental analyst reaches an investment decision on the basis of these analytical tools.

Though fundamental analysis approach is used by many security analysts or prospective investors to make a judgment of the stock's value with a risk-return framework based upon earning power and the economic environment, it is hard and time consuming work. As stated by Raghu Palat, some of the limitations of fundamental analysis approach are as follows; *(Raghu; 1991:168)*

- The approach though sound and based on basic financial figures does suffer from drawbacks and to make this approach work effectively one must be aware of them.
- It tends to ignore market behavior and assumes that the market will act rationally. The market seldom does. Prices flare or drop on the flimsiest of reasons.
- The entire fundamental approach is based on a rational scientific analysis of data. The market is rarely rational.
- The information and analysis itself may be incorrect.
- Many companies, with the help of creative/innovative accounting and accounting cosmetics disguise real earnings.
- The fundamentalists' estimate of intrinsic value may be incorrect. This is not only possible but also more probable than not as he has to often forecast growth, profit and other factors without having in his grasp all the facts.
- The fundamentalists may not fully understand the economy or the industries, as there are several external factors.

- There is also the possibility always that the market may not move in the manner a fundamentalist expects and conversely towards the intrinsic value.
- It is also difficult to determine corporate action.

In short, the fundamental approach works exceedingly well in determining the intrinsic value of a company. It is not such an effective tool in determining future price movements and hence it is not very dependable for short-term profits. “By nature the fundamentalist is conservative in approach and is generally unwilling to take a quick loss he would rather adopt a buy and hold policy.” (*Yahasway; 1992:155*) Therefore fundamental analysis allows the analyst to forecast holding-period yield and riskiness of achieving that yield, but these figures alone do not necessarily prompt a buy or sell action.

### **c) Technical analysis**

Technical analysis is one of the important theory of price determination and interpretation of the stock. This is the modern and practical method to analyze the price fluctuation in the security market. Technical analysis is based on the widely accepted premise that securities price are determined by the supply and demand of securities.

Among many tools, technical analysis is one tool is designed to measure demand and supply. Typically, technical analysis record historical financial data on charts, study these charts in an effort to find meaningful pattern and use these patterns to predict future prices. Some charting techniques are used to predict the movements of single security. Some are used to predict the movements of a market index and some are used to predict both the action of individual securities and market action.

“The technician believes the forces of supply and demand are reflected in patterns of price and volume of trading. By examination of these patterns, he predicts whether prices are moving higher or lower, and even by how much.” (*Fischer and Jordan; 2000:510*) Therefore, the patterns or trend in prices is the basis of technical analysis.

Various charts are prepared to determine trends and to determine whether prices are likely to rise or fall. Technicians tend to look backward. “The technician usually attempts to predict short-term price movements and thus makes recommendations concerning the timing of purchases and sales of either specific stock or groups of stocks (such as industries) or stocks in general. It is sometimes said that fundamental analysis is designed to answer the question “what?” and technical analysis to answer the question “when?” (*Sharpe, Alexander and Bailey; 2001:844*)

Technical analysts discern past pattern or trends, which they believe to repeat in the future and recommend for the timely holding and disposing mechanism, which is profitable. Or that recommend for short-term speculation based on its forecast of profitable pattern.

Technical analysts use different kinds of tools and technique to determine and forecast the stock price on the basis of past data and information. This technique is based on the fundamental technique. Technical analysis is easier, faster, more result oriented and more market oriented philosophy than fundamental analysis. Some important technique of technical analysis is studied below:

- ) The Dow theory
- ) Charts
- ) Contrary opinion
- ) Confidence index
- ) Breadth of market
- ) Relative theories
- ) Moving average.

**(i) The Dow Theory:** It is one of the oldest and famous techniques which were founded by Charles Dow who was editor of ‘The wall street journal’. The Dow Theory is used to predict reversals and trends in the market as a whole or for individual securities. According to Dow, the market is always considered as having three movements, all going at the same time. The first is the narrow movement from

day to day; the second is the short swing, running from two weeks; the third is the main movement from at least four years.

**(ii) Charts:** Technical analysis uses three basic types of charts- line chart, bar chart and point & figure charts. Line charts are used to connect successive day's closing price. Bar charts are used to show the distance from the day's highest price to the day's lowest price. A small cross on the bar makes the closing price. Point and figure charts are made on X & Y are more complex than line and bar charts. PFCS are used not only to detect reversal in trends but also to make price forecasts, called price targets.

**(iii) Contrary opinion:** Contrary opinion refers the opposite thinking of others. It assumes that the so called man in the street is usually wrong and that it is therefore advantageous to pursue strategies opposite to his thinking two different theories of contrary opinion are:

) The odd-lot theory.

) Short sales.

**(iv) The confidence index:** "Confidence index is the ration of high-grade bond yields to low grade bond yields. When bond investors grow more confident about the economy, they shift their holdings from high grade to lower-grade bonds in order to obtain the high yields offered by the risk or bond". (*Francis; 1983:447*)

**(v) Breadth of market:** It is this kind of technique of finding the breadth of market that is used to measure the underlying strength of market advance or decline.

**(vi) Moving average:** "Moving average is used by technicians who focus on the moving average of price. The moving average is used to provide a smoothed, stable reference point against which daily fluctuations can be gauged. Moving average analysis is used to for individual securities and market indexes.

"Technical analysts maintain that the price of a share at any time (Present price) is the balance struck by buyers and sellers at a point in time price movements take place on account of changes in buying and selling pressures. This occurs in account of diverse

internal and external factors (profits, political environment, predictions and the likes). Prices stabilize when equilibrium between buyers and sellers is achieved. They believe that a record of price movements over a period of time in the past. As the whole theory is based on the assumptions that history repeats itself, the human nature does not change and that man is likely to repeat his patterns of past movements will repeat themselves in the future.” (*Raghu; 1991:172*)

The technical analysts estimate prices instead of values. They largely ignore the fundamental facts such as the firms’ risks and earnings growth rates in favor of concentration on various barometers of supply and demand that they have devised.

The premise here is that prices move in trends and that a trend is likely to continue than reverse. It is noteworthy to mention here the quotation of Veteran scientist and inventor, Benjamin Franklin that “Show me the man who does not believe in history and I will show you a fool.” Technical analysts believe in the history and that history repeats itself. Consequently all their predictions and charts are based on history. Past figure and trends are used to predict the future.

According to Edwards and Magee the basic assumptions underlying technical analysis are as under; (*Edward and Magee; 1958:86*)

- Market value is determined solely by interaction of supply and demand.
- Supply and demand are governed by many rational and irrational factors.
- In disregard of minor fluctuations in the stock market, share price tend to move in trends, which persist for an appreciable length of time.
- Changes in trend are caused by shifts in supply and demand.
- Shifts in supply and demand, no matters why they occur can be detected sooner or later in charts of market action.
- Some chart patterns tend to repeat themselves.

In essence, technical analysts believe that past patterns of market action will recur in the future and can therefore be used for predictive purposes.



**(i) Market prices of shares as the output of the demand and supply interaction.**

“Stocks and shares mostly traded in the securities market are one of the assets into which money can be invested. The investment further is more attractive to a majority of individuals because it is also liquid in character. But what is the most influencing factor in determining the price of the stock is interaction of demand and supply.”

*(Doodha; 1962: 10)* Ackerman opines that, “the price of a given stock is determined exclusively by the two forces demand and supply, converting one such stock at a given time that the prices and volumes of its past transaction are meaningful indication of profitable relationship of future supply and demand pressure, it is likely to encounter in the market that such relationship is the most important element determining the probable direction of price movement.” *(Acerman; 1980:10)*

These are the short conceptual framework about the theories of stock price behavior

“The share price is determined in the floor by the interaction of market forces i.e. demand and supply. The price is determined by the point of equilibrium between supply and demand, the shifting of this balance results in incessant adjusting of price in search of the ever-changing new equilibrium. Then market price moves upward and downward. There are many reasons that causes the stock price fluctuation, major of them are economic, non-economic and market factors. One basis for the determination of stock prices is dividends. Dividends are strongly influenced by the earning power of the enterprises. There is a very close correlation between corporate earnings and dividends. Earning power, in turns, is strongly influenced by interest rates. In this way, the most fundamental factor in stock price fluctuations lies in change in corporate earnings, which together with interest rates and business cycle trends, contribute to making up the economic factors influencing stock price. The next influencing factors are non-economic factors, including changes in political conditions, such as war or administrative changes, changes in the weather and other natural conditions, and changes in cultural conditions, such as technological advance and the like. Market factors, or internal factors of the market, consisting of the tone of the market and supply-demand relations, may be cited as the third category that

influences the stock prices. The tone of the market is a form of over-estimating the intrinsic value of stock when stock price is high because of business prosperity while underestimating its value at the time of market decline. The relationship of supply-demand are reflected directly in the volume of transactions, but there is also considerable effect from the actions of institutional investors, margin transactions, etc. although margin transactions increase purchases when stock price is going up, once the price begins to fall they become a selling factor and accelerate price decline. The practice of margin in finance has not been introduced, so far, in Nepal.” (Sharma; 1996:63-64)

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

## **2.2 Thesis review**

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

**Mukti Aryal (1999)** has conducted a research on “*The General Behavior of Stock Market Price*”. The prime objective of the study was to find the laws of price fluctuation in the stock market. However, the specific objectives of the study were as follows:

- ) To discuss theoretically the movements of stock market prices as predicated by the random walk model.
- ) To develop the empirical probability distribution of successive price changes of an individual common stock and a stock market as a whole.
- ) To examine whether the successive price change of stocks market are independent to each other or not.

*The major findings of the study were:*

In this study rejection of hypothesis makes clear that knowledge of past becomes useful in predicting the future movements of stock market prices on the floor of exchange for securities can make higher expected profits in the future based solely on those historical price series under certain systematic trading scheme. (i.e. Market average return) of the general market for securities. The economic reason for higher values of standard deviation implies that the inherent instability of market, change in economic environment. Finally, with respect to distribution of price changes, from the investor point of view, the sole interest is in the shape of distribution, that is the only information needs to make meaningful investment decisions.

**Khagendra Prasad Ojha (2000)** has 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 on the stock price.

*The main findings of his study were:*

- ) 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 in not encouraging.
- ) Corporate firm with long history have a relatively stable profitability parameters then 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.

**Bachhu Ram Dahal (2001)** has conducted the research "*Stock Market Behavior of Listed Joint Stock Companies in Nepal*". Main objective of his research were as follows:

- ) The main objective of his research was to study, examine and analyze the stock market behavior.
- ) To study and analyze the rate of listing of new companies and maintenance of listed companies in NEPSE
- ) To study and examine the signaling factor on stock price with the help of Nepal Stock Exchange index.

*Major findings of this study were as follows:*

The study concluded that signaling factor plays major role for fluctuating NEPSE index. The study was verified by taking major seven events, Royal palace Massacre; cease fire, September 11 attack, State of emergency, Prime Minister's visit to U.S.A., Parliament dissolve and King's visit to India.

**Darapana Pokhrel (2002)** has conducted the thesis "*A study of Securities Market in Nepal*". Main objective of her study were as follows:

- ) Their main purpose of this study is to examine and analyze the trend as well as the risk and return of different sectors listed in securities market. To achieve this purpose the following specific objectives have been set up.
- ) To find out and analyze the risk and return of different sector of securities market.
- ) To analyze the inter-relationship between the risk and return of each sector.
- ) To examine the trend of different sectors in terms of their total paid up value, annual turnover and capitalization and forecast their trend for future.

*The summarized from her study were as follows:*

According to her study “Among all sectors listed in the securities market, banking sector has the highest expected return (50-33%) followed by the finance sector with 47-36%. The sectors having the lowest expected return are the one categorized as others with just 10.3% and the trading sector with 10.65%.

**Prabhat Kumar Poudyal (2003)** has conducted the thesis “*Share Price Behavior of Joint Venture Banks in Nepal*”. Main objective of his thesis were as follows:

- ) To analyze the market share price behavior of the Nepalese Stock Market.
- ) To examine how safe or risky to invest on joint venture banks’ share.
- ) To analyze the sensitivity of the shares in relation to the market.
- ) To test whether or not the shares in banking companies are blue chips in out context. To test whether the Nepalese Stock Market is efficient or not.

*Major finding of the study of Ms. Poudyal were as follows:*

He had written “Nepal Stock Exchange operates in a weak form an efficient market hypothesis, indicating that the market prices move randomly. The investors while deciding their investment and purchases neglect actual potential of the firm and semi professional advices are functioning at its height. The market values per share don’t accommodate all the available historical information because of the in-equilibrium in the stock market is observed”.

**Harihar Paudel (2005)** has conducted the thesis on “**Stock price Behavior of Commercial Banks in NEPSE**” which examined monthly closing price of 6 listed commercial banks during the period of three consecutive years from 2002 to 2004 by means of Correlation Coefficient, Regression Analysis, Run Test and Autocorrelation. He found in his study that successive price changes were correlated with previous price series. He also found that most of the stocks did not follow random walk hypothesis. The present stock price was dependent to the historical prices. The EPS was the most affecting factor for the price change of the stock. Most of the investors wanted to invest in the shares of commercial banks because the fluctuation in NEPSE index was due to the transaction of commercial bank’s shares.

**Saroj Kamal Shrestha (2007)** carried out the thesis work on topic “**Share Price Behavior and its impact on investment decisions**”.

Major objectives of the study were as below:

- ) To analyze the share price behavior and assess the risk associated with return on common stock investment of listed commercial banks on the basis of selective financial tools.
- ) To assess the randomness of share price of commercial banks.
- ) To evaluate the return and risk proportion of investment on stock of commercial banks.
- ) To examine the relationship of share price with financial variables.
- ) To provide suggestion and recommendation to the concern authority for improvement.

Major findings carried out are as follows:

- ) The price sequence of MPS of each sample banks is not randomly moving that imply the movement of share price are dependent in the historical prices.
- ) There is always linear relationship between risk and return associated with the stocks of sample banks.

) MPS of all the sample banks have positive correlation with BVPS, EPS and DPS in most of the cases.

**Rebati Kumar Shrestha (2008), conducted thesis on "An Analysis on the factors of Volatility of Share Price in Nepalese Stock Market"**

Major objectives of the study were;

) To analysis of share price volatility factors with different listed companies in NEPSE.

a. To determine the effect of earning, dividend and net worth to the stock price.

b. To examine sensitivity relationship of MPS with various financial indicators like EPS, DPS and NWPS.

) To highlights about the various factors which is responsible for share price fluctuation in Nepalese Share Market.

) To draw the conclusions and provide suggestions.

Major findings of the study were:

) Major 5 causes of the factors of volatility of stock price in NEPSE are Nepal Rastra Bank's guidelines, earning, price trend, information & net worth.

) Nepal Rastra Bank has guided all the financial institutions to raise their capital double by the end of 2069 Asadh which affects greatly to the fluctuation of the share prices in Nepalese Share Market.

) Run Test reveals that all the changes in market price behaviors are random. There are no relationships between the market prices.

### **2.3 Review of Related Articles, Books and Websites**

Different articles published by Nepal Rastra Bank, NEPSE, SEBO and other institutions especially related to capital market have consulted in order to find out the causes of movement/fluctuation of stock price i.e. the NEPSE index. Moreover, this

different magazines and newspapers like arthiyak abhiyan, bazar, and so on are taken as the guidelines in tracing out the opinions of the investors, other specialists and institutional investors.

In addition to this the basic idea and structure is traced out from different books viz. Investments by Rabindra Bhattarai, Research Methodology, Corporate Dividend Practice in Nepal by Nabaraj Adhikari and so on as presented in bibliography. Similarly, basic information, data and other aspects of NEPSE and its operation is traced out from its website i.e. [www.nepalstock.com](http://www.nepalstock.com) and website of NRB and SEBO viz. [www.nrb.org.np](http://www.nrb.org.np), [www.sebonp.com.np](http://www.sebonp.com.np) and [www.nepalsharemarket.com](http://www.nepalsharemarket.com).

## **2.4 Research Gap**

Although some very valuable researches in the field of stock market have been done so far, there is still a great deal of opportunity remained for researchers in the field in this area to explore and identify new facts and figures about the immature stock market of Nepal. The above studies are performed by different researcher; their weakness is also mentioned there. This study will analyze the stock price determinants of common stock in secondary market of Nepal. Usually the price of common stock in primary market is par value but in secondary market it may be in any price. The price of common stock is largely influenced by different market related factors. Therefore, here the studies made upon the various related factors that are major are caused of fluctuation of stock price in secondary market.

Most of the studies on share price behavior conducted in the context of Nepal were based on secondary sources of information only. No study has been conducted on price fluctuation of stock price by using share brokers and individual investors as primary sources of information. There was a need to conduct a survey with the share brokers and individual investors who are the major stakeholders of the stock market, in order to find out more subjective facts on share price behavior, which cannot be testes through the use of the primary source of information.



The earlier studies were done only in theoretical manner regardless of what the real market is going through while this study is analyzing the real market scenario like the impact of capital gain in the market or the impact of global recession on the Nepalese Security market.

Nowadays, Nepalese share market has entered to the new horizon. Its size and market capitalization are growing day by day. New Bye laws are being established to control stock market price. But it is clearly realized that share prices are fluctuating abnormally. If earning, dividend and net worth are taken as the main determinants of price fluctuating, then why the share prices are increased without the increment in such factors. Therefore there is still lack of appropriate researches to find out the causes of volatility of share price in Nepalese share market.

Therefore, this study is analyzing the various reasons on the fluctuation of price trend and the cause and effect of different signaling factors over stock price. In addition to this, it also tends to give some measures that should be taken by related parties to develop the Stock Market. Thus, the earlier studies on share price behavior needed to be updated and validated because of the many changes taking place in the stock market in Nepal. This study is an effort to attempt in the same direction.

## **CHAPTER – III**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

In this chapter, efforts have been made to present and explain the specific research design in order to attain the research objectives. It includes construction of research design, nature of data, data gathering procedure, population and sample, data processing procedures and different tools and techniques used in course of this thesis preparation for analysis and interpretation of data.

#### **3.2 Research Design**

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combined relevance to the research purpose with economy in procedure the research design the conceptual structure within which research is conducted. As per the nature of study, secondary data as well as primary data sources such as survey method was followed with exploratory and analytical approach. The research design used in this study is both descriptive and analytical.

#### **3.3 Population and samples**

All the companies listed in the stock exchange were considered as the total population. Out of them, the companies that were in existence and doing share transactions in NEPSE were considered as the sample for the study.

The companies were categorized into eight groups which are done by the stock exchange.

A total of 165 companies were listed till year 2008/9, but numbers of transacting companies are varied from 102 to 137 from the year 2004/5 to 2008/9 (*Source: Annual Trading Report 2004/5) to 2008/9*). All the companies which are listed in the SEBO are not transacting regularly. Here, total listed companies in NEPSE are taken

as population and single company from a sector is regarded as sample representative of that sector (Six companies from eight sectors) as listed below;

<b>Sector</b>	<b>Company Selected as Sample</b>
Commercial Bank	Standard Chartered Bank Ltd. (SCB)
Dev. Bank	Ace Development Bank Ltd. (ACEDBL)
Finance	People's Finance Ltd. (PFCL)
Insurance	Himalayan General Insurance (HGI)
Hydro Power	Chilime Hydropower Ltd. (CHCL)
Others (rest 3)	Uniliver Nepal Ltd. (UNL)

### **3.4 Data gathering procedure**

This study is based on primary as well as secondary data. And data is collected from annual report published by Nepal Stock Exchange Limited. Similarly, for collecting primary data, scheduled of questionnaire are developed and distributed to the investors, brokers, NEPSE staffs and other related parties with stock market.

To get reliable information, discussions were also conducted with investors and other related parties with NEPSE.

#### **Basic Sources of Data**

This study is based on historical information provided by the company. The study is based on secondary data as well as primary data. Secondary data are used to analyses the factors, which affect the sensitivity of stock price, primary data are collected from the respondents through research questionnaire. The following secondary sources of information are used to extract the required information:

- ) Annual reports of the company
- ) Financial statements
- ) Books, Journals, Newspaper Bulletins
- ) Previous dissertation papers, studies

- ) Periodical publication from Central Bureau of Statistics
- ) Securities Board, Nepal
- ) Nepal Stock Exchange
- ) Nepal Rastra Bank
- ) Related Websites

### **3.5 Data Analysis/Processing procedure**

Data collection from secondary sources were analyzed by using Statistical tools like monthly trend analysis, bar diagram, multiple bar diagram, ratio analysis and paired t-test. Data collected from questionnaire were in raw form. They were classified and tabulated in the required form. Simple arithmetic percentage tools were used for analysis.

#### **Basic Tools Used:**

The primary and secondary data collected from various sources leads to the logical conclusion. According to the nature of data, they have been interested in meaningful tables, which have been shows in table. Homogeneous data have been sorted in one table and similarly various tables have been prepared in understandable manner, odd data excluded from the table. Using financial as well as statistical tools, the data have been analyzed and interpreted. Financial and statistical tools are the main tools to be used in the calculation of the data. Major tools used are;

#### **A) Statistical Tools**

##### **1. Correlation Coefficient**

It is a useful statistical tool for measuring the intensity of the magnitude of linear relationship between two variables. The most important method of measuring the correlation between the two variables is “Karl person’s coefficient of correlation.” If the values of the variables are directly proportional then the correlation is said to be positive. On the other hand, if the values of the variables are inversely proportional,

then the correlation is said to be positive. On the other hand, if the values of the variables are inversely proportional, the correlation is said to be negative, but the correlation coefficient always remains within the limit of +1 to -1. The correlation coefficients (r) between two variables X and Y can be obtained by using following formula;

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2} \sqrt{N \sum Y^2}}$$

Where,

r = The Correlation Coefficient between two variables X and Y

## 2. Coefficient of Determination

Coefficient of correlation between two variables series is a measure of linear relationship between them and indicates the amount of variation of one variable which is associated with or is accounted for by another variable. A more useful and readily comprehensible measure for this purpose is the coefficient of determination which gives the percentage variation in the dependent variable that is accounted for by the independent variable. In other words, the coefficient of determination gives the ratio of the explained variance to the total variance. The coefficient of determination is given by the square of the correlation coefficient i.e.,  $r^2$  (Gupta, 2002: 585). Its formula is;

Coefficient of Determination ( $r^2$ ) = Explained Variance/Total Variance

## 3. Test of Hypothesis

A hypothesis is defined by Webster as “a tentative theory or supposition provisionally adopted to explain certain facts and to guide in the investigation of others”. However, in statistics, hypothesis means a statistical statement about the values of one or more parameters of the population. After setting the hypothesis, it is necessary to test the reliability of such statistical statements. For this purpose, an experiment is conducted

by using sample information and the hypothesis is rejected if the results obtained are improbable under this hypothesis. If the results are not improbable, the hypothesis is accepted. The procedure of drawing such conclusion based on sample information is known as testing of hypothesis.

For the test of hypothesis, t- test has been used in this study with the help of simple correlation coefficient and the hypothesis is stated as following:

**Null Hypothesis (H<sub>0</sub>):** There is no significant relationship between the variables.

**Alternative Hypothesis (H<sub>1</sub>):** There is significant relationship between the variables.

#### 4. t - Statistics

t – Statistics is applied for the test of small sample, i.e. n is less than 30. The following formula is used to test an observed sample correlation co-efficient:

$$t = \frac{\bar{d}}{s/\sqrt{n}}$$

- Where,
- t= paired t-test
  - s= standard error
  - n= number of observations
  - d= different between two data

Where standard error(s) can be calculated by using following formula:

$$s = \sqrt{\frac{1}{n-1} \left( \sum d^2 - \frac{(\sum d)^2}{n} \right)}$$

This calculated value of t is then compared with its table value and if the calculated value is less than the table value, we accept the null hypothesis at the given level of significance and may infer that there is no relationship of statistical significance between the two variables. If the calculated value of t is greater than the table value, we accept the alternative hypothesis and may infer that there is significance relationship between the variables.

## **5. Probable Error (PE)**

The probable error is used to measure the reliability and test of significance of correlation coefficient. It is calculated by the following formula.

$$P.E. = 0.6745 (1-r^2)^{1/2} / n$$

Where,  $r$  = the value of correlation coefficient

$n$  = number of pairs of observations

P.E. is used in interpretation whether the calculated value of  $r$  is significant or not (if  $r < P.E.$ , it is insignificant i.e. no correlation, if  $r > 6P.E.$  it is significant & if  $P.E. < r < 6P.E.$  nothing can be concluded)

## **6. Trend Analysis:**

This is the simplest and the easiest method of studying trend. In this method, points are plotted taking time along x-axis and the value of the variable under study along y-axis on a graph. Join these points by a free hand curve. Now a trend line is fitted such that the number of points above the trend line is nearly equal to the number of points below it.

## **7. Run Test Analysis:**

It is one of the widely accepted techniques for a non-parametric test and has been developed to test the hypothesis that the sample taken is random or not. Due to this reason it is applied here to test the market price per share quoted in NEPSE of the companies is either random or not. To complete this test 24 market price (per month closing price for last two years) have been considered.

## **B) Financial Tools**

### **1. Market Price per Share**

One of the major data of this study consists of market price of stock. Records of maximum, minimum and closing prices are available for the purpose of this study. Since the calculation of real average price is constrained by lack of 82 adequate

information regarding volume and price of each transaction throughout the year, the closing price has been used as market price of stock.

$$\text{MPS} = \text{Total Market Capitalization} / \text{No. of Shares Outstanding}$$

## **2. Earnings per Share**

Earnings per share is the amount per share of the organization's total earnings.

$$\text{EPS} = \text{Total Earning of organization} / \text{No. of Shares Outstanding}$$

## **3. Net Worth Per Share (Book Value per Share)**

The NWPS represents the real net worth per share. It is simply the ratio of net worth (share capital plus retained earnings/ general reserve) divided by the number of shares outstanding.

$$\text{NWPS} = \text{Net Worth} / \text{No. of Shares}$$

## **4. Dividend per Share**

Both cash dividend and stock dividend and stock dividend (bonus share) declared by each company have taken into account for the purpose of this study. Total amount of dividend has been calculated as follows:

$$\text{Total Amount of Dividend} = \text{Cash Dividend} + \text{Stock Dividend}$$

$$\text{DPS} = \text{Total Dividend Paid} / \text{No. of Shares Outstanding}$$

## **3.6 Research variable**

For analyzing signaling factors impact on NEPSE index with signaling factors the following major events are analyzed:

- ) Janaaandolon (around the end of F.Y. 2005/6)
- ) Lead of Govt. by Maoists (around the start of F.Y. 2008/9)
- ) Capital Gain Tax Increment (around the mid of F.Y. 2008/9)
- ) Renounce of Govt. by Maoists (around the end of F.Y. 2008/9)



**Figure 3: Research methodology in single schematic diagram**

# **CHAPTER – IV**

## **DATA PRESENTATION AND ANALYSIS**

### **4.1 Introduction**

Data presentation and analysis is one of the important part of the research work. In this section the study tries to find out the proof from the mathematical calculation for the theoretical statement. The basic objective of this chapter is to analyze and elucidate the collected data following the conversion of understandable presentation. Thus, this chapter presents the analysis and interpretation of the data related to stocks prices, major factors leading their changes (e.g. EPS, DPS, and NWPS), NEPSE market index, volume of stock traded, etc. As stated earlier in the methodology section, this study consists of both primary as well as secondary data. Secondary data have been collected particularly from monthly and annual trading report of Nepal Stock Exchange, and published reports and websites of selected companies. Similarly, data collected from primary sources (interview and questionnaire method) have been analyzed under the heading of opinions survey that helps to gain information on investment behavior of investors. However primary data collection does not fully satisfy the need of work on this topic. As a consequence, the study has utterly relied on the secondary source of data. Data collected from the secondary sources are also tested with sophisticated statistical tools.

The main purpose of this chapter is to find the major causes of leading changes in stock prices and examine the price trend of selected companies as a sample of overall stock market with the help of different variables and NEPSE index. In the same way the study tries to check the impact of signaling effect on fluctuation of stock price with the help of different major events during the period of recent years. The study also wants to explore investor's attitude by taking primary data with field survey filled by different parties interested with stock market.

Price is the major element in the stock market analysis. For analyzing stock market behavior the price trend can be used. By seeing the NEPSE index trend one can conclude its nature in different aspects, e.g. trend of price in different periods.

Similarly, the number of stock traded is also accounted for seeing pattern of volume traded in stock market. Analysis has been classified into different categories to generalize the facts of the information collected as below;

#### **4.2 Analysis of Relation between MPS and Major Financial Indicators/Factors leading its change (EPS, DPS & NWPS) using secondary data:**

To examine and evaluate the relationship of EPS, DPS and NWPS to MPS, it is assumed that the market price of share is influenced with the changes in EPS, DPS, and NWPS and these factor are considered as major factors leading the change in MPS. So, MPS is the dependent variable; whereas EPS, DPS and NWPS are independent variables. Relationship of EPS, DPS and NWPS with MPS is analyzed separately to each of the sampled listed companies, their significance test and coefficient of determination. As we know the correlation coefficient helps to determine whether there exists any relationship among different variables, statistical test to test the significance of correlation coefficient and the coefficient of determination to explain the variation in dependent variable due to the variation in the independent variable. For the test of hypothesis of correlation coefficients calculated t-value are compared with the tabulated t-value at 95% level of significance.

Now, examining relationship among variables as mentioned above in context of individual companies considered as sample:

##### **4.2.1 Analysis in case of SCB**

Table 4.1 summarizes the MPS, EPS, DPS and NWPS with Mean, S.D. and C.V. of SCBN over five year's period. Table 4.2 shows the relationship (correlation) of EPS, DPS and NWPS to MPS along with the significance of such relationships.

**Table 4.1: Mean, Standard Deviation & CV of SCBN**

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)
2004/5	2345	143.14	120	422.38
2005/6	3775	175.84	140	468.22
2006/7	5900	167.37	130	512.12
2007/8	6830	131.92	130	401.52
2008/9	6010	109.99	100	327.53
<b>Mean</b>	4972	145.65	124	426.35
<b>S.D</b>	1656.79	23.87	13.56	62.46
<b>C.V.</b>	33.32	16.39	10.94	14.65

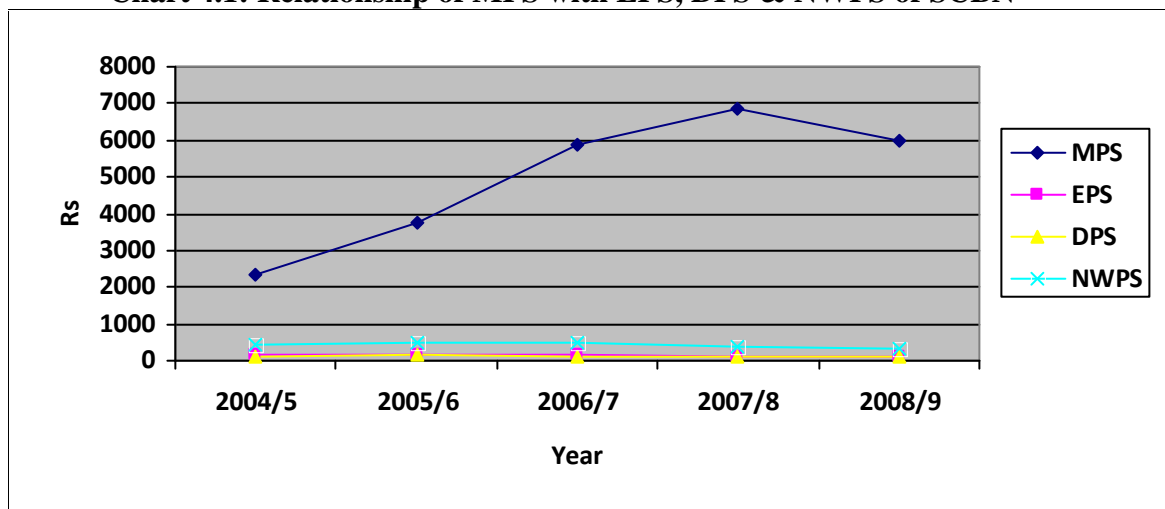
Source: Annual Report & Account of SCB 2008/9

**Table 4.2: Relationship of MPS with EPS, DPS and NWPS of SCBN**

Variable	r	r <sup>2</sup>	Probable Error	Test of Significance	Relation
r <sub>ab</sub>	-0.3636	0.1322	0.2618	insignificant	Low negative
r <sub>ac</sub>	-0.1499	0.0225	0.2949	Insignificant	Low negative
r <sub>ad</sub>	-0.2103	0.0442	0.2883	insignificant	Low negative

Annex: IV

**Chart 4.1: Relationship of MPS with EPS, DPS & NWPS of SCBN**



It can be clearly stated from the analysis done above in Table 4.1, 4.2 and Chart 4.1 that CV of MPS (33.32) is highly volatile in comparison to that of EPS (16.39), DPS (10.94) & NWPS (14.65), which reflects MPS is rapidly changing than other factors considered. In addition to this correlation coefficient between MPS and EPS, MPS and DPS & MPS and NWPS all are low negative. And the Probable Errors calculated above in all cases are greater than correlation coefficient(r). So, we can reach to the conclusion that calculated values of r are insignificant and there is no any significant relation between MPS and other variables (EPS, DPS & NWPS). It means the cause of volatility of MPS of SCB is not by the change in these variables but by rest other factors as shown by coefficient of determination ( $r^2$ ), which is very low in percent in all cases above (i.e. 13.22%, 2.25%, 4.42% for MPS and EPS, MPS and DPS & MPS and NWPS respectively). It indicates that 13.22%, 2.25% & 4.42% change in MPS has resulted due to the change in EPS, DPS and NWPS respectively and the rest is by other factors. Therefore, we can conclude that there is no any positive relation between these variable.

#### 4.2.2 Analysis in case of ACEDBL

Table 4.3 summarizes the MPS, EPS, DPS and NWPS with Mean, S.D. and C.V. of ACEDBL over five year's period. Table 4.4 shows the relationship (correlation) of EPS, DPS and NWPS to MPS along with the significance of such relationships.

**Table 4.3: Mean, Standard Deviation & CV of ACEDBL**

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)
2004/5	251	18.00	0.00	179
2005/6	320	27.94	42.11	201
2006/7	459	6.71	5.26	112
2007/8	856	12.96	10.53	122
2008/9	588	6.92	5.50	108
Mean	494.80	14.51	12.68	144.40

<b>S.D</b>	214.68	7.92	15.09	38.15
<b>C.V.</b>	43.39	54.58	118.99	26.42

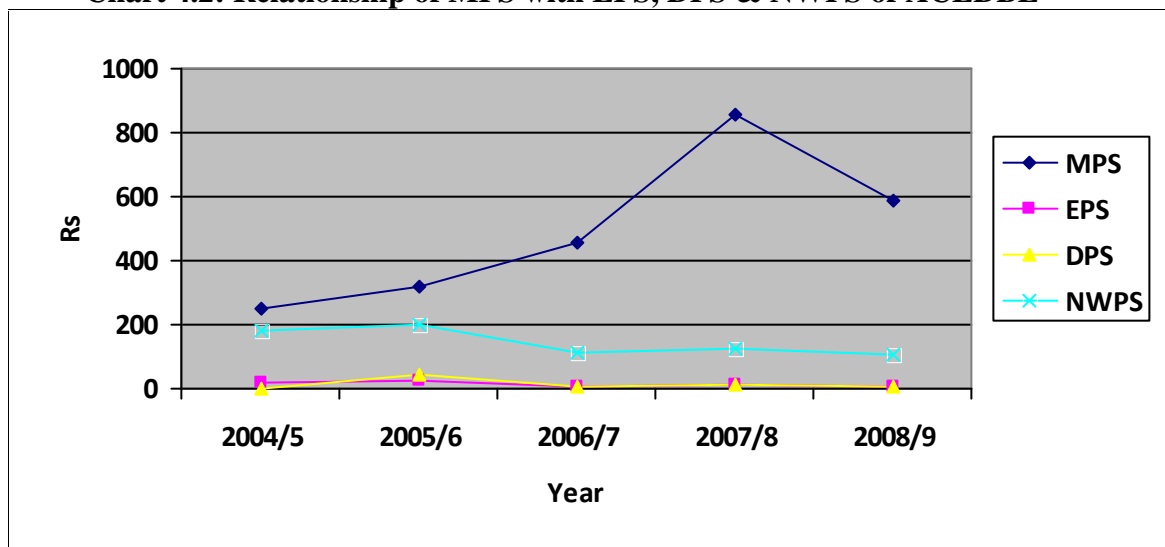
Source: [www.ace.com.np](http://www.ace.com.np) (14<sup>th</sup> annual report) (on 2010/02/16)

**Table 4.4: Relationship of MPS with EPS, DPS and NWPS of ACEDBL**

Variable	r	r <sup>2</sup>	Probable Error	Test of Significance	Remarks
r <sub>ab</sub>	-0.4926	0.2427	0.2284	insignificant	Negative
r <sub>ac</sub>	-0.1996	0.0399	0.2896	insignificant	Low Negative
r <sub>ad</sub>	-0.6997	0.4896	0.1540	insignificant	Negative

Annex: IV

**Chart 4.2: Relationship of MPS with EPS, DPS & NWPS of ACEDBL**



It can be clearly stated from the analysis made above in Table 4.3, 4.4 and Chart 4.2 that CV of MPS (33.32), EPS (54.58) and DPS (118.99) are highly volatile in comparison to that of NWPS (26.42). In addition to this correlation coefficient between MPS and EPS, MPS and DPS & MPS and NWPS all are negative. And the Probable Errors calculated above in all cases are greater than correlation

coefficient(r). So, we can reach to the conclusion that the calculated values of r are insignificant and there is no any significant relation between MPS and other variables (EPS, DPS & NWPS). It can be interpreted in the way that MPS and EPS & MPS and NWPS are negatively correlated as shown by correlation coefficient between these variables. It means the major cause of volatility of MPS of ACEDBL is NWPS, to some extent EPS and rest is by other factors as shown by coefficient of determination ( $r^2$ ), which is low in percent in two cases above (i.e. 24.27% & 3.99% for MPS and EPS & MPS and DPS respectively) and 48.96% for MPS and NWPS. It indicates that 24.27%, 3.99% & 48.96% change in MPS has resulted due to the change in EPS, DPS and NWPS respectively and the rest is by other factors. Therefore, we can conclude that the relation between these variables is negative but no positive one.

#### 4.2.3 Analysis in case of PFCL

Table 4.5 summarizes the MPS, EPS, DPS and NWPS with Mean, S.D. and C.V. of PFCL over five year's period. Table 4.6 shows the relationship (correlation) of EPS, DPS and NWPS to MPS along with the significance of such relationships.

**Table 4.5: Mean, Standard Deviation & CV of PFCL**

<b>Year</b>	<b>MPS(a)</b>	<b>EPS(b)</b>	<b>DPS(c)</b>	<b>NWPS(d)</b>
<b>2004/5</b>	100	17.62	10	128.80
<b>2005/6</b>	137	9.72	10	83.14
<b>2006/7</b>	127	13.14	0	130.00
<b>2007/8</b>	699	19.01	20	141.68
<b>2008/9</b>	285	13.54	10	122.41
<b>Mean</b>	269.60	14.61	10.00	121.21
<b>S.D</b>	224.19	3.34	6.32	20.02
<b>C.V.</b>	83.16	22.84	63.25	16.52

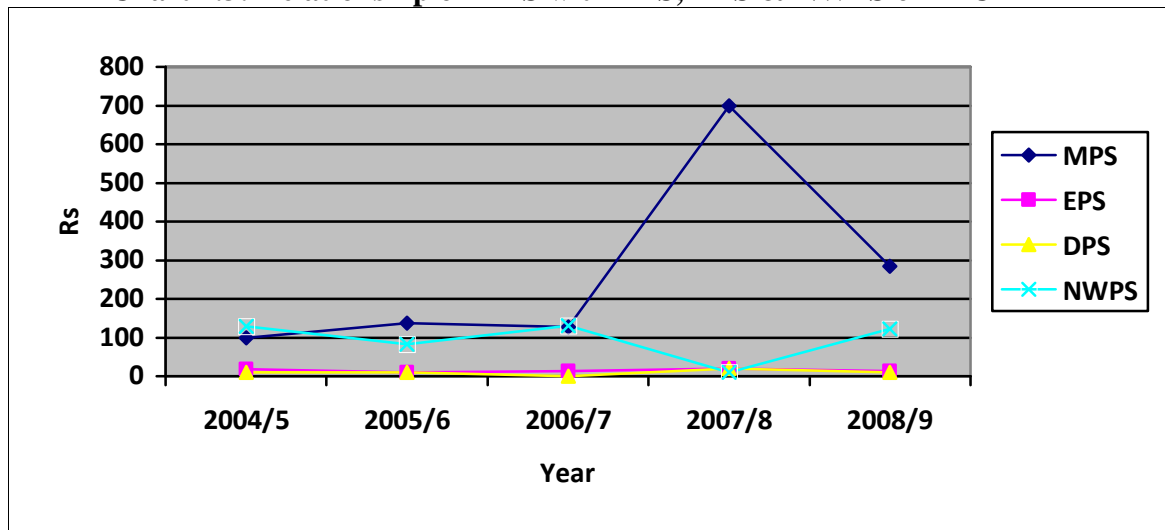
*Source: 12<sup>th</sup> & 13<sup>th</sup> annual report of PFCL*

**Table 4.6: Relationship of MPS with EPS, DPS and NWPS of PFCL**

Variable	r	r <sup>2</sup>	Probable Error	Test of Significance	Remarks
r <sub>ab</sub>	0.5938	0.3526	0.1953	no conclusion	positive
r <sub>ac</sub>	0.8068	0.6510	0.1053	significant	high positive
r <sub>ad</sub>	0.5042	0.2542	0.2250	no conclusion	positive

Annex: IV

**Chart 4.3: Relationship of MPS with EPS, DPS & NWPS of PFCL**



It can be clearly stated from the analysis made above in Table 4.3, 4.4 and Chart 4.3 that CV of MPS (83.16) and DPS (63.25) are highly volatile in comparison to that of EPS (22.84) and NWPS (16.52). In addition to this correlation coefficient between MPS and EPS, MPS and DPS & MPS and NWPS all are positive. And the Probable Errors calculated above in all cases are less than correlation coefficient(r). So, we can reach to the conclusion that the correlation coefficient calculated is significant in case of MPS and DPS and no conclusion can be drawn about it in rest cases. And there is positive relation between MPS and other variables considered here. It means the major causes of volatility of MPS of PFCL are EPS, DPS and NWPS and limited change in MPS is caused by rest factors as shown by coefficient of determination (r<sup>2</sup>).



It indicates that 35.26%, 65.10% & 25.42% change in MPS has resulted due to the change in EPS, DPS and NWPS respectively and only the rest is by other factors.

Being the employee (myself) of PFCL, I can say that the MPS of the year 2007/8 seems to be abnormal as shown by the chart 4.3, when we compare it to that of other years considered, because of 1:2 Right Share afforded by the company. Therefore, we can conclude that the relation between these variables is positive and say the major causes of volatility of MPS of PFCL are change in EPS, DPS & NWPS and to some extent by issue of Right Share.

#### 4.2.4 Analysis in case of HGI

Table 4.7 summarizes the MPS, EPS, DPS and NWPS with Mean, S.D. and C.V. of HGI over five year's period. Table 4.8 shows the relationship (correlation) of EPS, DPS and NWPS to MPS along with the significance of such relationships.

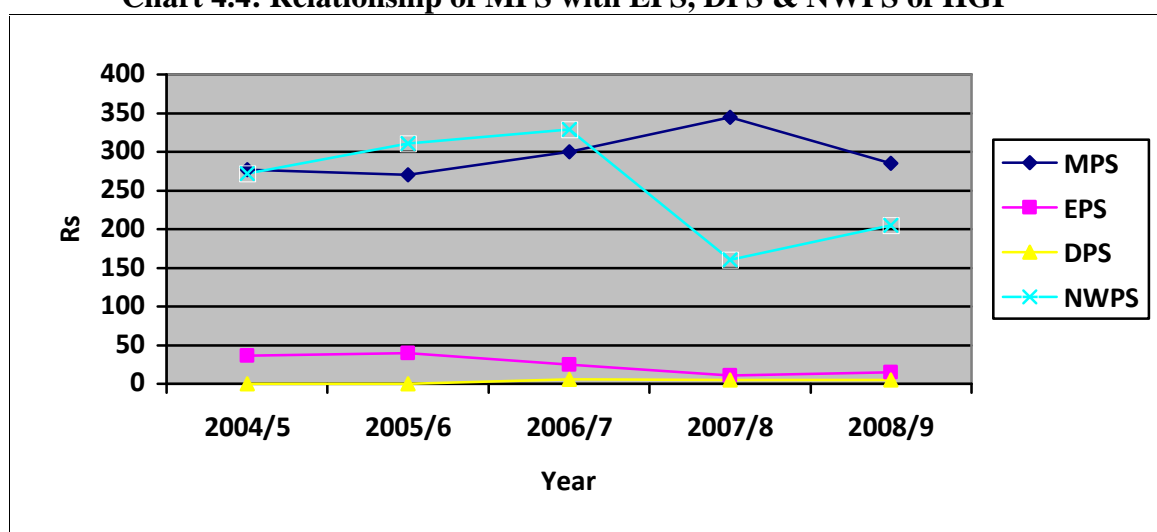
**Table 4.7: Mean, Standard Deviation & CV of HGI**

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)
2004/5	277	36.70	0.00	271.61
2005/6	270	39.90	0.00	311.08
2006/7	300	25.12	5.79	328.55
2007/8	345	10.61	5.26	160.29
2008/9	285	15.10	5.00	205.00
<b>Mean</b>	295.40	25.49	3.21	255.31
<b>S.D</b>	26.73	11.51	2.63	63.72
<b>C.V.</b>	9.05	45.18	82.03	24.96

Source: [www.hgi.com.np/financial\\_report.php](http://www.hgi.com.np/financial_report.php) (on 2010/02/16)

**Table 4.8: Relationship of MPS with EPS, DPS and NWPS of HGI**

Variable	r	r <sup>2</sup>	Probable Error	Test of Significance	Remarks
r <sub>ab</sub>	-0.7823	0.6120	0.1170	insignificant	high negative
r <sub>ac</sub>	0.6692	0.4478	0.1666	no conclusion	positive
r <sub>ad</sub>	-0.6539	0.4276	0.1727	insignificant	negative

**Chart 4.4: Relationship of MPS with EPS, DPS & NWPS of HGI**

It can be clearly stated from the analysis made above in Table 4.7, 4.8 and Chart 4.4 that CV of DPS (82.03) and EPS (45.18) are highly volatile in comparison to that of MPS (9.05) and NWPS (24.96). In addition to this correlation coefficient between MPS and EPS is high negative, MPS and DPS is positive & MPS and NWPS is negative. And the Probable Errors calculated in case of MPS and EPS & MPS and NWPS are greater than correlation coefficient and less than correlation coefficient in case on MPS and DPS but 6PE is greater than correlation coefficient in all above cases. So, we can reach to the conclusion that the correlation coefficient calculated is insignificant in case of MPS and EPS & MPS and NWPS and no conclusion can be drawn in case of MPS and DPS about the significance of correlation coefficient calculated. And there is positive relation of MPS with EPS of HGI and negative relation with rest two variables considered. It means the major causes of volatility of MPS of HGI are EPS, DPS and NWPS and limited change in MPS is caused by rest factors as shown by coefficient of determination ( $r^2$ ). It indicates that 61.20%, 44.78% & 42.76% change in MPS has resulted due to the change in EPS, DPS and NWPS respectively and only the rest is by other factors.

Therefore, we can conclude that the relation between these variables high negative and positive and say the certain causes of volatility of MPS of PFCL are change in EPS, DPS & NWPS and to some extent by issue of Right Share.

#### 4.2.5 Analysis in case of CHCL

Table 4.9 summarizes the MPS, EPS, DPS and NWPS with Mean, S.D. and C.V. of CHCL over five year's period. Table 4.10 shows the relationship (correlation) of EPS, DPS and NWPS to MPS along with the significance of such relationships.

**Table 4.9: Mean, Standard Deviation & CV of CHCL**

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)
2004/5	390	52.83	25	203.94
2005/6	400	69.61	20	204.75
2006/7	940	91.19	30	266.22
2007/8	1562	93.12	35	324.33
2008/9	1296	98.00	40	350.00
Mean	917.60	80.95	30.00	269.85
S.D	470.15	17.11	7.07	59.98
C.V.	51.24	21.13	23.57	22.23

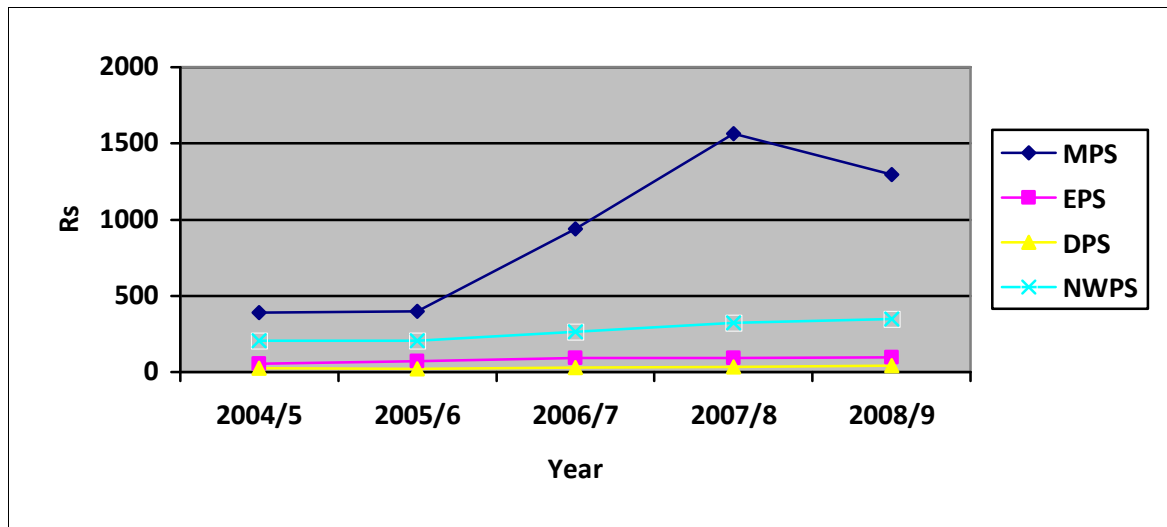
Source: Annual Reports of CHCL & www.nepalstock.com

**Table 4.10: Relationship of MPS with EPS, DPS and NWPS of CHCL**

Variable	r	r <sup>2</sup>	Probable Error	Test of Significance	Remarks
r <sub>ab</sub>	0.8761	0.7676	0.0701	significant	high positive
r <sub>ac</sub>	0.8916	0.7949	0.0619	significant	high positive
r <sub>ad</sub>	0.9491	0.9009	0.0299	significant	high positive

Annex: IV

**Chart 4.4: Relationship of MPS with EPS, DPS & NWPS of CHCL**



It can be clearly stated from the analysis made above in Table 4.9, 4.10 and Chart 4.5 that CV of MPS (51.24) is slightly greater than that of EPS (21.13), DPS (23.57) and NWPS (22.23). In addition to this correlation coefficient between MPS and EPS, MPS and DPS & MPS and NWPS all are highly positive. And the correlation coefficients in all cases are greater than 6PE. So, we can reach to the conclusion that the correlation coefficients calculated is significant in all cases. And there is high positive relation between MPS and other variables considered here. It means the major causes of volatility of MPS of CHCL are EPS, DPS and NWPS and limited change in MPS is caused by rest factors as shown by coefficient of determination ( $r^2$ ). It indicates that 76.76%, 79.49% & 90.09% change in MPS has resulted due to the change in EPS, DPS and NWPS respectively and only the rest is by other factors.

Therefore, we can conclude that the relation between these variables is high positive and say the major causes of volatility of MPS of CHCL are change in EPS, DPS & NWPS.

#### 4.2.6 Analysis in case of UNL

Table 4.11 summarizes the MPS, EPS, DPS and NWPS with Mean, S.D. and C.V. of UNL over five year's period. Table 4.12 shows the relationship (correlation) of EPS, DPS and NWPS to MPS along with the significance of such relationships.

**Table 4.11: Mean, Standard Deviation & CV of UNL**

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)
2004/5	1631	205.32	400	240.28
2005/6	2500	258.66	250	244.28
2006/7	3400	285.71	275	255.01
2007/8	4100	364.00	350	270.00
2008/9	4250	390.00	374	287.06
<b>Mean</b>	3176.20	300.74	329.80	259.33
<b>S.D</b>	990.09	67.93	57.72	17.27
<b>C.V.</b>	31.17	22.59	17.50	6.66

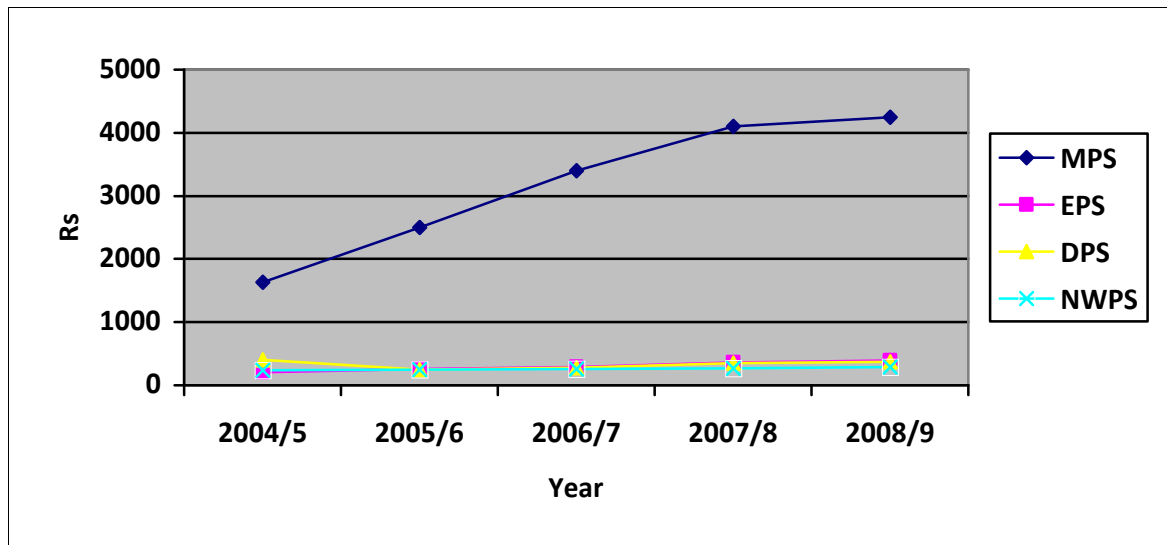
Source: NEPSE annual report & www.nepalstock.com

**Table 4.12: Relationship of MPS with EPS, DPS and NWPS of UNL**

Variable	r	r <sup>2</sup>	Probable Error	Test of Significance	Remarks
r <sub>ab</sub>	0.9719	0.9446	0.0167	significant	high positive
r <sub>ac</sub>	-0.0023	0.0000	0.3016	insignificant	no relation
r <sub>ad</sub>	0.9157	0.8386	0.0487	significant	high positive

Annex: IV

**Chart 4.6: Relationship of MPS with EPS, DPS & NWPS of UNL**



It can be clearly stated from the analysis made above in Table 4.11, 4.12 and Chart 4.6 that CV of MPS (31.17) is greater than that of all other variables taken into consideration. In addition to this correlation coefficient between MPS and EPS and MPS and NWPS all are highly positive. And the correlation coefficient is significant in these two cases and insignificant in rest case. And there is high positive relation between MPS and EPS and NWPS. It means the major causes of volatility of MPS of UNL are EPS and NWPS and limited change in MPS is caused by rest factors as shown by coefficient of determination ( $r^2$ ). It indicates that 94.46% & 83.86% % change in MPS has resulted due to the change in EPS and NWPS respectively and only the rest is by other factors.

Therefore, we can conclude that the relation between these variables is high positive and say the major causes of volatility of MPS of UNL are change in EPS & NWPS.

### 4.3 Analysis of Overall behavior of NEPSE Index

The weighted average or overall situation of stock market/stock price volatility is reflected by NEPSE index. Therefore, it is very essential to know about its behavior when we enter into the topic of stock price volatility. Hence, here the analysis is

focused to trace out the fluctuation/volatility of NEPSE index in overall basis and different sector's basis.

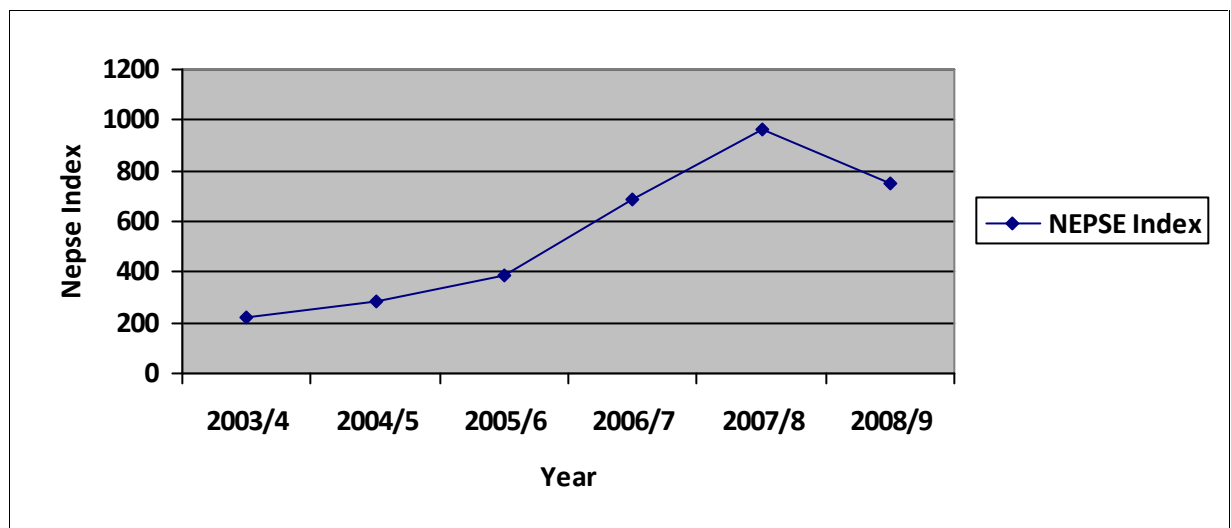
#### 4.3.1 NEPSE Index Analysis (Yearly Trend Analysis)

**Table 4.13: NEPSE Index for 6 year**

Year	NEPSE Index	% Change
2003/4	222.04	-
2004/5	286.67	29.11
2005/6	386.83	34.95
2006/7	683.95	76.81
2007/8	963.36	40.85
2008/9	749.10	-22.24
<b>Mean</b>	548.66	
<b>S.D.</b>	268.32	
<b>C.V.</b>	48.90	

*Source: Annual Report of NEPSE 2008-9*

**Chart 4.7: NEPSE Index for 6 year**



As reflected by the above Table 4.13 and Chart 4.7 NEPSE index was gradually increased from year 2003/4 to 2007/8 and after which the decreasing trend is traced

out. And the matured point of it is in the year 2007/8, which shows the overall/weighted average stock price of Nepalese Stock Market was continuously increased (bullish trend) till 2007/8 and after that declining trend (bearish trend) was seen. The C.V. of NEPSE index as above calculated i.e. 48.90% clearly reflects that the volatility of overall stock market index is high. So, it can be clearly noted that there is high volatility of stock prices in Nepalese Stock Market. Moreover, the standard deviation (268.32) calculated also exhibits high risk factor in the market. Finally, if we draw the overall trend scale to represent the NEPSE index for the period we can reach to the conclusion that the NEPSE index is increasing in recent years signaling to be increased in forthcoming years too.

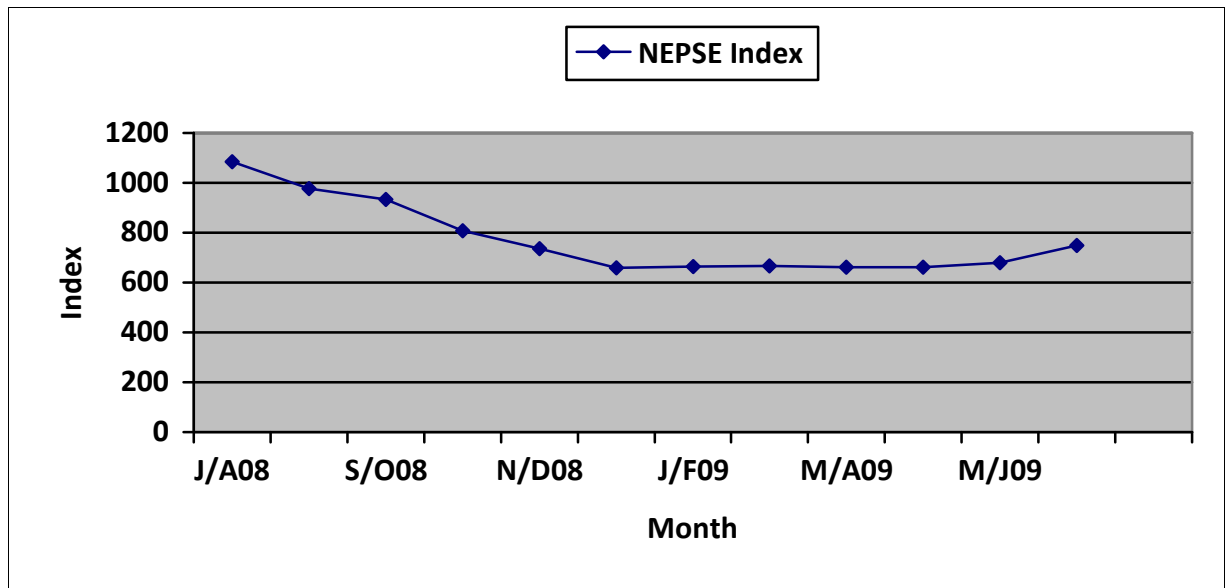
#### 4.3.1.1 NEPSE Index Analysis (Monthly Trend Analysis)

**Table 4.14: NEPSE Index of different months during 2008/9**

<b>Months</b>	<b>NEPSE Index</b>	<b>Months</b>	<b>NEPSE Index</b>
Jul/Aug 08	1084.76	Jan/Feb 09	663.52
Aug/Sep 08	976.01	Feb/Mar 09	667.20
Sep/Oct 08	933.97	Mar/Apr 09	661.27
Oct/Nov 08	806.90	Apr/May 09	660.96
Nov/Dec 08	734.85	May/Jun 09	678.74
Dec/Jan 09	659.81	Jun/Jul 09	749.10

**Chart 4.8: NEPSE Index of different months during 2008/9**





From the Table no. 4.14 and Chart 4.8, it can be reflected that the overall trend of NEPSE Index for the year is declining though it seems to be improved at the end of the year. The difference between lowest point (659.81) in Dec/Jan 2009 and highest point (1084.76) in Jul/Aug 2008 is 424.95 points, which clearly shows that as in overall NEPSE index during six years, the variation/deviation is high resulting to higher risk factor. In conclusion, the NEPSE Index during the year is in bearish trend because the chart showed that the overall trend at the start and end of the year is declining. Hence, we can easily reach into decision that in Nepalese Market there is high volatility in stock price. However, the index is decreasing in the recent months of the years if we draw the trend scale in overall basis for the period.

### 4.3.2 Monthly Trend Analysis of Sector Wise Index

Nepalese industrial sector is the backbone of Nepalese economy. They play the vital role in the capital market. There are eight types of Nepalese industries registered in the NEPSE. Now, in process of data presentation and analysis, we are going to study the behavior of index of the every type of industries' on monthly trend basis.

#### 4.3.2.1 Monthly Trend Analysis of Commercial Bank's Index

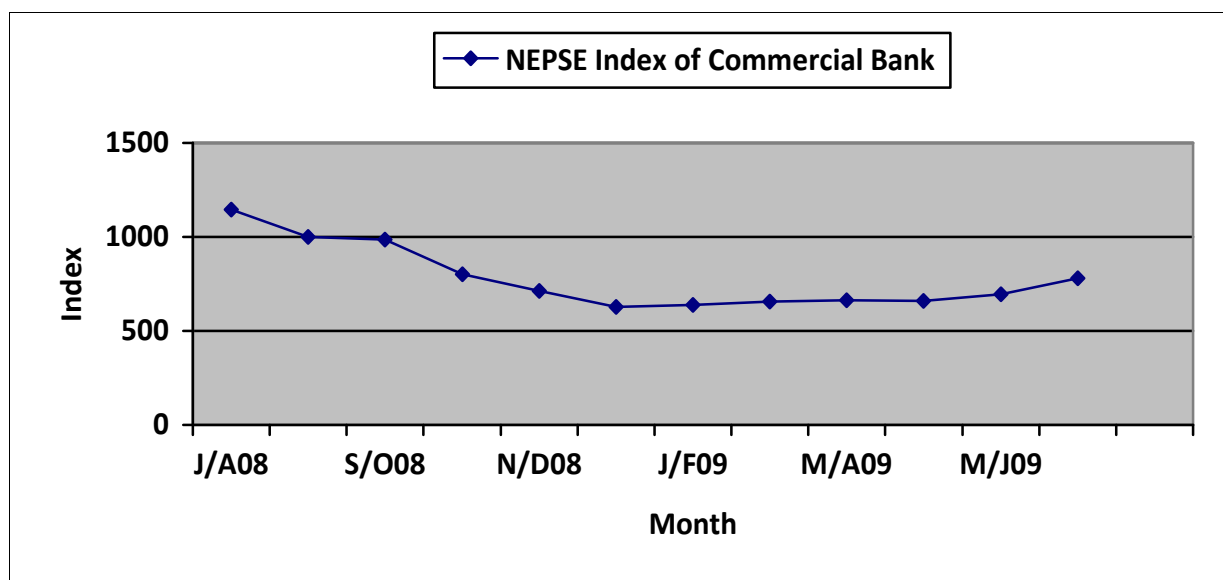
Commercial Bank play vital role in overall growth and market capitalization of the Nepalese market as their share is almost half of total market capacity as compared to that of other sectors. So, it is very essential to know the behavior of this sector's index in order to know the trend of overall NEPSE index.

**Table 4.15: NEPSE Index of Commercial Bank during 2008/9**

Months	NEPSE Index	Months	NEPSE Index
Jul/Aug 08	1143.62	Jan/Feb 09	637.98
Aug/Sep 08	999.13	Feb/Mar 09	656.85
Sep/Oct 08	986.45	Mar/Apr 09	662.71
Oct/Nov 08	800.35	Apr/May 09	658.53
Nov/Dec 08	713.19	May/June 09	696.78
Dec/Jan 09	627.39	Jun/Jul 09	780.87

*Source: Annual Report of NEPSE of 2008/9*

**Chart 4.9: Index of Commercial Bank during 2008/9**



From the Table no. 4.13 and Chart 4.8, it can be reflected that the trend of NEPSE Index of Commercial Bank from July/Aug 2008 to Dec/Jan 2009 is decreasing and

after that increasing in lower rate till Jun/Jul 2009. The difference between lowest point (627.39) in Dec/Jan 2009 and highest point (1143.62) in Jul/Aug 2008 is 516.23 points, which clearly shows that as in overall NEPSE index the variation/deviation is high resulting to higher risk factor. In conclusion, the NEPSE Index of Commercial Bank is satisfactory because the chart showed that comparing middle of the year the index at end is in the increasing trend.

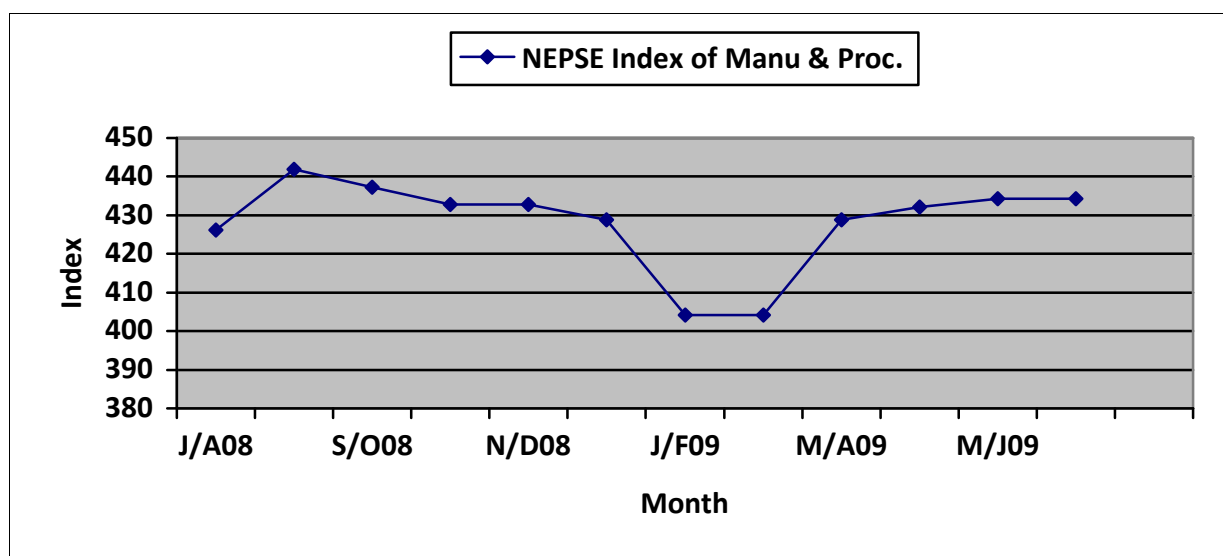
#### 4.3.2.2 Monthly Trend Analysis of Manufacturing & Processing Sector's Index

**Table 4.16: NEPSE Index of Manufacturing & Processing during 2008/9**

Months	NEPSE Index	Months	NEPSE Index
Jul/Aug 08	426.25	Jan/Feb 09	404.10
Aug/Sep 08	441.92	Feb/Mar 09	404.10
Sep/Oct 08	437.31	Mar/Apr 09	428.86
Oct/Nov 08	432.79	Apr/May 09	432.13
Nov/Dec 08	432.74	May/Jun 09	434.32
Dec/Jan 09	428.85	Jun/Jul 09	434.32

*Source: Annual Report of NEPSE of 2008/9*

**Chart 4.10: Index of Manufacturing & Processing during 2008/9**



From the Table no. 4.14 and Chart 4.9, it can be concluded that the trend of NEPSE Index of Manufacturing and Processing Sector is zigzag, which cannot clearly be predicted because of its randomness in movement from one to another month. The difference between lowest point (404.10) and highest point (441.92) is 37.82 points, from which we can conclude that the deviation is lesser than that of Commercial Bank. In conclusion, the NEPSE Index of Manufacturing and Processing is satisfactory because the chart shows that comparing middle of the year the index at end is in the increasing trend.

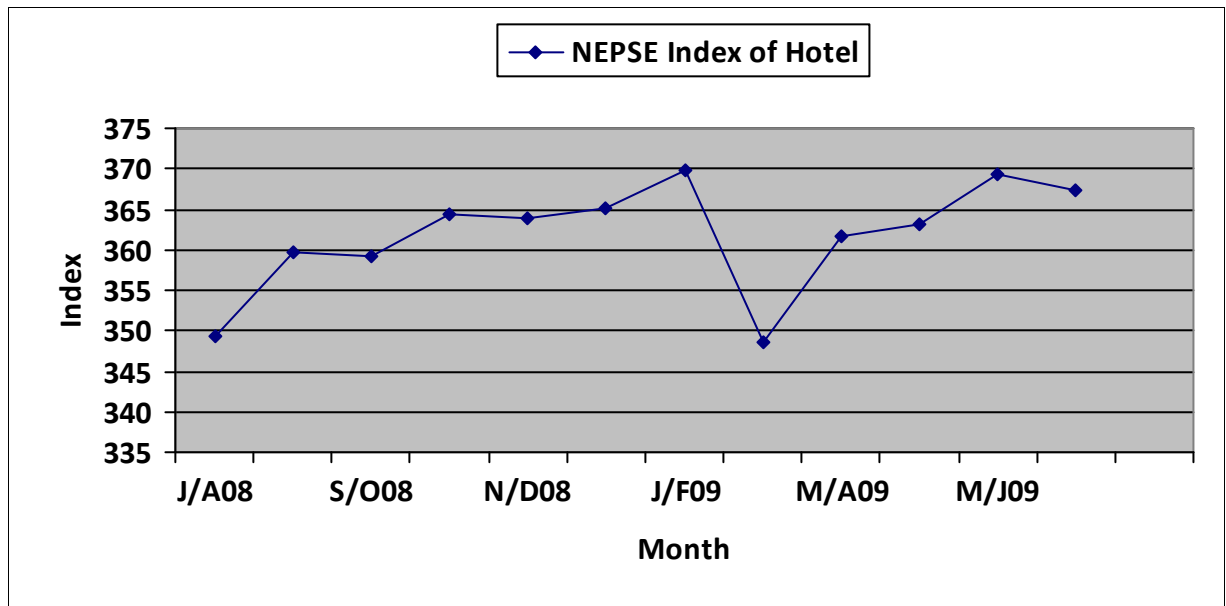
#### 4.3.2.3 Monthly Trend Analysis of Hotel Industry's Index

**Table 4.17: NEPSE Index of Hotel Industry during 2008/9**

<b>Months</b>	<b>NEPSE Index</b>	<b>Months</b>	<b>NEPSE Index</b>
Jul/Aug 08	349.42	Jan/Feb 09	369.87
Aug/Sep 08	359.66	Feb/Mar 09	348.61
Sep/Oct 08	359.29	Mar/Apr 09	361.66
Oct/Nov 08	364.30	Apr/May 09	363.11
Nov/Dec 08	363.92	May/Jun 09	369.35
Dec/Jan 09	365.07	Jun/Jul 09	367.42

*Source: Annual Report of NEPSE of 2008/9*

#### **Chart 4.11: Index of Hotel Industry during 2008/9**



From the Table no. 4.15 and Chart 4.10, it can be concluded that though the zigzag trend is seen, the overall trend of NEPSE index of Hotel Industry at all is in increasing trend when we compare to the index at the beginning and end of the year. The difference between lowest point (348.61) and highest point (369.87) is 21.26 points, from which we can conclude that the deviation is lesser than that of Commercial Bank. In conclusion, the NEPSE Index of Hotel is satisfactory because the analysis of table and chart above shows if overall trend is drawn then the index results into increasing trend taking Jul/Aug 2008 as base period and the risk in this sector is lesser than that of Commercial Bank and Manufacturing & Processing sectors.

#### 4.3.2.4 Monthly Trend Analysis of Hydro Power's Index

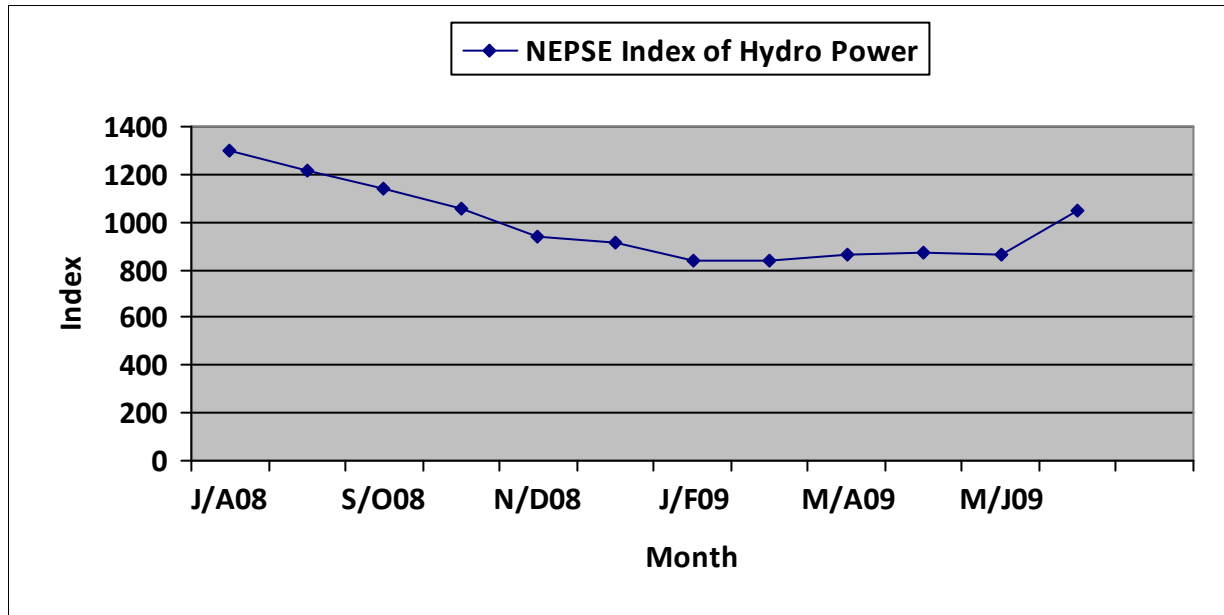
Table 4.18: NEPSE Index of Hydro Power during 2008/9

Months	NEPSE Index	Months	NEPSE Index
Jul/Aug 08	1297.36	Jan/Feb 09	842.19
Aug/Sep 08	1219.68	Feb/Mar 09	838.07
Sep/Oct 08	1139.70	Mar/Apr 09	865.88

Oct/Nov 08	1054.18	Apr/May 09	875.07
Nov/Dec 08	939.45	May/June 09	861.22
Dec/Jan 09	916.24	June/July 09	1044.81

Source: Annual Report of NEPSE of 2008/9

**Chart 4.12: Index of Hydro Power during 2008/9**



From the Table no. 4.16 and Chart 4.11, it can be concluded that the trend of NEPSE index of Hydro Power sector at the beginning to mid of the year is decreasing and when we reach towards the end of the year it again goes on increasing trend. The difference between lowest point (838.07) and highest point (1297.36) is 459.29 points, from which we can conclude that the deviation is greater than that of Manufacturing & Processing and Hotel Industry. In conclusion, the NEPSE Index of Hydro Power is satisfactory because the analysis of table and chart above shows, though the difference between highest and lowest points is high, almost linear trend, by the use of which one can predict the trend of next step.

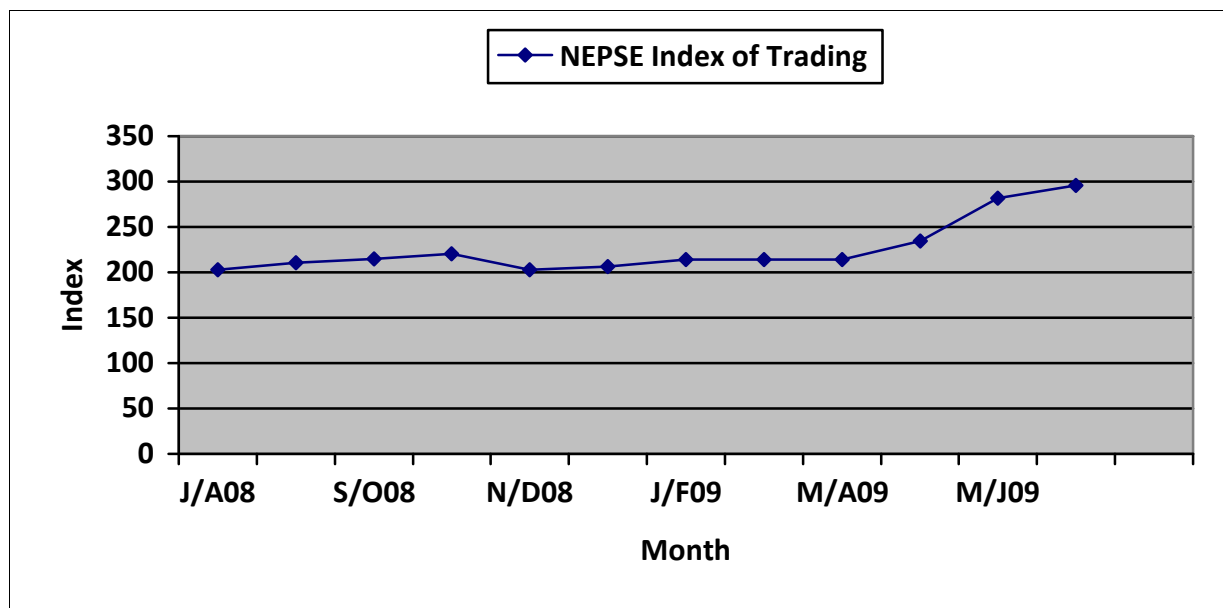
#### 4.3.2.5 Monthly Trend Analysis of Trading Sector's Index

**Table 4.19: NEPSE Index of Trading Sector during 2008/9**

Months	NEPSE Index	Months	NEPSE Index
Jul/Aug 08	203.14	Jan/Feb 09	213.90
Aug/Sep 08	210.60	Feb/Mar 09	213.82
Sep/Oct 08	214.46	Mar/Apr 09	214.08
Oct/Nov 08	220.54	Apr/May 09	234.64
Nov/Dec 08	202.63	May/June 09	281.78
Dec/Jan 09	206.45	Jun/Jul 09	295.83

*Source: Annual Report of NEPSE of 2008/9*

**Chart 4.13: Index of Trading Sector during 2008/9**



From the Table no. 4.17 and Chart 4.12, it can be concluded that the overall trend of NEPSE index of Trading Sector at all is in increasing trend when we compare to the index at the beginning and end of the year. The difference between lowest point (202.63) and highest point (295.83) is 93.20 points, from which we can conclude that

the deviation greater than that of Manufacturing and Processing & Hotel Industry. In conclusion, the NEPSE Index of Trading Sector is satisfactory because the analysis of table and chart above shows if overall trend is drawn then the index results into increasing trend taking Jul/Aug 2008 as base period and the risk in this sector is lesser than that of Commercial Bank and Manufacturing & Processing sectors because of almost linear trend for the period, by the help of which one can reach his/her prediction to almost actual.

#### 4.3.2.6 Monthly Trend Analysis of Insurance Sector's Index

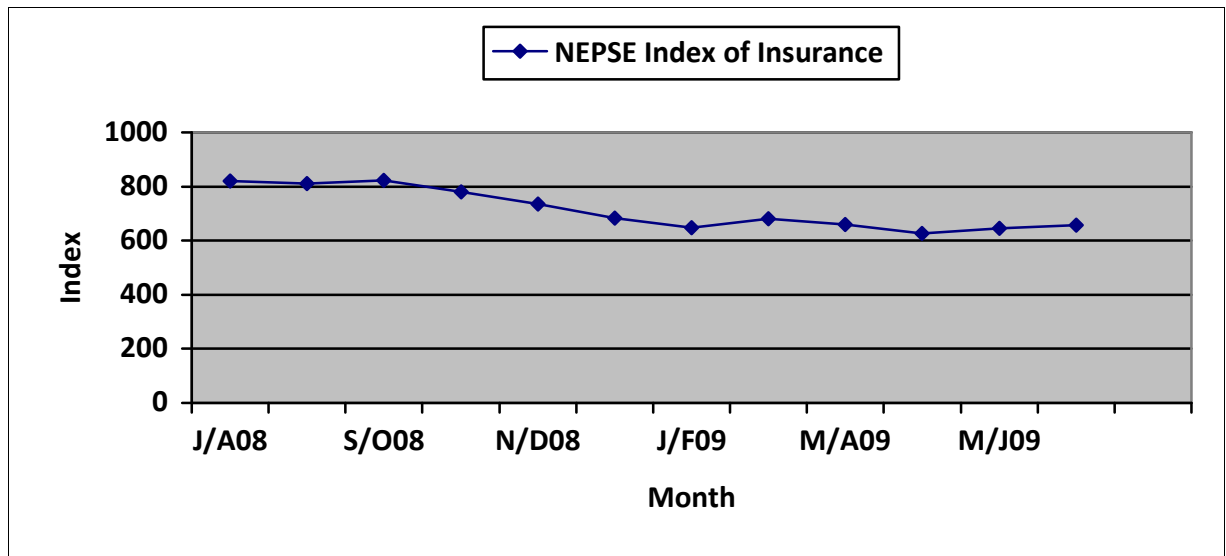
**Table 4.20: NEPSE Index of Insurance Sector during 2008/9**

<b>Months</b>	<b>NEPSE Index</b>	<b>Months</b>	<b>NEPSE Index</b>
Jul/Aug 08	820.57	Jan/Feb 09	648.82
Aug/Sep 08	810.01	Feb/Mar 09	681.47
Sep/Oct 08	822.48	Mar/Apr 09	658.71
Oct/Nov 08	780.07	Apr/May 09	626.07
Nov/Dec 08	734.34	May/Jun 09	646.43
Dec/Jan 09	682.68	Jun/Jul 09	656.41

*Source: Annual Report of NEPSE of 2008/9*

#### **Chart 4.14: Index of Insurance Sector during 2008/9**





From the Table no. 4.18 and Chart 4.13, it can be concluded that the overall trend of NEPSE index of Insurance Sector at all is in decreasing trend when we compare to the index at the beginning and end of the year. The difference between lowest point (626.07) and highest point (822.48) is 196.41 points, from which we can conclude that there is high fluctuation in the index. In conclusion, the NEPSE Index of Insurance Sector is dissatisfactory because the analysis of table and chart above shows if overall trend is drawn then the index results into decreasing trend taking Jul/Aug 2008 as base period and the risk in this sector is also moderate than that of Commercial Bank and Manufacturing & Processing sectors because of almost linear trend for the period, by the help of which one can reach his/her prediction to almost actual.

#### 4.3.2.7 Monthly Trend Analysis of Finance Sector's Index

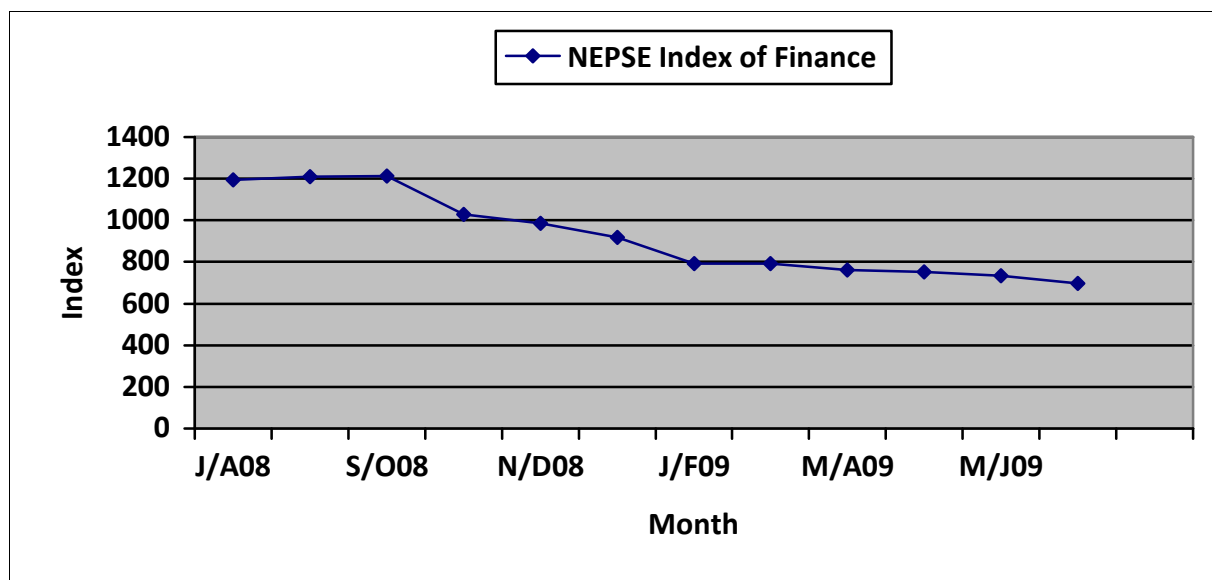
**Table 4.21: NEPSE Index of Finance Sector during 2008/9**

Months	NEPSE Index	Months	NEPSE Index
Jul/Aug 08	1193.74	Jan/Feb 09	791.60
Aug/Sep 08	1211.07	Feb/Mar 09	792.55
Sep/Oct 08	1211.81	Mar/Apr 09	761.59
Oct/Nov 08	1029.67	Apr/May 09	752.10

Nov/Dec 08	986.04	May/Jun 09	732.86
Dec/Jan 09	916.50	Jun/Jul 09	697.91

Source: Annual Report of NEPSE of 2008/9

**Chart 4.15: Index of Finance Sector during 2008/9**



From the Table no. 4.19 and Chart 4.14, it can be concluded that the overall trend of NEPSE index of Finance Sector at all is in decreasing trend when we compare to the index at the beginning and end of the year. The difference between lowest point (697.91) and highest point (1211.81) is 513.90 points, from which we can conclude that there is high fluctuation in the index. In conclusion, the NEPSE Index of Finance Sector is dissatisfactory because the analysis of table and chart above shows if overall trend is drawn then the index results into decreasing trend taking Jul/Aug 2008 as base period and the risk in this sector is also high as that of Commercial Bank and Manufacturing & Processing sectors.

#### 4.3.2.8 Monthly Trend Analysis of Development Bank's Index

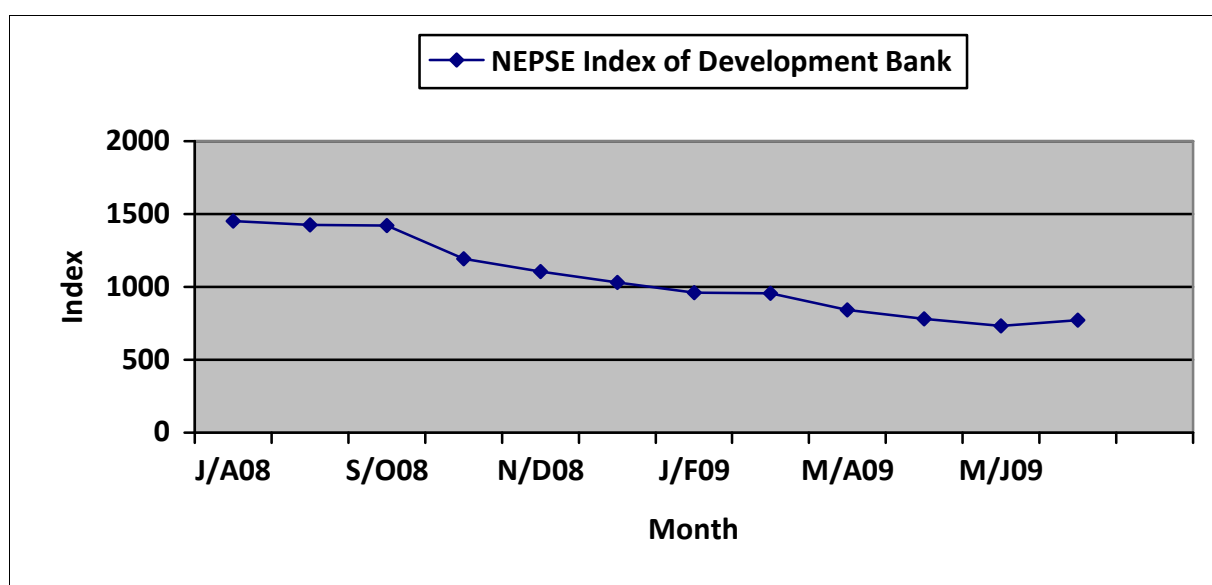
**Table 4.22: NEPSE Index of Development Bank during 2008/9**

Months	NEPSE Index	Months	NEPSE Index
--------	-------------	--------	-------------

Jul/Aug 08	1452.53	Jan/Feb 09	960.41
Aug/Sep 08	1425.28	Feb/Mar 09	958.09
Sep/Oct 08	1423.17	Mar/Apr 09	840.90
Oct/Nov 08	1190.84	Apr/May 09	779.10
Nov/Dec 08	1104.11	May/Jun 09	732.62
Dec/Jan 09	1032.17	Jun/Jul 09	772.56

Source: Annual Report of NEPSE of 2008/9

**Chart 4.16: Index of Development Bank during 2008/9**



From the Table no. 4.20 and Chart 4.15, it can be concluded that the overall trend of NEPSE index of Development Bank at all is in decreasing trend when we compare to the index at the beginning and end of the year. The difference between lowest point (732.62) and highest point (1452.53) is 719.91 points, from which we can conclude that there is high fluctuation in the index. In conclusion, the NEPSE Index of Development Bank is dissatisfactory because the analysis of table and chart above shows if overall trend is drawn then the index results into decreasing trend taking Jul/Aug 2008 as base period and the risk in this sector is also higher as than that of all other sectors analyzed above for the period.

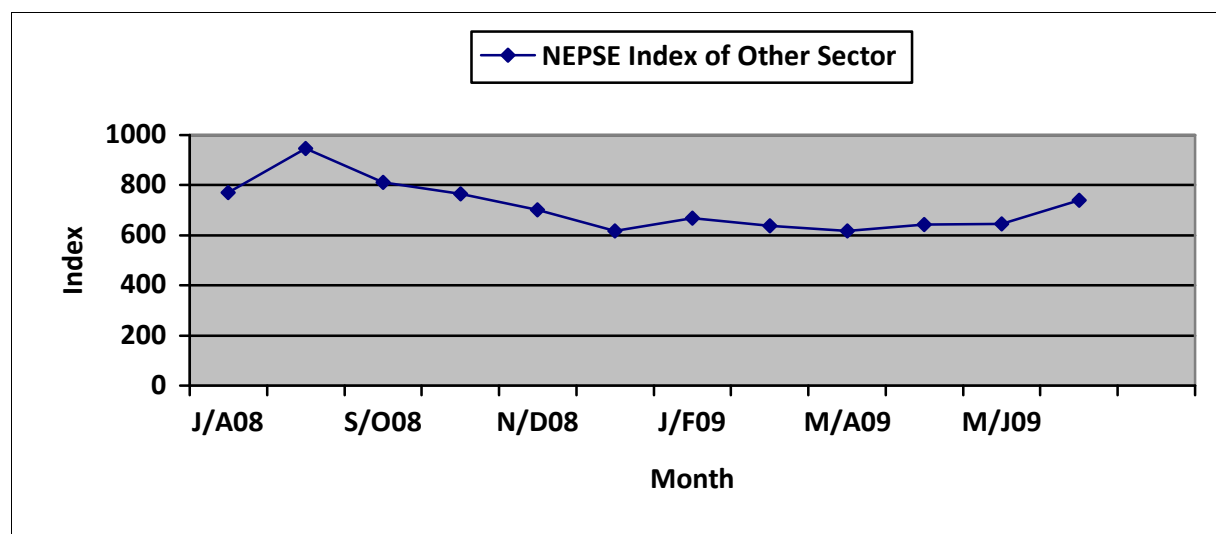
### 4.3.2.9 Monthly Trend Analysis of Other Sector's Index

**Table 4.23: NEPSE Index of Other Sector during 2008/9**

Months	NEPSE Index	Months	NEPSE Index
Jul/Aug 08	769.21	Jan/Feb 09	668.51
Aug/Sep 08	945.72	Feb/Mar 09	637.97
Sep/Oct 08	811.81	Mar/Apr 09	616.83
Oct/Nov 08	766.01	Apr/May 09	643.84
Nov/Dec 08	702.58	May/June 09	646.19
Dec/Jan 09	616.83	June/July 09	738.99

*Source: Annual Report of NEPSE of 2008/9*

**Chart 4.17: Index of Other Sector during 2008/9**



From the Table no. 4.21 and Chart 4.16, it can be concluded that the overall trend of NEPSE index of Other Sector at all is in decreasing trend when we compare to the index at the beginning and end of the year. However, at the end of the year it seems to be the increasing trend has started. The difference between lowest point (616.83) and highest point (945.72) is 328.89 points, from which we can conclude that there is high fluctuation in the index. In conclusion, the NEPSE Index of Other Sector is

dissatisfactory because the analysis of table and chart above shows if overall trend is drawn then the index results into decreasing trend taking Jul/Aug 2008 as base period and the risk in this sector is also higher as the trend is zigzag and cannot be estimated easily.

### 4.3.3 The number of listed companies and transacting companies in NEPSE

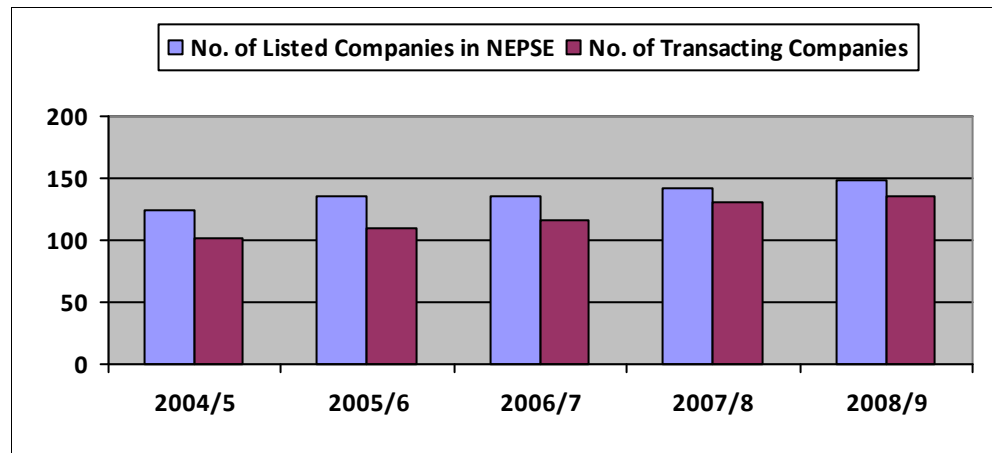
Greater the number of listed companies greater the the size of capital market and greater the chance of diversification of investment resulting to decrease the investment in single stock if other things remained constant. It means indirectly there is the chance of volatility in stock price due to increment in listed companies. Table no.4.24 shows the number of listed companies in Nepal Stock Exchange Ltd. from the Fiscal Year 2004/5 to 2008/9. The table clearly shows that the no. of listed company is increasing in every fiscal year. This shows the growing capital market of Nepal and future opportunities from the point of view of investors.

**Table 4.24: Number of listed & transacting companies in NEPSE**

<b>Fiscal Year</b>	<b>No. of listed Companies</b>	<b>No. of Transacting Companies</b>	<b>% change of no. of listed com.</b>
2004/5	125	102	-
2005/6	135	110	8.00
2006/7	135	116	0.00
2007/8	142	130	5.19
2008/9	149	136	4.93

*Source: Annual Report of NEPSE of 2007/8 & 2008/9*

**Chart 4.18: No. of listed & transacting companies in NEPSE**



It has been reflected by the above table and figure that the number of listed companies is continuously increasing in recent years, which is the signal of the growing and steady market. Though the number of listed companies are increasing total listed companies are not able to be transacted even in a single year also.

#### **4.4 Signaling Effect/Events Study**

Nepalese stock market is not perfect and matured one. Lack of the knowledge in investors, lack of the proper government policy, manipulated activities of brokers and unstable politics is affecting directly the stock market. Sometimes, national and international signaling effects may be the price determining factor of Nepalese securities market.

For seeing the signaling factors effect in overall stock price, we can use the pure statistical tools, i.e. paired t-test. Impact of signaling factors effect in the NEPSE index can be analyzed with the help of the NEPSE Index & t-test formula, by the help of which we can find out whether there is significant difference in index before and after the occurrence of particular event.

For analyzing the impact of signaling factors on NEPSE Index during the period of 2004/5 to 2008/9 with reference to selected four major events of the period. Viz.

) Janaaandolon (May/Jun2006)

- ) Lead of Govt. by Maoists (Aug 2008)
- ) Capital Gain Tax Increment (10% to 15%) (Sep 2008)
- ) Govt. renounce by Maoists (May 2009)

Hypothesis between major events of the country and NEPSE price are made to find out the result, for this purpose, null hypothesis and alternative hypothesis are the bases of the study and can be set as below;

#### **4.4.1 Null Hypothesis ( $H_0$ )**

- a)** There is no significant difference between NEPSE index before and after the Janaaandolon.
- b)** There is no significant difference between NEPSE index before and after leading the Govt. by Maoists.
- c)** There is no significant difference between NEPSE index before and after the increment in capital gain tax.
- d)** There is no significant difference between NEPSE index before and after the renounce of Govt. by Maoists.

#### **4.4.2 Alternative Hypothesis ( $H_1$ )**

- a)** There is significant difference between NEPSE index before and after the Janaaandolon.
- b)** There is significant difference between NEPSE index before and after leading the Govt. by Maoists.
- c)** There is significant difference between NEPSE index before and after the increment in capital gain tax.
- d)** There is significant difference between NEPSE index before and after the renounce of Govt. by Maoists.

The result obtained by using t-test is presented below;

**Table 4.25: Result from t-test**

<b>Events</b>	<b>t-Tab at 7&amp;8 df. &amp; 5% l.s.</b>	<b>t-Cal at 7&amp;8 df. &amp; 5% l.s.</b>	<b>Conclusion Null hypothesis</b>
<b>Janaaandolon</b>	2.365	2.098	Accepted
<b>Govt. lead by Maoist</b>	2.306	1.097	Accepted
<b>C.G. Tax increment</b>	2.306	2.40	Rejected
<b>Govt. Renounce by Maoist</b>	2.306	0.065	Accepted

(Source: - ANNEX III)

From table 4.25 it is clear that paired t-test tabulated value at 7&8 degree of freedom at 5% level of significance are 2.365 and 2.306 & calculated values are 2.098, 1.097, 2.40 & 0.065 respectively for four major events taken into consideration. Thus, if calculated values are higher than the tabulated value then alternative hypothesis is accepted and if calculated values are lower than the tabulated value null hypothesis is accepted.

Thus, during the signaling effect of Janaaandolon, Govt. lead by Maoist and Govt. renounce by null hypothesis is accepted. And during the signaling effect of capital gain increment the null hypothesis is rejected.

The conclusion that we reached are;

- ) There is no significant difference between NEPSE index before and after the Janaaandolon. So, there was not any effect of Janaaandolon 2062/63 in stock price volatility.
- ) There is no significant difference between NEPSE index before and after the Govt. was lead by the Maoist. So, there was not any effect of leading the Govt. by Maoist in stock price volatility.
- ) There is significant difference between NEPSE index before and after the capital gain tax increment by the Maoist lead Govt. So, we can conclude that the increase in capital gain tax to some extent was responsible for stock price volatility.



) There is no significant difference between NEPSE index before and after the Govt. renouncing by the Maoist. So, there was not any effect of renouncing the Govt. by Maoist.

Hence, we can conclude that such major national events are also responsible to some extent for leading change in stock price and finally the overall capital market too.

#### **4.5 Run Test Analysis**

For this test firstly Null & Alternative hypothesis are defined as under;

Null hypothesis ( $H_0$ ): Price behaviors are random.

Alternative hypothesis ( $H_1$ ): Price behaviors are not random.

Then, during the period we considered, the movement of the stock price are analyzed and found no. of positive and negative signs and also the no. of runs. And at given level of significance (i.e.5%) the critical value is compared to find out whether the price change is responsive or not.

#### **4.5.1 Run Test analysis for SCB**

Ho: The market price movement of SCB is random

H1: The market price movement of SCB is not random.

From annex V we can conclude that;

$$n_1 \text{ (number of +ve signs)} = 14$$

$$n_2 \text{ (number of -ve signs)} = 10$$

$$\text{Number of runs (r)} = 7$$

At  $\alpha = 0.05$ , we can test whether the market price movement is random or not. The critical value of r for  $n_1 = 14$  and  $n_2 = 10$  from the r table is  $I_1$  is 5 and  $I_2$  is 15. Since the value of r lies in between 5 and 15 i.e. 7, the null hypothesis is accepted i.e. the market price movement of SCB is random.

#### **4.5.2 Run Test analysis for ACEDBL**

Ho: The market price movement of ACEDBL is random

H1: The market price movement of ACEDBL is not random.

From annex V we can conclude that;

$$n_1 \text{ (number of +ve signs)} = 12$$

$$n_2 \text{ (number of -ve signs)} = 11$$

$$\text{Number of runs (r)} = 9$$

At  $\alpha = 0.05$ , we can test whether the market price movement is random or not. The critical value of r for  $n_1 = 12$  and  $n_2 = 11$  from the r table is  $I_1$  is 5 and  $I_2$  is 14. Since the value of r lies in between 5 and 14 i.e. 9, the null hypothesis is accepted i.e. the market price movement of ACEDBL is random.

#### **4.5.3 Run Test analysis for PFCL**

Ho: The market price movement of PFCL is random

H1: The market price movement of PFCL is not random.

From annex V we can conclude that;

$$n_1 \text{ (number of +ve signs)} = 11$$

$$n_2 \text{ (number of -ve signs)} = 8$$

$$\text{Number of runs (r)} = 12$$

At  $\alpha = 0.05$ , we can test whether the market price movement is random or not. The critical value of r for  $n_1 = 11$  and  $n_2 = 8$  from the r table is  $I_1$  is 4 and  $I_2$  is 11. Since the value of r doesn't lie in between 4 and 11 i.e. 12, the null hypothesis is rejected i.e. the market price movement of PFCL is not random.

#### **4.5.4 Run Test analysis for HGI**

Ho: The market price movement of HGI is random

H1: The market price movement of HGI is not random.

From annex V we can conclude that;

$$n_1 \text{ (number of +ve signs)} = 8$$

$$n_2 \text{ (number of -ve signs)} = 5$$

$$\text{Number of runs (r)} = 2$$

At  $\alpha = 0.05$ , we can test whether the market price movement is random or not. The critical value of r for  $n_1 = 8$  and  $n_2 = 5$  from the r table is  $I_1$  is 3 and  $I_2$  is 12. Since the value of r lies in between 2 and 12 i.e. 2, the null hypothesis is accepted i.e. the market price movement of HGI is random.

#### **4.5.5 Run Test analysis for CHCL**

Ho: The market price movement of CHCL is random

H1: The market price movement of CHCL is not random.

From annex V we can conclude that;

$$n_1 \text{ (number of +ve signs)} = 13$$

$$n_2 \text{ (number of -ve signs)} = 11$$

Number of runs (r) = 7

At  $\alpha = 0.05$ , we can test whether the market price movement is random or not. The critical value of r for  $n_1 = 13$  and  $n_2 = 11$  from the r table is  $I_1$  is 5 and  $I_2$  is 14. Since the value of r lies in between 5 and 14 i.e. 7, the null hypothesis is accepted i.e. the market price movement of CHCL is random.

#### **4.5.6 Run Test analysis for UNL**

Ho: The market price movement of UNL is random

H1: The market price movement of UNL is not random.

From annex V we can conclude that;

$n_1$  (number of +ve signs) = 13

$n_2$  (number of -ve signs) = 6

Number of runs (r) = 6

At  $\alpha = 0.05$ , we can test whether the market price movement is random or not. The critical value of r for  $n_1 = 13$  and  $n_2 = 6$  from the r table is  $I_1$  is 3 and  $I_2$  is 14. Since the value of r lies in between 3 and 14 i.e. 6, the null hypothesis is accepted i.e. the market price movement of UNL is random.

### **4.6 Presentation and Analysis of Primary data**

Primary data plays the vital role to make the research task meaningful as well as concrete. The study has followed secondary data as supporting base which has been taken from previous resources such as; web sites and annual reports of companies, case studies, journals and magazines, previous thesis report, library search and other related documents. In the course of availing first hand data to justify the study on the topic primarily discussions with experts and questionnaire methods have been made applicable. It reveals the important information as to outlook of the investment decision of investors.

#### **4.6.1 Questionnaire analysis**

One of the important methods of primary data collection is questionnaire method. Under this method, major 10 questions related with stock price volatility and Nepalese Capital Market were prepared and given to the respondents to be filled up.

These Questionnaires are distributed among 40 respondents including investors, Brokers and employees of the NEPSE and SEBO. Questions were set in the following category:

- Yes/No questions.
- Multiple choice questions.
- Open ended questions.

100% of the questionnaires were collected from the field survey. The questionnaire so collected is thus related to find out the opinion of investors on investment action for trading shares through secondary market. Questionnaire format has shown in ANNEX-1. Their responses have been analyzed below in different category;

#### 4.6.1.1 Influencing factor analysis

Regarding the major influencing factors for the stock price, different brokers, individual investors, institutional investors and NEPSE staffs have given different views on their own ideas. Table 4.26 provides the clear picture on the subject as presented below;

**Table 4.26: Influencing factors of the stock price**

S.N.	Research variable	No. of Respondents	%
A	Company's Profit	10	25
B	Company's NWPS	8	20
C	Company's Growth/Future	6	15
D	Company's DPS	10	25
E	Signaling factor	2	5
F	Above all	4	10
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.2 Political Instability

To find out whether the current political instability is the major reason/cause for leading the capital market to the present context (i.e. NEPSE index declined to 485 points from 1150 points), here the question was asked to the respondents and the response shown by them is as below;

**Table 4.27: Analysis of Political Instability**

S.N.	Research variable	No. of Respondents	%
A	0-25%	5	12.5
B	25-50%	10	25
C	50-75%	20	50
D	75-100%	5	12.5
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.3 International Environment analysis

Regarding the international environment effect in the Nepalese Stock Market, different individual investors, institutional investors, brokers, NEPSE staffs and other gave their own ideas about this. The result obtained from this issue is cleared as below;

**Table 4.28: International Environment analysis**

S.N.	Research variable	No. of Respondents	%
A	Yes	20	50
B	No	15	37.5
C	Don't know	5	12.5
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.4 Government's Policy Analysis

As the regulatory body of the Capital Market is the Government and the entities established under direct control of the Government, the policies issued by them are also linked with the Capital Market. So, to know the concerns view about it the question is forwarded and the obtained result is;

**Table 4.28: Government's Policy Analysis**

S.N.	Research variable	No. of Respondents	%
A	Yes	30	75
B	No	5	12.5
C	Don't know	5	12.5
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.5 Awareness of Investors Analysis

Regarding this topic the result obtained from the survey is as follows;

**Table 4.28: Awareness of Investors Analysis**

S.N.	Research variable	No. of Respondents	%
A	Yes	15	37.5
B	No	20	50
C	Can't say	5	12.5
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.6 Basis of Decision Making Analysis

The investment in security by the investor is made only after the proper decision is taken by them. So, to drag the view of investors and other concerns basis of decision was asked and the result obtained is;

**Table 4.29: Basis of Decision Making Analysis**

S.N.	Research variable	No. of Respondents	%
A	Family Advice	2	5

B	Rumors	7	17.5
C	Own Analysis	12	30
D	Market Price	8	20
E	Following Others	11	27.5
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.7 Purpose of Investment in Share

The reasons behind the investment in shares of different companies by respondents can be summed up in the following table;

**Table 4.30: Purpose of Investment in Share Analysis**

S.N.	Research variable	No. of Respondents	%
A	Social Status	5	12.5
B	To Secure Future	4	10
C	Business Purpose	8	20
D	Above All	23	57.5
	Total	40	100

*Source: Field Survey with questionnaire*

#### 4.6.1.8 Sector of Investment Analysis

The secured sector of investment that on the view point of investors are tried to catch up in this section and the result obtained is;

**Table 4.30: Secured Sector of Investment Analysis**

S.N.	Research variable	No. of Respondents	%
A	Commercial Bank	10	25
B	Development Bank	4	10
C	Finance Company	4	10



D	Hydro Power	11	27.5
E	Trading	9	22.5
F	Other	2	5
	Total	40	100

*Source: Field Survey with questionnaire*

#### **4.6.1.9 Analysis of Free Opinions of Respondents**

Out of 10 questions about stock market only 2 questions were arisen as open-end questions. About the questions ANNEX-1 clears for the related parties. Question no. 9 is related with the major problems of Nepalese stock market and question no 10 is related with the suggestion about developing the Nepalese stock market.

Out of 40 questionnaire papers only 80% respondents replied about this questions and rest 20% respondent gave no response about these questions. So, opinions are taken here only from 80% respondents. Actually making the report as original from all the common as well as new suggestive points are presented here as follows:

**Question No. (9):** In your opinion, what are the major problems of Nepalese stock market?

*Here, respondent said:*

Lack of awareness in the people.

Lack of rules and regulation of government.

Lack of another stock exchange limited.

Annual general meeting is not timely.

Information about stock was not coming timely.

Lack of knowledge of investors and rural people.

Instable government of country.

Weak buying and selling system.

Middle man tries to cheat.

Companies are not honest.

Proper information about the listed company.

High rate of speculation.

Lack of industries.

Lack of investors.

Number of brokers and investors are very few.

Brokers are not working professionally.

There is no timely presentation of financial statement.

Less transparency.

Downward economy of the country.

In another question about Nepalese stock market development, different parties gave their suggestions which are as follows;

**Question No. (10):** In your opinion, how to develop the Nepalese stock market?

Respondent said:

- ) Proper rules and regulation of the government.
- ) Every aspect of Stock Exchange should be properly managed.
- ) Awareness of the people about stock market.
- ) Improvement of economic condition of country.
- ) Transparency.
- ) Timely presentation of financial statement.
- ) Ownership transfer process should be computerized.
- ) Professional brokers.
- ) Number of brokers and investors should increase.
- ) Establish the other stock exchange limited in the different part of the country.

- ) Information about stock should be published timely.
- ) Stable Government in the country.
- ) Strong buying and selling system.
- ) Proper information publication about listed company.
- ) End the high rate of speculation.
- ) Development of the industrial sectors.
- ) Increasing the number of foreign investors.

#### **4.6.2 Discussion with Experts**

While conducting discussion with senior officials of NEPSE about the periphery of investors awareness about investment decision, it was learnt that the reason behind frequently swing in the market price of shares is due to lack of institutional investors who can properly analyze and study the market trends before making their investment decisions. According to the officials, Nepalese stock market is dominated by retailing investors come forward to act in bullish trend. They emphasized that stability cannot be fully achieved unless rational and institutional investors come forward to participate in the secondary market. However, they agreed the fact that lately the investors have become more sensitive and professional at least in comparison to early nineties, when market was at the early stage. At the time of interview, the question has been asked about which method of analysis you adopt. Most of the experts replied that they used technical as well as fundamental analysis method of stock price behavior.

While conducting discussion program, it was found that Nepal Stock Exchange, investors and officials were at loggerheads over the cases of stock market slack, blaming each other or volatility of stock prices. Though, they have different theories to offer over the price fluctuations, the efforts to improve the domestic stock market should be done from all the stakeholders. In course of conducting the informal

discussion with many investors in the stock market, they claimed that though they made investment decision after analyzing shares, they got less than the expected return from the investment. They accused brokers and NEPSE officials of joining hands for price manipulation. They also shared the experience of sharp wealth devaluation in the past days. It was learnt that unprecedented swings in the Nepal stock exchange market index caused uproar among investors.

#### **4.7 Major findings of the study**

- ) The correlation coefficients (r) for SCBN between MPS & EPS, MPS & DPS and MPS & NWPS are -0.3636, -0.1499 and -0.2103 respectively which shows there exists low negative relation between MPS and these variables.
- ) The correlation coefficients (r) for ACEDBL between MPS & EPS, MPS & DPS and MPS & NWPS are -0.4926, -0.1996 and -0.6997 respectively which shows there exists negative relation between MPS and these variables.
- ) The correlation coefficients (r) for PFCL between MPS & EPS, MPS & DPS and MPS & NWPS are 0.5938, 0.8068 and 0.5042 respectively which shows there is positive relation between MPS and these variables.
- ) The correlation coefficients (r) for HGI between MPS & EPS, MPS & DPS and MPS & NWPS are -0.7823, 0.6692 and -0.6539 respectively which shows there exists positive relation between MPS and DPS and negative relation between MPS and EPS and NWPS.
- ) The correlation coefficients (r) for CHCL between MPS & EPS, MPS & DPS and MPS & NWPS are 0.8761, 0.8916 and 0.9491 respectively which shows there is positive relation between MPS and all other variables.
- ) The correlation coefficients (r) for UNL between MPS & EPS, MPS & DPS and MPS & NWPS are 0.9719, -0.0023 and 0.9157 respectively which shows there exists positive relation between MPS and EPS & NWPS but very low negative relation between MPS and DPS.

- ) By the analysis of overall trend of NEPSE in yearly basis it was found that the NEPSE index is increasing in recent years signaling to the growth and maturity of Capital Market. However, the C.V. is higher representing the high volatility of overall stock prices in Nepalese Capital market.
- ) While analyzing the monthly trend analysis of all nine sectors, it was found that all the sectors – Commercial Bank, Manufacturing and Processing, Hotel, Hydro Power, Trading, Insurance, Finance, Development Bank and Other were in decreasing trend on overall basis. However, it was found that the highly volatile sectors are Development Bank, Finance, Other, Hydro Power and Commercial Bank.
- ) On analyzing paired t-test for signaling factors with reference to major four events it was found that the tax increment on capital gain on Aswin 2065 played major role in fluctuation of the stock price whereas, Janaaandolon 2062/63 and the participation and leaving of UCPN-Maoist, the main leader in the government, in National Government did not bring any significant effects in the fluctuation of the stock price.
- ) By the analysis of run test it was found that;
- The change in stock price of SCB, ACEDBL, HGI, CHCL and UNL was random.
  - The change in stock price of PFCL was not random.
- ) On studying primary data the study found out following;
- Out of total respondents 25% and 25% believed that the major influencing factor of stock price is Profit/EPS and DPS respectively.
  - 50% of the respondents believed that 50-75% volatility in stock price is due to political instability.
  - 75% of the respondents said Govt. Policy is responsible for present unwanted change in stock price.

- 50% of the respondents said that investors in the Nepalese Stock Market are not aware about share transaction.
- 50% of the respondents were agreed with the statement that international environment also affects the Nepalese Stock Market.
- Only 30% of the respondents believe that investors in the Nepalese Stock Market use own analysis for decision making in investing.
- 27.5% (highest) of the respondents the most secured sector among all is Hydro Power.
- On discussion with personnel of different sectors it was concluded that most of them use technical as well as fundamental analysis in analyzing investment in stocks. And there exist manipulation in stock price by some group of players in stock market which cause unwanted and irrational volatility in stock price.

## **CHAPTER –V**

### **SUMMARY, CONCLUSION & RECOMMENDATION**

In this chapter the concrete view of the overall research is summed up, conclusions are presented on the basis of the major findings made in the preceding chapter and the points of recommendation are presented so that the way to improve the overall stock market and the remedies to work on behalf of volatile behavior of Nepalese Securities Market can be drawn by the concerned authorities.

#### **5.1 Summary**

This research is especially designed to find out the major causes responsible for volatility of stock price in secondary market, their relationship with market price of the stock and to find out the overall behavior of NEPSE, only stock price indicator of Nepal, and the impact of major signaling effects over it.

According to the nature and objective of the study, primary data as well as secondary data has been used to meet the objective. In course of finding out the facts related to the problem mentioned above, correlation analysis has done to find out the relation of MPS with major financial indicator leading the change on it (i.e. EPS, DPS and NWPS) in relation to sampled companies from various sectors in the first step. It clearly presents that to some extent these indicators are also responsible for the change in stock price in the Nepalese Stock Market.

The analysis made taking consideration to the overall NEPSE index and sector wise NEPSE index representing different sectors of the economy showed that sector wise as well as overall stock market of Nepal is much more volatile and there exists risk factor in the market. Similarly insurance, banking and other companies are leading the price in the stock market since a year.

For measuring the signaling effect on the stock market, paired t-test formula of hypothesis had been adopted from the hypothesis; it shows that to some extent

signaling factors also play role in determining the NEPSE index. The change in price of all sampled companies except PFCL was random change.

From the primary data analysis, factors of volatility of the stock price in NEPSE are identified. Such internal factors affecting the share price are earnings, dividend paid, net worth and risk associated with the company. Similarly, there are other environmental factors affecting the market price of share. Such environment factors affecting the share price are Nepal Rastra Bank's guidelines, information, demand and supply, time of AGM, political stability, Government Policies, bonus shares etc are the major factors for the sensitivity of the stock price in NEPSE. Nepalese Stock Market is in developing stage.

## **5.2 Conclusion**

From the above research study, we can conclude that the Nepalese Stock Market is in the developing stage. The study concludes that there is a gap between the theory and practice of investment in Nepalese stock market due to the lack of proper analysis of stock market for the smooth operation of the secondary market. Stock market was not properly analyzed for smooth operation of secondary market. Moreover, it can also be concluded that the investment is made without the proper identification and analysis so that the true/fair view of the company's position cannot be reflected by its stock price.

It can also be concluded that the market is growing day by day and the future is full of opportunity from investor point of view. However, small market size has made it vulnerable to manipulation and price rigging. Some investors tend to avoid stock market because they do not have options to invest in securities according to their risk-return preference. Similarly, firms shun it because stock market is less reliable source of raising funds for them. Due to this financial system in Nepal has remained basically bank dominated. The market seems gaining to some extent the confidence of investors. A scarcity of floating stock prevails in the market. Professionalism is still lacking in the service of investors and investment management. A system of preponderance of speculation trading is guessed to be prevailed where the primary



motive is to derive benefit from short term price fluctuations. It appears that a very small fraction of transaction represents purchases/sales by genuine investors. The rest are driven mainly by the speculative motive. The corporate sector is still reluctant on disseminating information timely. The kind of securities trading in the market is confined only to ordinary and preference shares. These are various major problems observed in the market nowadays.

In course of discussing with concerned with stock market it can be concluded that most of the investors are complaining that the market makers, brokers and Nepal Stock Exchange Limited staff's are making coalition for fraudulent activities towards investors. And to some extent Govt. and governing authorities are also negligent for the betterment or improvement of overall market. Stock market is seeing bearish trend nowadays because during this period most of the listed companies are announcing dividend and issuing right shares also. However, it can be said from discussion with experts that political and Govt. instability is much more responsible for this. There seem no logical reasons for the declining of NEPSE index. The study also concluded that there is hand of signaling factors to play role for fluctuating NEPSE index.

Finally, the study of stock market behavior is a very useful subject matter if properly analyzes for the development of stock market.

### **5.3 Recommendation**

On the way of finalizing this research work many weaknesses, negligence, avoidance, interruptions, misleading and rigidity for fluent operation and development of Nepalese Stock Market were identified. Here are some points of commendations by the adoption of which individuals can gather a lot of ideas about improving the present situation of capital market and even the overall market growth and improvement can be achieved;

- One of the key points to improve the capital market is to enact and implement the clear-cut policy and guideline by the Nepalese Government so that no confusion and hesitation should be felt by investor about the future of the market. And the

political influence should be totally removed in the stock market related issues, policies and other aspects.

- For smooth operation and growth of the market Central Depository System is crucial and decentralization of trading system over the country is essential. So, it is recommended to take steps on such strategies by the Government.
- Increment on awareness amongst the general public about the capital market, regarding nature of risk and return, through promotions, campaigns, seminars, publications and programs in FM/TV etc. are necessary.
- Foreign investors (individual as well as institutional investors) should be encouraged and promoted to invest in the Nepalese stock market to improve not only the stock market but also the overall economy of the country.
- Economic development of every large country depends upon the industrial advancement of various types and classes of industries and development of stock market, on the other hand depends upon the development of industries. Government therefore should encourage and consider the industrial development in the country.
- It is apparent that, seeing the investment priority of investors' majority of investors was found attached with banking sectors. Diversification of investment in other sector should be done by taking action against the unproductive manufacturing, trading, insurance and other. The companies which are not performing their activities should be removed from the list of Nepal security exchange Ltd. So that the unproductive sectors gave the productive results by running efficient way.
- Signaling factors should be analyzed so that future movements of price can be predicted from the side of analyst and form the side of investors.
- The study of stock market behavior should be done in periodic manner so that proper results can be drawn for betterment of stock market from the side of NEPSE.

- The role of market players in the stock market should be made effective in promoting capital market on the country by giving proper training and adopting changed environment with modern tools and technique.
- The stock market lacks the existence of sophisticated investors, it is recommended to regulatory bodies to carry out programs using various media and spot program to inform and attract the potential investors in investing into shares and to create awareness.

From the study it is a fact that much work remains to be done, a growing body of evidence suggests that stock market is not merely casinos where players come to place bets. Stock markets provide services to the non-financial economy that are crucial for long term economic development. The ability to trade securities easily may facilitate investment, promote the efficient suggestion that stock market price encourages or at least strongly forecasts corporate investment even though much of this investment is financed through retained earnings, bank loans rather than equity issues.

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## ANNEX- I

### Questionnaire:

**(1) What is the major influencing factor for the stock price?**

- (a) Company's Profit ( ) (b) Company's NWPS  
( )  
(c) Company's Growth/Future ( ) (d) Company's DPS  
( )  
(e) Signaling Factor ( ) (e) Above All  
( )

**(2) Do you agree with the statement '*Political instability is the major reason for crash in Capital Market*'?**

- (a) 0-25% ( ) (b) 25-50% ( )  
(c) 50-75% ( ) (d) 75-100% ( )

**(3) Does international environment affects the Nepalese Stock Market?**

- (a) Yes ( ) (b) No  
( )  
(c) Don't know ( )

**(4) Is Government's Policy responsible for unwanted change in stock price?**

- (a) Yes ( ) (b) No ( )  
(c) Don't Know ( )

**(5) Do you think investors in the Nepalese stock market are aware of share transaction?**

- (a) Yes ( ) (b) No ( )  
(c) Can't say ( )

**(6) On which basis do you make decisions to invest in shares in the secondary market?**

- (a) Family Advice ( ) (b) Rumors ( )
- (c) Own Analysis ( ) (d) Market price ( )
- (e) Following Others ( )

**(7) For what purpose do you want to own shares of a company?**

- (a) Social Status ( ) (b) To secure future ( )
- (c) Business Purpose ( ) (d) Above all ( )

**(8) Which sector of investment do you think secured one?**

- (a) Commercial Bank ( ) (b) Dev. Bank ( )
- (c) Finance Company ( ) (d) Hydro Power ( )
- (e) Trading ( ) (f) Other ( )

**(9) In your opinion, what are the major problems of Nepalese stock market?**

- (a) .....
- (b) .....
- (c) .....

**(10) In your opinion, how to develop the Nepalese Stock Market?**

- (a) .....
- (b) .....
- (c) .....

Name:



Address (office/residence):

.....

Signature

## ANNEX-II

### Name of Listed Companies in NEPSE

S.N.	Name of Companies	S.N.	Name of Companies
	<b>Commercial Banks</b>	42	Taragaon Regency Hotel
1	Nabil Bank Ltd.	43	Oriental Hotel Ltd.
2	Nepal Investment Bank Ltd.		<b>Others</b>
3	Standard Chartered Bank Ltd.	44	Nepal Film Dev.Co. Ltd.
4	Himalayan Bank Ltd.	45	Nepal Doorsanchar Com.
5	Nepal SBI Bank Limited		<b>Hydro Power</b>
6	Nepal Bangladesh Bank Ltd.	46	National Hydro Power Co.
7	Everest Bank Ltd	47	Butwal Power Co. Ltd.
8	Bank of Kathmandu	48	Chilime Hydro power Co.
9	Nepal Industrial & Co.Bank		<b>Tradings</b>
10	Machhachapuchhre Bank Ltd	49	Salt Trading Corporation
11	Laxmi Bank Limited	50	Bishal Bazar Co. Ltd.
12	Kumari Bank Ltd	51	Nepal Trading Ltd.
13	Lumbini Bank Ltd.	52	Nepal Welfare Company Ltd.
14	Nepal Credit & Com. Bank		<b>Insurance</b>
15	Siddhartha Bank Limited	53	Nepal Insurance Co.Ltd.
16	NMB Bank Limited	54	Rastriya Beema Sansthan
17	Development Credit Bank Ltd.	55	National Life
18	Global Bank Ltd.	56	Himalayan Gen.Insu. Co.Ltd.
19	KIST Bank Limited	57	United Insurance
20	Citizen Bank International Ltd.	58	Everest Insurance Co. Ltd.
21	Bank of Asia Nepal Ltd.	59	Premier Insurance co. Ltd.
	<b>Manufacturing and Processing</b>	60	Neco Insurance Co.
22	Bottlers Nepal Ltd.(Balaju)	61	Alliance Insurance Co. Ltd.
23	Nepal Lube Oil Ltd.	62	Sagarmatha Insurance Co.Ltd
24	Nepal Vanaspati Ghee Udhog Ltd	63	NB Insurance Co. Ltd.
25	Raghupati Jute Mills Ltd.	64	Nepal Life Insurance Co. Ltd.
26	Butwal Spinning Mills Ltd.	65	Life Insurance Co. Nepal
27	Gorakhakali Rubber Udhog Ltd.	66	Prudential Insurance Co.
28	Jyoti Spinning Mills Ltd (ord.)	67	Lumbini General Insurance
29	Arun Vanaspati Udhog Ltd.	68	Shikhar Insurance Co. Ltd.
30	Bottlers Nepal (Terai)Ltd.	69	Siddhartha Insurance Com.
31	Harisiddhi Brick and Tile Fac.Ltd.		<b>Finance</b>
32	Birat Shoe Ltd.(Ord.)	70	Nepal Finance and Saving
33	Uniliver Nepal Ltd.	71	NIDC Capital Markets Ltd.
34	Nepal Khadya Udhog Ltd.	72	National Finance Co. Ltd.
35	Shree Bhrikuti Pulp & Paper Ltd	73	Nepal Share Markets Ltd.
36	Fluer Himalayan Limited	74	Annapurna Finance Co.Ltd.
37	Shree Ram Sugar Mills Ltd	75	Kathmandu Finance Limited.
38	Nepal Bitumin and Barrel Udyog	76	Peoples Finance Limited.
39	Himalayan Distillery Ltd.	77	Union Finance Co. Ltd.
	<b>Hotels</b>	78	Citizen Investment Trust

40	Yak and Yeti Hotel Ltd.(Ord.)	79	Nepal Aawas Bikas Beeta Co.
41	Soaltee Hotel Ltd.	80	Narayani Finance Limited
81	Yeti Finance Company Ltd.	121	ICFC Bittiya Santha Ltd.
82	Gorkha Finance Ltd.	122	Nepal Express Finance Ltd.
83	Samjhana Finance Co. Ltd.	123	Kuber Mer. Finance Ltd.
84	Universal Finance Ltd.	124	Pravu Finance Ltd.
85	Nepal Housing & Merchant Fin.	125	Sagarmatha Mer. Bank. &
86	General Finance Ltd.	126	Lord Buddha Financial Ints.
87	Maha Laxmi Finance Ltd.	127	Kaski Finance Ltd.
88	Lalitpur Finance Ltd.	128	Mechant Finance Ltd.
89	Goodwill Finance Co. Ltd.	129	Reliable Investment Bittiya
90	Paschimanchal Finance Co. Ltd	130	Sikhar Bittiya Santha Ltd.
91	Pokhara Finance Ltd.		<b>Development Bank</b>
92	Lumbini Finance Ltd.	131	Nepal Industrial Dev. Corp.
93	Siddhartha Finance Limited	132	Nepal Development Bank
94	Alpic Everest Finance Co. Ltd.	133	Nirdhan Utthan Bank Ltd.
95	United Finance Ltd	134	Chhimek Vikash Bank Ltd.
96	International Leasing & Fin. Co.	135	Paschimanchal Bikash Bank
97	Shree Investment Finance Co. Ltd	136	Diprox Development Bank
98	Central Finance Co. Ltd.	137	Gandaki Dev. Fin. Inst.
99	Nepal Shree Lanka Mer. Bank	138	Business Dev. Fin. Inst.
100	Premier Finance Co. Ltd	139	Siddhartha Vikash Bank Ltd
101	Nava Durga Finance Co.Ltd.	140	Bhrikuti Vikash Bank Ltd.
102	Butwal Finance Ltd	141	Sanima Vikash Bank Ltd.
103	Janaki Finance Ltd.	142	Narayani Industrial Dev.
104	Standard Finance Ltd.	143	Bageshori Dev. Bank Ltd.
105	Om Finance Ltd.	144	Sahayogi Vikas Bank Ltd.
106	Cosmic Mer.Bank & Fin.	145	Gurkha Vikas Bank Ltd.
107	Fewa Finance Co. Ltd.	146	Annapurna Bikas Bank Ltd.
108	World Merchant Bank Ltd	147	Swabalamban Bikas Bank
109	Birgunj Finance Ltd	148	Ace Development Bank Ltd.
110	Capital Mer. Bank & Fin	149	Himchuli Bikas Bank Ltd.
111	Everest Finance Ltd,	150	Excel Development Bank
112	Prudential Bittiya Sanstha	151	Malika Bikas Bank Ltd.
113	Shrijana Finance(Bittiya Sanstha)	152	Biratlaxmi Bikas Bank Ltd.
114	Royal Mer. Bank.& Fin	153	Infrastructure Dev. Bank Ltd.
115	Guheyshwori Mer. Bank. Fin	154	NDEP Bank Ltd.
116	IME Financial Institution	155	Subeksha Bikas Bank Ltd.
117	Bhajuratna Fin.& Sav. Co. Ltd.	156	Triveni Bikas Bank Ltd.
118	Patan Finance Ltd.	157	Clean Energy Dev. Bank Ltd.
119	Imperial Financial Inst. Ltd.	158	Pashupati Development Bank
120	Civil Merc.Bittiya Santha Ltd.	159	Purbanchal Gramin Bik. Bank



## ANNEX-III

### Values of t-cal:

#### For Janaaandolan

#### 1. (May/Jun2006)

S.No.	Sector	NEPSE Index on:		d=x-y	(d- $\bar{d}$ )	(d- $\bar{d}$ ) <sup>2</sup>
		Apr/May2006 (x)	Jun/Jul2006 (y)			
1	Commercial bank	423.04	422.81	0.23	7.93	63.04
2	Manu. & Processing	292.34	297.41	-5.07	2.63	6.92
3	Hotel	181.14	180.77	0.37	8.07	65.12
4	Trading	148.11	148.11	0.00	7.70	59.29
5	Insurance	356.37	370.33	-13.96	-6.26	39.19
6	Finance	254.7	259.27	-4.57	3.13	9.80
7	Development Bank	269.83	278.16	-8.33	-0.63	0.40
8	Other	363.49	393.76	-30.27	-22.57	509.25
				-61.60		75.04

$$\bar{d} = -61.60/8 = -7.70$$

$$Sd = \sqrt{\{1/(n-1) * \sum (d - \bar{d})^2\}}$$

$$= 10.37$$

$$t\text{-Cal} = \bar{d} / (Sd/\sqrt{n})$$

$$= |-2.098|$$

$$= 2.098$$

#### 2. For Lead of Govt by Maoists (Aug 2008)

S.No	Sector	NEPSE Index on:		d=x-y	(d- $\bar{d}$ )	(d- $\bar{d}$ ) <sup>2</sup>
		Jul/Aug2008 (x)	Sep/Oct2008 (y)			
1	Commercial bank	1143.62	986.45	157.17	129.46	16759
2	Manu. & Processing	426.25	437.31	-11.06	-38.77	1503
3	Hotel	349.42	359.29	-9.87	-37.58	1412
4	Other	769.21	811.81	-42.60	-70.31	4943
5	Hydro Power	1297.36	1139.7	157.66	129.95	16887
6	Trading	203.14	214.46	-11.32	-39.03	1523
7	Insurance	820.57	822.48	-1.91	-29.62	877
8	Finance	1193.74	1211.81	-18.07	-45.78	2095
9	Development Bank	1452.53	1423.17	29.36	1.65	2.72
				249.36		46004

$$\bar{d} = 249.36/9 =$$

27.71

$$Sd = \sqrt{\{1/(n-1) * \sum (d - \bar{d})^2\}}$$

$$= 75.83$$

$$t\text{-Cal} = \bar{d} / (Sd / \sqrt{n})$$

$$= 1.097$$

### 3. For Capital Gain Increment (Sep 2008)

S.No	Sector	NEPSE Index on:		d=x-y	(d- $\bar{d}$ )	(d- $\bar{d}$ ) <sup>2</sup>
		Jul/Aug2008 (x)	Oct/Nov2008 (y)			
1	Commercial bank	1143.62	800.35	343.27	230.26	53021.06
2	Manu. & Processing	426.25	432.79	-6.54	-119.55	14292.00
3	Hotel	349.42	364.3	-14.88	-127.89	16375.85
4	Other	769.21	766.01	3.20	-109.81	12058.22
5	Hydro Power	1297.36	1054.18	243.18	130.17	16944.23
6	Trading	203.14	220.54	-17.40	-130.41	17006.77
7	Insurance	820.57	780.07	40.50	-72.51	5257.76
8	Finance	1193.74	1029.67	164.07	51.06	2607.32
9	Development Bank	1452.53	1190.84	261.69	148.68	22105.74
				1017.09		159600.00

$$\bar{d} = 1017.09/9 = 113.01$$

$$Sd = \sqrt{\{1/(n-1) * \sum (d - \bar{d})^2\}}$$

$$= 141.27$$

$$t\text{-Cal} = \bar{d} / (Sd / \sqrt{n})$$

$$= 2.40$$

### 4. For Govt. Renounce by Maoists (May 2009)

S.No	Sector	NEPSE Index on:		d=x-y	(d- $\bar{d}$ )	(d- $\bar{d}$ ) <sup>2</sup>
		Mar/Apr2009 (x)	May/Jun2009 (y)			
1	Commercial bank	662.71	696.78	-34.07	-35.14	1234.93
2	Manu. & Processing	428.86	434.32	-5.46	-6.53	42.64
3	Hotel	361.66	369.35	-7.69	-8.76	76.73
4	Other	616.83	646.19	-29.36	-30.43	925.77
5	Hydro Power	865.88	861.22	4.66	3.59	12.88
6	Trading	214.08	281.78	-67.70	-68.77	4729.51
7	Insurance	658.71	646.43	12.28	11.21	125.66
8	Finance	761.59	732.86	28.73	27.66	765.08

9	Development Bank	840.9	732.62	108.28	107.21	11493
				9.67		19407

$$\bar{d} = 9.67/9 = 1.07$$

$$Sd = \sqrt{\{1/(n-1) * \sum(d - \bar{d})^2\}} = 49.25$$

$$t\text{-Cal} = \frac{\bar{d}}{(Sd/\sqrt{n})} = 0.065$$

## ANNEX-IV

### Calculation of Mean, S.D., C. V., Correlation Coefficient, Coefficient of Determination and Probable Error:

#### 1. For SCBN

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)	a*b	a*c	a*
2004/5	2345	143.14	120	422.38	335663.30	281400.00	
2005/6	3775	175.84	140	468.22	663796.00	528500.00	
2006/7	5900	167.37	130	512.12	987483.00	767000.00	
2007/8	6830	131.92	130	401.52	901013.60	887900.00	
2008/9	6010	109.99	100	327.53	661039.90	601000.00	
<b>Total</b>	<b>24860</b>	<b>728.26</b>	<b>620</b>	<b>2131.77</b>	<b>3548995.80</b>	<b>3065800.00</b>	<b>10</b>
<b>Mean = <math>\sum X/n</math></b>	4972.00	145.65	124.00	426.35			
<b>S.D. = <math>\sqrt{[\sum X^2/n - (\sum X/n)^2]}</math></b>	1656.79	23.87	13.56	62.46			
<b>C.V. = <math>S.D./S.D.*100</math></b>	33.32	16.39	10.94	14.65			

Here, n = 5

Now, Correlation Coefficient (r) = 
$$\frac{n\sum ab - \sum a * \sum b}{\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}}$$

Coefficient of Determination =  $r^2$

Probable Error (P.E.) =  $0.6745 (1-r^2) / \sqrt{n}$

Therefore,

Variable	r	r <sup>2</sup>	Probable Error
<b>r<sub>ab</sub></b>	-0.3636	0.1322	0.2618
<b>r<sub>ac</sub></b>	-0.1499	0.0225	0.2949
<b>r<sub>ad</sub></b>	-0.2103	0.0442	0.2883

#### 2. For ACEDBL

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)	a*b	a*c	a*
2004/5	251	18	0	179	4518.00	0.00	449
2005/6	320	27.94	42.11	201	8940.80	13475.20	643
2006/7	459	6.71	5.26	112	3079.89	2414.34	514
2007/8	856	12.96	10.53	122	11093.76	9013.68	1044
2008/9	588	6.92	5.5	108	4068.96	3234.00	635



<b>Total</b>	<b>2474</b>	<b>72.53</b>	<b>63.4</b>	<b>722</b>	<b>31701.41</b>	<b>28137.22</b>	<b>3285</b>
<b>Mean = <math>\sum X/n</math></b>	494.80	14.51	12.68	144.40			
<b>S.D. = <math>\sqrt{[\sum X^2/n - (\sum X/n)^2]}</math></b>	214.68	7.92	15.09	38.15			
<b>C.V. = S.D./S.D.*100</b>	43.39	54.58	118.99	26.42			

Here, n = 5

Now, Correlation Coefficient (r) = 
$$\frac{n\sum ab - \sum a * \sum b}{\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}}$$

Coefficient of Determination =  $r^2$

Probable Error (P.E.) =  $0.6745 (1-r^2) / \sqrt{n}$

Therefore,

<b>Variable</b>	<b>r</b>	<b>r<sup>2</sup></b>	<b>Probable Error</b>
<b>r<sub>ab</sub></b>	-0.4926	0.2427	0.2284
<b>r<sub>ac</sub></b>	-0.1996	0.0399	0.2896
<b>r<sub>ad</sub></b>	-0.6997	0.4896	0.1540

### 3. For PFCL

<b>Year</b>	<b>MPS(a)</b>	<b>EPS(b)</b>	<b>DPS(c)</b>	<b>NWPS(d)</b>	<b>a*b</b>	<b>a*c</b>	<b>a*d</b>
<b>2004/5</b>	100	17.62	10	128.8	1762.00	1000.00	12880.00
<b>2005/6</b>	137	9.72	10	83.14	1331.64	1370.00	11390.18
<b>2006/7</b>	127	13.14	0	130	1668.78	0.00	16510.00
<b>2007/8</b>	699	19.01	20	141.68	13287.99	13980.00	99034.32
<b>2008/9</b>	285	13.54	10	122.41	3858.90	2850.00	34886.85
<b>Total</b>	<b>1348</b>	<b>73.03</b>	<b>50</b>	<b>606.03</b>	<b>21909.31</b>	<b>19200.00</b>	<b>174701.35</b>
<b>Mean = <math>\sum X/n</math></b>	269.60	14.61	10.00	121.21			
<b>S.D. = <math>\sqrt{[\sum X^2/n - (\sum X/n)^2]}</math></b>	224.19	3.34	6.32	20.02			
<b>C.V. = S.D./S.D.*100</b>	83.16	22.84	63.25	16.52			

Here, n = 5

Now, Correlation Coefficient (r) = 
$$\frac{n\sum ab - \sum a * \sum b}{\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}}$$

Coefficient of Determination =  $r^2$

Probable Error (P.E.) =  $0.6745 (1-r^2) / \sqrt{n}$

Therefore,

Variable	r	r <sup>2</sup>	Probable Error
r <sub>ab</sub>	0.5938	0.3526	0.1953
r <sub>ac</sub>	0.8068	0.6510	0.1053
r <sub>ad</sub>	0.5042	0.2542	0.2250

#### 4. For HGI

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)	a*b	a*c	a*d
2004/5	277	36.7	0	271.61	10165.90	0.00	75235.9
2005/6	270	39.9	0	311.08	10773.00	0.00	83991.6
2006/7	300	25.12	5.79	328.55	7536.00	1737.00	98565.0
2007/8	345	10.61	5.26	160.29	3660.45	1814.70	55300.0
2008/9	285	15.1	5	205	4303.50	1425.00	58425.0
<b>Total</b>	<b>1477</b>	<b>127.43</b>	<b>16.05</b>	<b>1276.53</b>	<b>36438.85</b>	<b>4976.70</b>	<b>371517.6</b>
<b>Mean = <math>\sum X/n</math></b>	295.40	25.49	3.21	255.31			
<b>S.D. = <math>\sqrt{[\sum X^2/n - (\sum X/n)^2]}</math></b>	26.73	11.51	2.63	63.72			
<b>C.V. = <math>S.D./S.D.*100</math></b>	9.05	45.18	82.03	24.96			

Here, n = 5

Now, Correlation Coefficient (r) = 
$$\frac{n\sum ab - \sum a * \sum b}{\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}}$$

Coefficient of Determination = r<sup>2</sup>

Probable Error (P.E.) = 0.6745 (1-r<sup>2</sup>) /  $\sqrt{n}$

Therefore,

Variable	r	r <sup>2</sup>	Probable Error
r <sub>ab</sub>	-0.7823	0.6120	0.1170
r <sub>ac</sub>	0.6692	0.4478	0.1666
r <sub>ad</sub>	-0.6539	0.4276	0.1727

#### 5. For CHCL

Year	MPS(a)	EPS(b)	DPS(c)	NWPS(d)	a*b	a*c	a*d
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<b>2004/5</b>	390	52.83	25	203.94	20603.70	9750.00	799
<b>2005/6</b>	400	69.61	20	204.75	27844.00	8000.00	819
<b>2006/7</b>	940	91.19	30	266.22	85718.60	28200.00	2502
<b>2007/8</b>	1562	93.12	35	324.33	145453.44	54670.00	5066
<b>2008/9</b>	1296	98	40	350	127008.00	51840.00	4536
<b>Total</b>	<b>4588</b>	<b>404.75</b>	<b>150</b>	<b>1349.24</b>	<b>406627.74</b>	<b>152460.00</b>	<b>13718</b>
<b>Mean = <math>\sum X/n</math></b>	917.60	80.95	30.00	269.85			
<b>S.D. = <math>\sqrt{[\sum X^2/n - (\sum X/n)^2]}</math></b>	470.15	17.11	7.07	59.98			
<b>C.V. = <math>S.D./S.D.*100</math></b>	51.24	21.13	23.57	22.23			

Here,  $n = 5$

Now, Correlation Coefficient (r) = 
$$\frac{n\sum ab - \sum a * \sum b}{\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}}$$

Coefficient of Determination =  $r^2$

Probable Error (P.E.) =  $0.6745 (1-r^2) / \sqrt{n}$

Therefore,

<b>Variable</b>	<b>r</b>	<b>r<sup>2</sup></b>	<b>Probable Error</b>
<b>r<sub>ab</sub></b>	0.8761	0.7676	0.0701
<b>r<sub>ac</sub></b>	0.8916	0.7949	0.0619
<b>r<sub>ad</sub></b>	0.9491	0.9009	0.0299

## 6. For UNL

<b>Year</b>	<b>MPS(a)</b>	<b>EPS(b)</b>	<b>DPS(c)</b>	<b>NWPS(d)</b>	<b>a*b</b>	<b>a*c</b>	
<b>2004/5</b>	1631	205.32	400	240.28	334876.92	652400.00	3
<b>2005/6</b>	2500	258.66	250	244.28	646650.00	625000.00	0
<b>2006/7</b>	3400	285.71	275	255.01	971414.00	935000.00	8
<b>2007/8</b>	4100	364	350	270	1492400.00	1435000.00	1
<b>2008/9</b>	4250	390	374	287.06	1657500.00	1589500.00	11
<b>Total</b>	<b>15881</b>	<b>1503.7</b>	<b>1649</b>	<b>1296.63</b>	<b>5102840.92</b>	<b>5236900.00</b>	<b>41</b>
<b>Mean = <math>\sum X/n</math></b>	3176.20	300.74	329.80	259.33			
<b>S.D. = <math>\sqrt{[\sum X^2/n - (\sum X/n)^2]}</math></b>	990.09	67.93	57.72	17.27			
<b>C.V. = <math>S.D./S.D.*100</math></b>	31.17	22.59	17.50	6.66			

Here,  $n = 5$

Now, Correlation Coefficient (r) = 
$$\frac{n\sum ab - \sum a * \sum b}{\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}}$$

$$\sqrt{[n\sum a^2 - (\sum a)^2]} \sqrt{[n\sum b^2 - (\sum b)^2]}$$

Coefficient of Determination =  $r^2$

Probable Error (P.E.) =  $0.6745 (1-r^2) / \sqrt{n}$

Therefore,

<b>Variable</b>	<b>r</b>	<b>r<sup>2</sup></b>	<b>Probable Error</b>
<b>r<sub>ab</sub></b>	0.9719	0.9446	0.0167
<b>r<sub>ac</sub></b>	-0.0023	0.0000	0.3016
<b>r<sub>ad</sub></b>	0.9157	0.8386	0.0487

## ANNEX-V

### Run Test Analysis

Monthly market prices from Jul/Aug2007 to Jun/Jul2009

Date	SC B	Sig n	Run s	ACEDB L	Sign	Run s	PFCL	Sig n	Run s	HGI	Sig n	Run s
Jul/Aug07	6200	+	1	491	+	1	127	+	1	330	+	1
Aug/Sep07	7010	+		580	+		127	0		330	0	
Sep/Oct07	7938	+		754	+		127	0		330	0	
Oct/Nov07	8700	+		865	+		127	0		336	+	
Nov/Dec07	5260	-	2	1320	+		127	0		336	0	
Dec/Jan08	6745	+	3	1260	-		127	0		336	0	
Jan/Feb08	6100	-	4	1108	-	2	141	+		336	0	
Feb/Mar08	4850	-		1086	-		139	-	2	336	0	
Mar/Apr08	5200	+	5	893	-		145	+		336	0	
Apr/May08	5500	+		899	+	3	255	+		336	0	
May/Jun08	6120	+		909	+		413	+	3	342	+	
Jun/Jul08	6830	+		856	-	4	699	+		345	+	
Jul/Aug08	8526	+		1172	+	5	1050	+		345	0	
Aug/Sep08	7858	-	1270	+	843		-	4	345	0		
Sep/Oct08	7750	-	6	1260	-		830		-		360	+
Oct/Nov08	5090	-		1030	-	6	852	+	5	365	+	
Nov/Dec08	4875	-		1000	-		380	-	6	375	+	
Dec/Jan09	4733	-		804	-		392	+	7	375	+	
Jan/Feb09	4610	-		850	+	7	320	-	8	368	-	
Feb/Mar09	4600	-	855	+	420		+	9	365	-	2	
Mar/Apr09	469	+	7	835	-	8	324	-	10	358	-	

09	9										
Apr/May09	4825	+		835	0		315	-		358	0
May/Jun09	5575	+		560	-		324	+	11	300	-
Jun/Jul09	6010	+		588	+	9	285	-	12	285	-

*Source: NEPSE  
Annual Report for 2007/8 and 2008/9*