## CHAPTER-I

## INTRODUCTION

### 1.1 General Background

Financial Market is the place where the financial instrument, shares, bonds, debentures etc, are traded. It consists of series of channels through which savings of the community are made available to users of those funds. It provides a forum in which suppliers and demander of funds can transact business funds directly (Gitman, 1988:30-31). Financial market constitutes money market and capital markets. Money market is created by a suppliers and demanders of short term funds with maturities of less than year. Capital market is created by a suppliers and demanders of long-term funds with maturities of more than one year. The capital markets consist of the primary market, where new issue are distributed to investors, and the secondary market, where existing securities are traded. Moreover the secondary market is the financial market for trading of securities that have already been issued in an initial private or public offering. Alternatively, secondary market can refer to market for any kind of used goods. The market that exists in a new security just after the new issue is often referred to as the aftermarket. once a newly issued stock in listed on a stock exchange, investors and spectaculars can easily trade on the exchange as market makers provide bids and offers in new stock (Wikipedia, the free encyclopedia).

A stock market, or (equity market), is a private or public market for the trading of company stock and derivatives of company stock at an agreed price, these are securities listed on a stock exchange as will as those only traded privately. The stocks are listed and traded on stock exchanges which are entities a corporation or mutual
organization specialized in the business of bringing buyers and sellers of stocks and securities buyers. The size of the stock market is estimated at about $\$ 51$ trillions. The world derivatives market has been estimated at about $\$ 480$ trillions face or nominal value, 30 times the size of the U.S. economy and 12 times the size of entire world economy.

Generally brokers are the backbone of stock market growth as they perform primary role in exchange of commission. Capital market is the market for long term borrowing and lending. It is concerned with long-term finance. It refers to the links between lenders and borrowers of funds arranging a fund transfer process to seek each other benefits. It consists of series of channels through which saving of the community are made available for industrial and commercial enterprises and public authorities. So it is vital concept of economic development. Establishment of security exchange center in 1976 developed the concept of capital market. Negligible number of listed company and their trading, absence of professional brokers, early stage of growth and limited movement of investing people etc characterized it. Share or stock market is major component of the securities market. It is the one form of secondary market. Stock market is a Place where shares of listed companies are traded and transferred from one hand to another at a fair price through the organized brokerage system. It is the medium, which bridges the corporate sector investors to individual or corporate sector saver. The stock market is a financial market, which probably has the greater glamour and is perhaps least understand. The efficient uses require a well functioning capital market to facilitate the process (Mahat, 1981:30-31).

Hence it creates and enhances liquidity in securities. As government opened and brought broad financial policies in the process economic liberalization, the privatization of public entities have been started, various financial and insurance companies in the private sector are established with local and foreign investments. These companies have to issue some of their shares to general public. Thus to give momentum a liquid market for shares, a strong competitive secondary market is necessary. In order to make the public issue more transparent and to facilitate buying and selling securities in the secondary market, the government has framed laws, by laws in this regard, and established Nepal stock exchange and also securities exchange board, which can be considered as the favorite steps towards the development of capital market in Nepal.

### 1.1.1 Development of Capital Market in Nepal

The history of security market began with the floatation of shares by Biratnagar jute mills ltd and Nepal bank ltd in 1937. The ownership of shares was only within Rana family. Subsequently the development of capital market remained static. Almost two and half decades later the introduction of the company act in 1964, first issuance of government bond in 1964 and establishment of security exchange center ltd. In 1976 provides foundation stone for the institutional development of the securities market in Nepal. New York stock exchange was the first stock market in the history of investment literature. The US Government issued debt certificates in 1790, then the market for securities expanded greatly and trading become more active since then America, Italy and other countries gradually followed such a device for raising capital. But stock market in Nepalese context remained like snail pace. Only after the restoration of democracy in 1990 there were changes in Nepalese capital market such
as listing of shares in stock exchange and their daily trading in the secondary market through institutional brokerage system. Modern banking practices are of recent origin in Nepal. "Tejarath Adda" can be considered as the father of modern banking institution in Nepal. The history of commercial bank in Nepal starts from the establishment of Nepal bank ltd on 1937. It is the first bank in Nepal and prior to this there was no such organized banking system in the country. Subsequently another state owned commercial banks Rastriya Banijya Bank was established in 1965. The process of economic liberalization and reforms in the financial sector was introduced in 1965. The process of economic liberalization and reforms in the financial sector introduced in early 1980's has led to significant changes in banking industry. One of the significant aspects of financial sector reform was the removal of entry restriction for establishing the banking and financial institution in private sector (Mahat, L.D., 2004:4) consequently Nepal Arab Bank was established in 2041 under commercial bank act 1984. Similarly the Nepal Indosuez bank was established as a joint venture between Nepal and France plus Standard Chartered Bank Nepal Ltd on 1984. As the country followed economic liberalization there was massive entrance of foreign banks in Nepal. There are 23 commercial banks operation in Nepal including 2 public sector giants, 19 development banks, 5 rural development banks, 59 finance companies, 34 licensed cooperative societies and 44 licensed micro finance non governmental organizations.

### 1.1.2 Current Situation of Capital Market in Nepal

### 1.1.2.1 Primary Market

In the first nine months of FY 2007/08, 26 companies issued securities and mobilized capital equivalent to Rs. 4.99 billion. Of the 26 companies, 8 companies issued
ordinary shares, 17 issued right shares and one issued debentures. This amount is more than six fold compared to the amount mobilized through the issuance of securities in the same period last year. Of the issued securities, Rs.3.49 billion was mobilized through share capital and Rs. 1.5 billion through debentures. In the first nine months of FY 2006/07, only 14 companies had mobilized Rs. 702.9 million by issuing securities (www.sebonp.com).

## Table 1.1

Primary Market Trend
Rs. in million

| Particular | Fiscal Year |  |  |  |  | First Nine Months |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{2 0 0 1 / 0 2}$ | $\mathbf{2 0 0 2 / 0 3}$ | $\mathbf{2 0 0 3 / 0 4}$ | $\mathbf{2 0 0 4 / 0 5}$ | $\mathbf{2 0 0 5 / 0 6}$ | $\mathbf{2 0 0 6} / \mathbf{0 7}$ | $\mathbf{2 0 0 6 / 0 7}$ | $\mathbf{2 0 0 7 / 0 8}$ |
| $\mathbf{1}$ Capital Mobilization | 1579.9 | 696.6 | 1090.4 | 1672.3 | 2443.3 | 2295.5 | 702.9 | 4986.5 |
|  | a. Ordinary Share | 319.5 | 394.3 | 657.5 | 377.5 | 579.8 | 380.2 | 177.9 |
| b. Right Share | 621.9 | 162.2 | 70.0 | 949.3 | 1013.5 | 1265.3 | 525.0 | 3084.1 |
| c. Preference Share | 140 | - | - | - | - | 400.0 | - | - |
| d. Debentures | 360 | - | 300 | 300 | 850 | 250 | - | 1500 |
| e. Mutual Funds | - | 100 | - | - | - | - | - | - |
| f. Citizen Unit Plan | 138.5 | 40.1 | 62.9 | 45.5 | - | - | - | - |
| No of Companies <br> involved in capital <br> mobilizations | 12 | 18 | 14 | 14 | 29 | 34 | 14 | 26 |

Source: Security Board of Nepal

Figure 1.1
Primary Issued Amount


### 1.1.2.2 Secondary Market

In the first nine months of FY 2007/08, Nepal Stock Exchange Limited (NEPSE) listed 12 more companies. With this, the total number of listed companies has reached 147 in mid-April 2008. The number of listed companies was 135 at the end of FY 2006/07. Market capitalization increased by 80.74 percent and reached Rs.241.11 billion in mid-April 2008 from that of Rs. 133.39 billion a year ago.

Figure 1.2
Market Capitalization


In the first nine months of FY 2007/08, the total turnover in the NEPSE increased by 171 percent to Rs. 15.02 billion, compared to the turnover of Rs. 5.53 billion in the same period last year. Altogether, 19.16 million units of shares were traded in the first nine months of FY 2007/08 compared to 11.08 million units of shares in the same period last year.

Figure 1.3
Paid up Value and Turnover


The number of share transactions increased by 7.4 percent to 97,779 in the first nine months of FY 2007/08 compared to 91,036 share transactions in the same period last year.

Table 1.2

## Secondary Market Trend

(Rs. in million)

|  | Fiscal Year |  |  |  |  |  | First Nine Month |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $2002 / 03$ | $2003 / 04$ | $2004 / 05$ | $2005 / 06$ | $2006 / 07$ | $2006 / 07$ | $2007 / 08$ |
| Share Transaction Value | 575.8 | 2144.3 | 4507.7 | 3451.4 | 8360.1 | 5534.2 | 15000 |
| No of Share transactions <br> (in 'ooo) | 2428 | 6468 | 18434 | 12222 | 18147 | 11080 | 19159 |
| Number of Transactions | 69163 | 85533 | 106246 | 97374 | 120510 | 91036 | 97779 |
| Market Capitalization <br> Transaction as (Rs.) | 35240. <br> 4 | 41424.8 | 61365.9 | 96813.7 | 186301.3 | 133398 | 241110 |
| percentage of Market <br> Capitalization | 1.63 | 5.18 | 7.34 | 3.56 | 4.48 | 4.15 | 6.22 |
| Market Capitalization <br> as percentage of GDP | 7.2 | 7.7 | 10.4 | 14.8 | 20.6 | - | - |
| Paid-up Value of listed <br> companies | 12560. | 13404.9 | 16771.9 | 20008.6 | 21798.8 | 23963.0 | 24589. |
| 0 | 108 | 114 | 125 | 135 | 135 | 131 | 147 |
| No of listed companies | 108 |  |  |  |  |  |  |
| No of companies with <br> share transaction | 81 | 92 | 102 | 110 | 116 | 111 | 109 |
| NEPSE Index (points) | 204.86 | 222.04 | 286.67 | 386.86 | 683.95 | 494.59 | 746.69 |

Source: Securities Board of Nepal and Nepal Stock Exchange Limited, and Central
Bureau of Statistics.

The paid-up value of listed shares increased by 2.6 percent to Rs. 24.59 billion in the first nine months of FY 2007/08 compared to Rs. 23.96 billion in the same period of FY 2006/07.

NEPSE Index increased by 252.1 points to 746.69 points at the end of the first nine months of FY 2007/08 compared to 494.59 points in the same period last year.

### 1.1.2.3 Securities Board of Nepal

The Securities Board of Nepal (SEBON) has introduced Security Board Regulations 2007, Securities Market Operation Regulation 2007, and Securities Dealers (Broker, Trader and Market-maker) Regulation 2007 on November 5, 2007 and Merchant Banker Regulation on March 15, 2008.

These regulations have been formulated for the implementation of the legal rights given by the Securities Act 2006 to develop capital market, regulate and inspect important activities in the market that relate to the benefit of the investors and are under the jurisdiction of the SEBON. The SEBON has developed Securities Registration and Issue Regulation 2008, and has been submitted to the GON for final approval.

With the grants assistance from the International Development Association (IDA), the SEBON has launched a project on March 19, 2008 to establish securities data management system. This is intended to establish a central data bank related to securities by setting up internal and external direct information relation, management of data system and information related to securities. Once the project is completed, companies listed as well as making fresh issues can submit required statements electronically to the SEBON as per the Securities Act and Regulations.

Figure 1.4

NEPSE Index


With an aim to enforce regulations related to securities brokers more strictly, the SEBON organized an orientation program for the securities brokers on February 8, 2008. And an interaction program on "Capital Markets and Economic Journalists" was organized on January 04-05, 2008 jointly with the Society of Economic Journalists to make the publication and broadcasting of news related to capital markets more reliable and authentic. Further, the SEBON organized a seminar jointly with the Institute of Chartered Accountants of Nepal on February 25,2008 to inform and train the stakeholders about the International Financial Information Dissemination System (IFIDS). This is for the improvement of information dissemination practices and bringing about similarity in financial information dissemination of the country's organized sector.

In the first nine months of FY 2007/08, the programs to mechanize securities transaction in the NEPSE and installation of management information system in the Company Registrar's Office have been completed. These programs are the
components of the financial governance project and are brought into operation by the GON and coordinated by the SEBON.

### 1.1.2.4 Nepal Stock Exchange Limited

In the first nine months of FY 2007/08, the NEPSE has collected Rs. 661.2 million capital gain taxes from the share transactions in the NEPSE. The capital gain tax in the review period of FY 2007/08 is 2.5 times the capital gain tax collected in the same period last year, which was Rs. 175.0 million.

As per the provision in the Securities Listing Regulations 2006, a total number of 71 companies have been listed as category 'A' institutions in FY 2007/08. The number of companies in category A in FY 2006/07 was 66.

The NEPSE started Automated Trading System on August 24, 2007 replacing the previous open-out-cry system. With this, market has entered into the modern era as errors due to human involvement could now be avoided. Further, process has begun to enter more securities brokers into the securities market and make it more competitive as per the provision in the Securities Broker Regulations, 2007.

The NEPSE has reconstructed its website and has started to include real time information since October 2007.

The NEPSE has increased the daily transaction time in the secondary market for the benefit of small and large of number of investors. The time has been increased from 2 hours to 3 hours since December 23, 2007.

As mentioned in the budget statement of FY 2007/08 to privatize NEPSE, a concept paper regarding the transfer of government assets to listed companies, employees and locals has been prepared and submitted to the MOF. The NEPSE Newsletter has also been launched in order to disseminate information related to the securities market.

### 1.1.2.5 Securities Traders

A total of 23 brokers, 9 issue managers and 2 dealers were in the securities market for the organized trading of the securities as of mid-April 2008. There were 24 securities brokers, 9 issue managers and 2 dealers a year ago. In the first nine months of FY 2007/08, 7 securities brokers and 3 issuing brokers have been authorized to carry out transactions in the government securities.

### 1.1.2.6 Mutual Fund and Unit Scheme

The trading of NCM Mutual Fund worth Rs. 100 million is being carried out in the NEPSE since its listing in August 2003. The mutual fund is being managed by NIDC Capital Market Limited under the trustee of NIDC. Total value of the NCM Mutual fund in mid-April, 2008 was Rs. 388.94 million and per unit net assets value was Rs.39.

The CIT mobilized capital worth Rs. 2.30 billion in the first nine months of FY 2007/08 through the Citizen Unit Scheme, Gratuity Fund Scheme, Investor Accounts Scheme, Insurance Fund Scheme, Employees Savings Increment Approved Retirement Fund, Defined Contribution Pension Plan, etc. With this, the total accumulated fund of the CIT has reached Rs. 11.66 billion. Of the collected amount in
the review period, 54.44 percent was collected from Employees Savings Increment Approved Retirement Fund, 6.82 percent from Citizen Unit Scheme, 11.90 percent from Investor Account Scheme, 17.63 percent from Gratuity Fund Scheme, 9.09 percent from Insurance Fund Scheme, and 0.12 percent from Defined Contribution Pension Plan. In the first nine months of FY 2006/07, there is an additional investment of Rs.4.51 billion, after which total investment has reached Rs.11.06 billion. Of this, the investment in government securities and fixed interest bearing bonds is 75.77 percent; periodic lending is 6.51 percent, shares, preference shares and debentures of organized companies 3.39 percent and participatory lending and house credit 14.32 percent.

### 1.1.3 Challenges

To safeguard the benefit of those involved in organized securities, mutual funds and depositor services, there is a need for trustees. As there is not any arrangement regarding the regulation of trustees, this has also affected the development of capital market. In this context, there is a need to formulate a new Act relating to the trustees. Also, the establishment of Credit Rating Agency is necessary to provide information related to the securities and other market instruments besides contributing to the institutional good governance and practice of professional ratings of the institutions.

Given the present context of lacking the appropriate investment infrastructure for institutional investors, such as the CIT, EPF, and Insurance Companies, there is a need to promote and manage the issuance of debentures, mutual funds, and unit plans through the stock exchange. Furthermore, to make the capital mobilization activities
more professional and transparent, there is a need of clear regulatory measures for these institutions.

There is a need to enhance the legal strength of the SEBON and consolidate its inspection and supervisory capacity.

Given the growing concept of international listing and trading in the South Asian region, it is necessary to strengthen the professional and institutional capability of securities market and brokers. Establishment of Central Depository System (CDS) is necessary in this regard. This will spread up the securities transfer process. Further, there is a challenge to develop the securities market, to make it a better avenue for NRNs and FIIs.

Additional investors are entering the securities market, but the market prices of securities of secondary market are becoming less realistic and stable. As efforts are on to open up investment for the NRNs and FIIs, ordinary investors have to be imparted knowledge on the entry and exit in the market and create awareness about the risk and gain factors through trainings. This is necessary for the sustainable development of the market.

An efficient capital market is an essential pre- requisite of economic development of the country. Capital market comprises two markets (a) Primary Market (b) Secondary Market. Primary market is concerned with arrangement of long term funds by issue of securities, public deposit, foreign Investment etc. The secondary market deals with the arrangement of facilities for the investors for buying and selling of their assets, such
as stock exchange. The constituents of capital market in Nepal are (a) SEBON (b) NEPSE.

As a growth of public limited company in Nepal, the numbers of company listed in Nepal stock exchange for trading of securities as a secondary market. Though the number of listed companies have been remarkably increased and number of years have been elapsed since the establishment of Nepal stock exchange, how ever it is said that Nepal stock exchange is operating in its nascent stage attributed by low stock turnover, low participation companies, low level of transactions, low level of market capitalization and the volatile price situation. While viewing closely to the Nepal Stock Exchange level of the country it can be observed that the price of the shares within short span of time varies significantly. On the one hand, the stock market of developing countries is heading towards making it efficient but in our context, it is uncertainty and volatility remains constant. Thus now it is high time to study the problems existing within stock market and to recognize affecting variables that contribute to making it inefficient so as to reduce the uncertainty.

### 1.2 Focus of the Study

Stock price volatility of various listed companies in Nepalese stock market has already mentioned. Definitely it brings negative impact on Nepalese economy, low level of share transaction, small size capital market, market penetration by handful of businessman, limited number of market maker and intermediaries are the negative impacts which led Nepalese stock market to inefficiency (Adhikari, 2004).

In the focus of these types of problem, this study intends to analyze the problems and causes that led the stock market towards inefficiency. In this context, some recommendations are to be initiated so that market certainty is to be ensured and interest of the investors can be protected.

### 1.3 Statement of Problem

Many researches has been conducted in the issue of stock price volatility. They found different reasons and causes in this regards. The stock price fluctuates time to time and stock exchange reacts to the environment changes. The investors could not identify the good and bad stocks among many. Further, there is not adequate number of organized investors to analyze the information regarding the risk and return of the companies in the stock market in Nepal. In this situation any investors can not take rational investment decision (Shrestha, 2008).

Stock price volatility is a prominent issue in Nepalese stock market. Unless and until Nepalese stock market heads towards efficiency, smooth share trading cannot be achieved as well as flow of investment and business activities cannot be increased. Attention of the rational investor can be made only if the market is some how predictable. The stock market volatility and its impact in Nepalese share market are considered as the problem of this study.

### 1.4 Objectives of the Study

The major objective of this study is to analyze the stock price volatility and assess impact associated with return on common stock investment of listed commercial banks on basis of selective financial tools.

The main specific objectives of the research are as follows:

- To assess the volatility of share prices of stock market.
- To find out the impact of such price volatility.
- To identify causes and factors affecting stock price volatility.


### 1.5 Significance of the Study

Stock price volatility is one of the major burning issues in Nepalese financial sector. So, this study will have academic as well as practical significance. The finding, conclusion and recommendation of the study will have practical importance to overcome artificial price fluctuation in share trading. This study will be more importance to an individual investor to get more information about price volatility and its impact and for making strategy to invest in securities in upcoming period. The finding is also useful for corporate houses also who actively engaged in the field of trading of securities. It is also far more beneficial to the researchers and scholars to research in this topic further, who are related to Nepalese Stock Market.

### 1.6 Limitation of the Study

Findings of the study are very useful for both academicians as will as researcher. However, the present study suffers from many limitations. Cross sectional data are the major limitations to find the causal linkage between share price volatility and its possible causes. Limited variables are being used for the study. The another limitation is the sample of the secondary data. Only 17 selected listed companies are used in the calculation of stock price volatility. It may not give the accurate results. In other hand, the primary data collected with the respondents may not give accurate results because the opinion of the people may vary with time and environment changes.

### 1.7 Organization of the Study

Organized form of proposed study will include different chapters and sub-chapters.
Chapter-I Introduction: It includes background of the study, focus of the study, statement of the problem, objective of the study, significance of the study, limitation of study and chapter scheme.

Chapter-II Review Of Literature: This chapter includes the review of books, articles, journals, reports, reports, theses, researches and other relevant materials.

Chapter-III Research Methodology: It covers on research design, population and sample, source of data, data collection procedure, analytical tools etc.

Chapter-IV Presentation and Analysis of Data: This chapter attempts to analyze and evaluate the both primary and secondary data of Nepal stock exchange with the help of different analytical tools.

Chapter-V Summary, Conclusion and Recommendations: it sums up the results obtained through analysis and recommends some suggestions.

## CHAPTER-II

## REVIEW OF LITERATURE

Various researches have been conducted by different professionals and experts concerned with development and testing model of price Behavior of stock. The past price variation in general market of shares will or will not be meaningful information in forecasting the future Behavior of price variation. Various theories were developed in the past to handle the above mentioned problem.

This chapter is concerned with review some of basic literature on share price Behavior and volatility as well as review of the empirical evidence of previous studies. It has been divided into two sections. The first section includes the conceptual framework of stock price Behavior. And section briefly reviews the empirical evidence of the related studies conducted in the context of the other countries and in the Nepalese context.

### 2.1 Conceptual Framework

There are numerous reasons that causes the share price fluctuation of them are economic, non-economic and other factors. The price of securities are typically very sensitive, responsive to all events, both real and imagined that cast light into the murky future. There is very hard to find out the one most efficient price formation theory which is completely acceptable. However, there are some approaches that explains the share price fluctuation. They are reviewed below in brief:

### 2.1.1 Theories of Price Behavior

In general, forces of supply and demand of stock determine the stock price. If the demand is high and supply is low then the price of stock goes up and vice versa. There are essentially there schools of thought to explain the stock price Behavior. They are explained in detail as follows:

### 2.1.1.1 Fundamental Analysis

This type of analysis of a business involves analyzing its financial statements and health, its management and competitive advantages, and its competitors and markets. The analysis is performed on historical and present data, but with the goal to make financial projections. There are several possible objectives:

- To calculate a company's credit risk.
- To make projection on its business performance.
- To evaluate its management and make internal business decisions.
- To make the company's stock valuation and predict its probable price evolution.

Moreover 'A fundamental analysis approach attempts to determine whether the company is financially sound and will continue to earn money. When performing a fundamental analysis of the stock of interest, one tries to determine whether the stock is worth investing in. In this approach, one looks at how well the company is performing financially. What are the company's earnings? Have they been growing? How does the ratio of the price of the stock versus the earnings per share, the $\mathrm{P} / \mathrm{E}$ ratio, compare with other similar companies?

This approach attempts to answer some basic or fundamental questions about the financial health of the company and the industry in which the company operates. How
large is the company? How long has it been in business? What is the management of the company like? What is the outlook for the industry that the company is in?

Fundamental analysis is usually viewed as a more conservative approach to stock selection than technical analysis. It is certainly a more exact science. The price earnings ratio is easy to calculate; it is simply the price of each share of the stock divided by the earnings per share. The book value of the company can easily be determined from the company's financial statements, and the earnings are easily calculated from the financial records.

In contrast, the mathematics behind most technical analysis is much more complex and frequently requires much more of a judgment call on the part of the investor. In a technical analysis approach, the investor attempts to predict crowd behavior, while a fundamental analysis simply attempts to determine whether the company has been earning money and at what rate it will likely continue to earn money. The price of the stock in the short term is not that important in a fundamental analysis, since the theory is that if the company is earning money and continues to earn money, then the stock price will eventually go up (www.emeraldinsight.com).

Investing in stocks is much more likely to be successful if a systematic approach is used. A fundamental analysis approach is the easiest to understand and learn, and as such, it is perhaps the best place to start for a beginning investor.

### 2.1.1.2 Technical Analysis

This manner of playing the market assumes that non-random price patterns and trends exist in markets, and that these patterns can be identified and exploited. While many
different methods and tools are used, the study of charts of past price and trading action is primary. It maintains that all information is reflected already in the stock price, so fundamental analysis is a waste of time. Trends "are your friend" and sentiment changes predate and predict trend changes. Investors' emotional responses to price movements lead to recognizable price chart patterns. Technical analysis does not care what the "value" of a stock is. Their price predictions are only extrapolations from historical price patterns.

### 2.1.1.3 Efficient Market Hypothesis

The efficient market hypothesis (EMH) contradicts the basic tenets of technical analysis by stating that past prices cannot be used to profitably predict future prices. Thus it holds that technical analysis cannot be effective. Economist Eugene Fama published the seminal paper on the EMH in the Journal of Finance in 1970, and said "In short, the evidence in support of the efficient markets model is extensive, and (somewhat uniquely in economics) contradictory evidence is sparse." EMH advocates say that if prices quickly reflect all relevant information, no method (including technical analysis) can "beat the market." Developments which influence prices occur randomly and are unknowable in advance.

Technicians say that EMH ignores the way markets work, in that many investors base their expectations on past earnings or track record, for example. Because future stock prices can be strongly influenced by investor expectations, technicians claim it only follows that past prices influence future prices. They also point to research in the field of behavioral finance, specifically that people are not the rational participants EMH makes them out to be. Technicians have long said that irrational human behavior
influences stock prices, and that this behavior leads to predictable outcomes. Author David Aronson says that the theory of behavioral finance blends with the practice of technical analysis:

By considering the impact of emotions, cognitive errors, irrational preferences, and the dynamics of group behavior, behavioral finance offers succinct explanations of excess market volatility as well as the excess returns earned by stale information strategies cognitive errors may also explain the existence of market inefficiencies that spawn the systematic price movements that allow objective TA [technical analysis] methods to work.

EMH advocates reply that while individual market participants do not always act rationally (or have complete information), their aggregate decisions balance each other, resulting in a rational outcome (optimists who buy stock and bid the price higher are countered by pessimists who sell their stock, which keeps the price in equilibrium).

Likewise, complete information is reflected in the price because all market participants bring their own individual, but incomplete, knowledge together in the market. The vast majority of academic papers find that technical trading rules, after consideration for trading costs, are not profitable, thus confirming EMH.

### 2.1.1.4 Random Walk Hypothesis

The Random Walk Hypothesis may be derived from the weak-form efficient markets hypothesis, which is based on the assumption that market participants take full account of any information contained in past price movements (but not necessarily
other public information). In his book A Random Walk Down Wall Street, Princeton economist Burton Malkiel said that technical forecasting tools such as pattern analysis must ultimately be self-defeating: "The problem is that once such a regularity is known to market participants, people will act in such a way that prevents it from happening in the future." In a 1999 response to Malkiel, Andrew Lo and Craig McKinlay collected empirical papers that questioned the hypothesis' applicability that suggested a non-random and possibly predictive component to stock price movement, though they were careful to point out that rejecting random walk does not necessarily invalidate EMH (www.emeraldinsight.com).

Technicians say the EMH and random walk theories both ignore the realities of markets, in that participants are not completely rational (they can be greedy, overly risky, etc.) and that current price moves are not independent of previous moves. Critics reply that one can find virtually any chart pattern after the fact, but that this does not prove that such patterns are predictable. Technicians maintain that both theories would also invalidate numerous other trading strategies such as index arbitrage, statistical arbitrage and many other trading systems.

### 2.1.1.5 Capital Asset Pricing Model (CAPM)

Because investors are risk averse, they will choose to hold a portfolio of securities to take advantage of the benefits of Diversification. Therefore, when they are deciding whether or not to invest in a particular stock, they want to know how the stock will contribute to the risk and expected return of their portfolios. The standard deviation of an individual stock does not indicate how that stock will contribute to the risk and return of a diversified portfolio. Thus, another measure of risk is needed; a measure of
a security's systematic risk. This measure is provided by the Capital Asset Pricing Model (CAPM).

## Systematic and Unsystematic Risk

An asset's total risk consists of both systematic and unsystematic risk. Systematic risk, which is also called market risk or undiversifiable risk, is the portion of an asset's risk that cannot be eliminated via diversification. The systematic risk indicates how including a particular asset in a diversified portfolio will contribute to the riskiness of the portfolio Unsystematic risk, which is also called firm-specific or diversifiable risk, is the portion of an asset's total risk that can be eliminated by including the security as part of a diversifiable portfolio.

The Capital Asset Pricing Model (CAPM) provides an expression which relates the expected return on an asset to its systematic risk. The relationship is known as the Security Market Line (SML) equation and the measure of systematic risk in the CAPM is called Beta.

## The Security Market Line (SML)

The SML equation is expressed as follows:
$\mathrm{E}\left[\mathrm{K}_{\mathrm{i}}\right]=\mathrm{K}_{\mathrm{t}}+\boldsymbol{E}\left[\mathrm{K}_{\mathrm{m}}\right]-\mathrm{K}_{\mathrm{t}}{ }^{*} \beta_{\mathrm{j}}$
Where

- $E\left[R_{i}\right]=$ the expected return on asset $i$,
- $\mathrm{R}_{\mathrm{f}}=$ the risk-free rate,
- $E\left[R_{m}\right]=$ the expected return on the market portfolio,
- $b_{i}=$ the Beta on asset $i$, and
- $E\left[R_{m}\right]-R_{f}=$ the market risk premium.

The graph below depicts the SML. Note that the slope of the SML is equal to $\left(E\left[R_{m}\right]-\right.$ $R_{f}$ ) which is the market risk premium and that the SML intercepts the $y$ axis at the risk-free rate.


In capital market equilibrium, the required return on an asset must equal its expected return. Thus, the SML equation can also be used to determine an asset's required return given its Beta.

## The Beta ( $\mathrm{B}_{\mathrm{i}}$ )

The beta for a stock is defined as follows:
$\beta_{i}=\frac{\omega_{\text {im }}}{\omega_{\text {u }}^{d}}$
Where
$\sigma_{\mathrm{im}}=$ the Covariance between the returns on asset i and the market portfolio and $\sigma_{\mathrm{m}}^{2}=$ the Variance of the market portfolio.

Note that, by definition, the beta of the market portfolio equals 1 and the beta of the risk-free asset equals 0 .

An asset's systematic risk, therefore, depends upon its covariance with the market portfolio. The market portfolio is the most diversified portfolio possible as it consists of every asset in the economy held according to its market portfolio weight.

## Critical assumptions of CAPM

The CAPM is simple and elegant. Consider the many assumptions that underlie the model. Are they valid?

- Zero Transaction Costs: The CAPM assumes trading is costless so investments are priced to all fall on the capital market line. If not, some investments would hover below and above the line -- with transaction costs discouraging obvious swaps. But we know that many investments (such as acquiring a small business) involve significant transaction costs. Perhaps the capital market line is really a band whose width reflects trading costs.
- Zero Taxes: The CAPM assumes investment trading is tax-free and returns are unaffected by taxes. Yet we know this to be false: (1) many investment transactions are subject to capital gains taxes, thus adding transaction costs; (2) taxes reduce expected returns for many investors, thus affecting their pricing of investments; (3) different returns (dividends versus capital gains, taxable versus tax-deferred) are taxed differently, thus inducing investors to choose portfolios with tax-favored assets; (4) different investors (individuals versus pension plans) are taxed differently, thus leading to different pricing of the same assets.
- Homogeneous Investor Expectations: The CAPM assumes invests have the same beliefs about expected returns and risks of available investments. But we know that there is massive trading of stocks and bonds by investors with different expectations. We also know that investors have different risk preferences. Again, it may be that the capital market line is a fuzzy amalgamation of many different investors' capital market lines.
- Available Risk-Free Assets: The CAPM assumes the existence of zero risk securities, of various maturities and sufficient quantities to allow for portfolio risk adjustments. But we know even Treasury bills have various risks: reinvestment risk -- investors may have investment horizons beyond the T-bill maturity date; inflation risk -- fixed returns may be devalued by future inflation; currency risk -- the purchasing power of fixed returns may diminish compared to that of other currencies. (Even if investors could sell assets short -- by selling an asset she does not own, and buying it back later, thus profiting from price declines -- this method of reducing portfolio risk has costs and assumes unlimited short-selling ability.)
- Borrowing at Risk-Free Rates: The CAPM assumes investors can borrow money at risk-free rates to increase the proportion of risky assets in their portfolio. We know this is not true for smaller, non-institutional investors. In fact, we would predict that the capital market line should become kinked downward for riskier portfolios ( $\beta>1$ ) to reflect the higher cost of risk-free borrowing compared to risk free lending.
- Beta as Full Measure of Risk: The CAPM assumes that risk is measured by the volatility (standard deviation) of an asset's systematic risk, relative to the volatility (standard deviation) of the market as a whole. But we know that
investors face other risks: inflation risk -- returns may be devalued by future inflation; and liquidity risk -- investors in need of funds or wishing to change their portfolio's risk profile may be unable to readily sell at current market prices. Moreover, standard deviation does not measure risk when returns are not evenly distributed around the mean (non-bell curve). This uneven distribution describes our stock markets where winning companies, like Dell and Wal-Mart, have positive returns that greatly exceed losing companies' negative returns.


### 2.2 Review of Major Studies

A number of studies bring to light empirical evidence on volatility clustering regarding the impact of the news on stock price volatility. Among others, evidence about volatility clustering is provided by Engle (1982), Pindyck (1986) and Bollerslev (1986). These studies support the view that news tends to be clustered and this has an influence on stock price volatility. In particular, Engle (1982) introduced a new class of stochastic models referred to as autoregressive conditional heteroskedasticity (ARCH) processes. In general, ARCH modeling approaches infer that past information can forecast next period's stock price volatility.

Pindyck (1986) found that changes in stock price variance do not typically persist for very long, despite his findings that the previous period volatility appeared to explain the next period's volatility. This result was due to the influence of more than one variable, such as the changes in corporate profits and real interest rates. Furthermore, the influence depended mainly on the magnitude of the respective shocks. Pindyck reported that about one-third of the 1974 stock market decline in the US could be attributed to stock price volatility changes.

Bollerslev (1986) extended the (ARCH) modeling framework introduced by Engle (1982) to a GARCH process. The GARCH allows the past conditional variances in the current conditional variance estimation to capture volatility clustering. As such, the GARCH framework is preferred to the ARCH modeling approach for investigating volatility spillovers between markets, since it allows us to examine both the magnitude and the persistence of spillover effects.

Volatility clustering characterizes the transmission of news from one market to another. In this respect the transmission of news regarding a foreign cross-listing may be: public, private or just trading noise. The public information hypothesis states that return volatility arises from the release of public information such as corporate announcements, judicial decisions and macroeconomic news. However, existing studies reject the public information hypothesis (e.g. French and Roll, 1989; Barclay et al. 1990). These studies tend to find that the returns' variance will be unaffected by a cross-listing on an overseas exchange. In contrast to the above studies, Harvey and Huang (1991) concluded that increased volatility in a foreign exchange market is associated with the release of US macroeconomic news.

The rejection of the public information hypothesis was considered by French and Roll (1986) who examined the two-day return variance over US stock exchange holidays. They surmised that if public information is an important determinant of return volatility, this two-day variance should be twice the one-day variance. Their evidence suggested that the two-day variance was only 15 per cent greater than the one-day variance and they rejected the public information hypothesis as an explanation for greater stock price volatility. Likewise, Barclay et al. (1990) also found that US cross-
listings on overseas exchanges substantially increased the trading hours for these stocks but stock price volatility remained stable.

While the previous studies suggested that there is little evidence that public information influences cross-listing return volatility, other literature has identified that private information may have a more noteworthy impact. The view that private information influences return volatility is supported by the studies of Kyle (1985) and Admati and Pfleiderer (1988). Kyle (1985) developed a model that allowed for a chronological auction market in which informed traders generated order flows based on their private information. In this setting, changes in stock price volatility occurred as a result of changes in trading volume. Admati and Pfleiderer (1988) suggested that most of the trading of cross-listed shares were typically concentrated on one active market, whereas traders acquired private information with regard to the most active market after the listing on a foreign exchange. In general, the studies that examined the influence of private information suggested that cross-listings may provide an incentive for traders to collect and exploit greater this type of news and consequently this may cause an increase in stock price volatility.

Alternatively, Chowdhary and Nanda (1991) claimed that a dominant market will exist when a security has multiple locations of trading, predicting that a cross-listing will not change return variance. Chowdhry and Nanda (1991) analyzed a multi-market trading model with informed and liquidity traders, as suggested in Kyle (1985) and Admati and Pfleiderer (1988), predicting that if more than one market exists for a security, one will emerge as the dominant market. This may arise because liquidity traders look for markets with the lowest trading costs, while informed traders maximize their profitability by hiding trades in the most liquid markets. In contrast to

Chowdhry and Nanda (1991), Freedman (1989) argued that informed traders optimally allocate their trading amongst markets.

Above, it is revealed that private information is more likely to have a bigger influence on return volatility, which typically concentrated on one market. Another strand of the literature shows that trading noise may also have a significant impact on stock price volatility. For instance, Black (1976, 1986), Lo and McKinley (1988), Poterba and Summers (1988) and Lehman (1990) concluded that stock price volatility is possibly attributed to a form of permanent or temporary noise. In contrast to the public and private information hypothesis, the noise-trading hypothesis predicted that a foreign listing leads to an increase in return variance.

Specifically, Black (1976) noted that stock price volatility tends to grow in relation to bad news and tends to fall in response to good news. The economic explanation given by Black is that negative returns make the equity value of a firm relatively more risky than the one of other firms, increasing the firm's stock price volatility. In another study, Black (1986) notes that noise can also increase stock price volatility. His results indicated that noise may be permanent or temporary and thus the stock price volatility could be influenced by both temporary and permanent bad and good news.

Among others, Lo and McKinley (1988) and Lehman (1990) looked at the impact of temporary noise on stock price volatility and found that noise trading leads to an increase in stock price volatility over the short-term period but to a decline over the long-term period (with negative autocorrelation). Similarly, Poterba and Summers (1988) suggested that stock price returns show positive serial correlation over short
periods and negative serial correlation over longer intervals. In their study, using NYSE returns over the 1926-1985 period, they found that transitory price components accounts for a substantial part of the variance in equity returns. In general, the aforementioned studies suggested that noise may influence stock price volatility and this may be temporary or permanent in its nature.

Closely related to the issues of volatility transmission, whether it is through public, or private information, or just noise trading is the notion of market segmentation. The greater the impact of volatility spillover transfers among different markets, the higher the level of market segmentation. A growing body of literature has examined the issue of capital markets' segmentation, for example Stapleton and Subrahmanyam (1977) suggested three categories of corporate financial policies that can reduce the effects associated with market segmentation. In this respect, they suggested that direct foreign investments, mergers with foreign firms and the listing of the firms' securities on foreign exchanges all reduce the process of market segmentation.

While cross-listing is suggested as a possible reason for the markets becoming more integrated, several empirical studies find limited evidence in support of this idea. As an example, Howe and Kelm (1987) examined a sample of US firms undergoing their first, second and third overseas listing. The foreign exchanges involved were Paris, Frankfurt and Basle, applying a standard event study methodology measuring the abnormal returns in the 131 day period surrounding the announcement of the cross-listing. The findings in this period are associated with negative abnormal returns of about $\mathbf{- 5 . 1}$ per cent for the cross-listings, implying the existence of a high cost to overseas cross-listings. They also speculated that uncertainty is increased for an
internationally listed stock due to increased regulatory uncertainty, but offered no evidence to support this conjecture.

As another example, Alexander et al. (1988) examined a sample of 34 foreign firms that listed their stocks in the United States. Thirteen were Canadian stocks, while the remaining 21 were American depository receipts from Japan, Australia and other countries. Their evidence support positive abnormal returns in the precross-listing period, no abnormal returns in the cross-listing period and negative abnormal returns in the post cross-listing period. There was found little evidence to document significant benefits to the shareholders of these firms that cross-listed their stock on a foreign exchange.

In addition to above studies, Ying et al. (1977) analyzed the impact of cross-listing on American stock exchanges, finding that cross-listing created value for companies, in the sense that abnormal returns were generated, as a result of the cross-listing. Moreover, the study of Sanger and McConnell (1986) indicated that a firm's stock price increases with the news that it will make a new cross-listing on a stock exchange. The increase in stock price was associated with an increase in market liquidity and managerial signals of this new cross-listing.

Another study by Varela and Lee (1993) examined US firms that cross-listed on the London stock exchange and UK firms that cross-listed in the US. Their results for foreign cross-listings on the US market presented significant effects of stock price volatility compared with the impact of cross-listings in the UK market. Also, trading location was found to have an important impact on stock price volatility. Dharan and

Ikenberry (1995) examined small and large firms that listed on the ASE and NYSE stock exchanges and found the post-listing drift to be longer for large firms, while small firms to have a poor post-listing performance.

A number of studies bring to light evidence that a foreign listing can also mitigate information costs due to lower accounting standards, disclosure rules and regulatory environment. For instance, LaPorta et al. (1998) have argued that common law legal system protect investors better than civil law systems[1]. Investors may not want to hold equity in a firm from a country with poor investor protection rules because they may fear expropriation by concentrated shareholders or managers[2] Another reason for firms seeking a foreign listing relates to investor recognition and/or liquidity reasons. When a firm cross-lists, it reduces some of the home bias providing greater investor access to the company equity. Kim and Suh (2001), for instance, find that US shareholders are more likely to accept the equity of cross-listed companies with greater turnover (liquidity) in the US market[3].

Louis Bachelier, French mathematician first tested the random walk model in 1900. He tested the model in commodity prices and found that those prices followed random walk. He also presented convincing evidence that commodity speculation in France was "fair game" and that the current price of a commodity was an unbiased estimate of its future price. He set forth formal models in which security prices were random outcomes that had probabilities attached to them (Francis, $6^{\text {th }}$ edition/ 542). He was one of the first to study security price movement mathematically.

After the first discovery of random walk model by Bachelier empirical testing of the model in the stock market prices almost remained constant till 1960s. There are large number of studies have been done most of which are briefly reviewed below.

The work of Slutsky (Slutsky, 1927/105-1046) is given the credit of an independent rebirth of random walk. He proved that the randomly generated price changes and that they appear to exhibit cycles and other patterns. His work also did not receive much more attention. In 1933 Alfred Cowles (Cowles, 1933/309-324) found little evidence that stock market analyst could predict future prices.

Bixia Xu, Wilfrid Laurier University, Waterloo, Canada has conducted his research on "R\&D strategy and stock price volatility in the biotechnology industry" in 2006. The propose of the study is to evaluate biotech share price volatility, which was highly volatile, compared to most other industries. There was limited explanation for what causes such a high volatility. The purpose of the study was to explore how R\&D strategies selected by biotech firms affect their share price volatilities. Specifically, the paper empirically investigated the impact of drug discovery and development diversification on share price volatility.

For his study he used the Design/Methodology/Approach as Regression analysis applied to observe the effect of R\&D strategy on share price volatility.

The major finding of his study is the significant impact of R\&D strategy in term of drug discovery and development diversification on share price volatility. Firms that have more diversified drug portfolios are associated with lower share price volatilities; and lower stock returns. In contrast, firms that have more concentrated
drug portfolios are associated with higher share price volatilities; and higher stock returns.

The work of Johan Knif, HANKEN and Seppo Pynnönen (2006), in the title of "Volatility driven changes in stock return correlation dynamics", with the purpose of the study of the relationship between stock return correlation and volatility. Utilizing a logit-type regression model, the paper analyzes the incremental effect of volatility on the level of correlation (Emerald Group Publishing Limited).

The finding is an explicit model was constructed to investigate the contribution of the level of volatility on mutual correlations of the markets. The empirical results strongly support the findings that high volatility tends to increase correlations between the markets. An analysis of the small Nordic markets further showed that the local volatilities may play a role in the change of the level of correlation. However, it is the general world-wide volatility level that mainly drives the changes in the correlations.

The another study has accomplished by Athanasios Koulakiotis, Department of Financial and Management Engineering, University of the Aegean, Greece And his friend in the topic "The impact of foreign cross-listings on the home Dutch quities". The main purpose of the study is to develop the approach suggested by Howe et al. and to examine the impact of cross-listings on stock price volatility in Europe. A modified generalized autoregressive conditional hetero-skedasticity (GARCH) modeling approach as suggested by Li and Engle is used taking into account different regulatory structures across the range of markets using LaPorta et al.'s stock market regulatory classification.

It was found that information spillover effects are important for the Dutch market for cross-listed equities and that a different regulatory environment may have a noteworthy impact on symmetric information spillovers (www.emeraldinsight.com) .

### 2.3 Review of Major Nepalese Studies

The stock market in Nepal has been less subjected to investment research than other developed countries. Most of the researches and studies that are concerned with the investigation of effect of certain variables on the epuity share prices. For instance, Pradhan (1994) studied stock market Behavior in nepal. He concluded that the positive relationship between the ratio of dividend per share to market price per share and interest coverages. Some research studiees on stock price Behavior and movement has been done in nepal. Some major studies are as follows:

Aryal (1995) accomplished s study entitled "A study on General Behavior of Stock Market Prices". He applied serial correlation and runs analysis and come to this conclusion that today's share price changes of an individual common stock is not an unbiased and independent outcomes of yesterday's prices changes of Bernoulli Process.

In an another study, Shrestha (1991) on price Behavior using random walk hypothesis or weakly efficient market hypothesis is determine whether stock market of Nepal is efficient in pricing shares or not. The model contains mainly two hypotheses (i) the series of price changes are identically distributed or confirms to some probability distribution and (ii) successive stock price changes are independent random variables. The conclusion drawn in the study was that the random walk theory is not a suitable description for the stock market price Behavior in Nepal. Further, he concluded the
dependence in the series of price changes implies that the price changes in the future market will not be independent from the price changes on previous days.

A study conducted by Shrestha (1999), who examined daily closing price of 60 stocks during the period from 13 Jan. 1994 to mid July 1998 by means of serial correlation and run test and found that the successive price changes are dependent. He also concluded that the Nepalese stock market is not efficient in pricing shares even in its weak form.

Another study conducted by Upadhyay (2001), used serial correlation and runs test analysis on weekly closing data of 23 stocks during mid July 1997 to mid July 2000. He used both secondary as well as primary data in his study, concluded that both the test- serial correlation and run test analysis do not support the independence assumption of random walk models. How ever, in terms of both tests, a few of the price series support the random walk model. He also concluded that Nepalese stock market may not be termed as "weekly efficient" in pricing shares. Another conclusion that can be drawn from the views of financial executives is that share price movement are caused by flow of several kind of information in the market, some affecting price of large number of stocks while the other only equities of some specific industry or particular company. Lastly the existence of weak firm efficient market hypothesis is slightly accepted by financial executives in Nepal.

Gurung (2000) using serial correlation analysis and run test on daily closing data of 15 companies from 13 January 1994 to $31^{\text {st }}$ December 1998. He found that the Nepse index, in general, $s$ in decreasing trend during the study period. Nepse index reached
a peak in the first year and started to decline in 1998. Market price dramatically gone up in the first year and sharply decreased in the same year. There is high fluctuating and instability in stock market. Moreover, capital market is bullish in initial period and it turned into bearish in the successive year.

Kharel (2002) also study on stock market and share price behavior in Nepal. He focused his study on daily closing data of 30 companies' stock listed in the NEPSE for the fiscal year 2001/02. He used serial correlation, run test and filters rule and concluded that the stock price changes of NEPSE can be explained as serially correlated and are dependent. And thus, sophisticated investors can beat the average market return applying can specific trading rule based on historical price.

### 2.4 Research Gap

There have been several researches done in stock market. All of those researches have many useful findings and their own limitations. Like, Aryal conducted a study in 1995 in share price behavior based on twenty- one sample stocks. The time period was only 8 months from the beginning day of organized stock market for eight months period. Now it is out of date. Till date market has experienced many ups and downs. Many other researcher has centered their research just in stock price behavior. The empirical evidence and responsible agencies has not identified. And the future strategy for control of such price volatility also did not identified. The present study is a supplement to overcome the weakness and limitations of previous studies.

The main focus of this research is to calculate and analyze the stock price volatility of Nepalese companies listed in NEPSE. This will analyze the causes and reasons of
stock price volatility of Nepalese stock market. And it will also accesses the responsible agencies for such price volatility and corrective measures for improvement stock market inefficiency. This will help to make the stock market more robust. Further more, by being able to point out the weakness; more investors can be made to contribute for the growth of stock market.

## CHAPTER-III

## RESEARCH METHODOLOGY

### 3.1 Background

Research methodology provides the methodology followed to achieve the objectives stated in this research. This chapter describes the following aspects of research methodology; research design, sample selection, data collection procedure, data processing, definition of variables meaning and definition of both statistical and financial tools used in this research design. Results are presented in simple way using tables, graphs and diagrams. Detail research methods are described in following heading.

### 3.2 Research Design

This study followed both of two major research designs which are survey research design for primary data and descriptive research design for secondary data. For accessing stock price volatility, the secondary data from NEPSE will be collected of selected listed companies. For accessing the empirical evidence of such price volatility, the primary data will be collected through the questionnaire from different respondents and that will be analyzed with different tools and techniques.

### 3.3 Population and Sample

For the selection of the sample from the population, all the listed companies, people concerned to this sector, academicians and practitioners are taken as population of the study. Specifically, study covered two data sets primary and secondary.

Primary data is gathered through in the process of survey design. In survey design, the people who actively keep information or playing in the capital market of Nepal are taken as the population of the study and conveniently approached few experts of focus group study are the sample.

For access the volatility of Nepalese stock market, 17 listed companies are taken as the sample for the study out of 176 listed companies. These companies represents all sectors of financial market like banks, finance company, insurance companies, manufacturing and processing company etc.

### 3.4 Tools and Techniques

To accomplish research work few statistical package such as excel and SPSS were used to process and analyze information. Secondary information collected from security board were first tabulated in excel spreadsheet and then analyzed using formula and charts of the same software.

Primary data were collected from carefully designed questionnaire. Such data were first tabulated in SPSS after properly defined variables. Some data were parametric and some were non-parametric data. Suitable tools such as descriptive statistics and one-sample ' $t$ ' test was calculated in case of parametric data set. Friedman's chisquare test will be used to test the significance for non parametric data set.

## CHAPTER-IV

## DATA PRESENTATION AND ANALYSIS

### 4.1 Presentation and Analysis of Secondary Data

Nepalese share market has undergone through many ups and downs. High fluctuation was observed in past few years in Nepalese shares price. Therefore, it can be argued that share price behavior in Nepalese capital is volatile and fluctuating (Adhikari, 2004). This chapter aims to analyze the real price fluctuation trend in Nepalese capital market so that the pattern of the price fluctuation could be analyzed. All the listed companies were taken as the population of the study. Out of them, few companies that had satisfactory transaction were taken as the sample of the study. Secondary data were gathered from Nepalese stock exchange limited and analyzed them. The behavior of stock price in Nepalese capital market can be analyzed in following parts.

### 4.1.1 Trend of Share Price Behavior of Selected Companies

To analyze the fluctuation of the stock price in Nepalese share market 17 listed companies from different sector are taken as sample. The sampled companies are Standard Chartered Bank, NABIL Bank, Himalayan Bank Limited, Everest Bank Limited, Bank of Katmandu, Nepal Bangladesh Bank, Nepal SBI, Nepal Merchant Banking and Finance, Ace Finance Limited, National Finance, Katmandu Finance, Peoples Finance, Nepal Development Bank, Unilever Nepal Limited, Himalayan General Insurance, Rastriya Bema Sansthan, Hotel Soaltee. Data were collected at the first day of each quarter for five years starting from 2004 to 2007. First day of the first year was taken as the base year for calculating the percentage change in share price of each selected company.

In the table 4.1, all companies was designed in the column and the year in to row. The companies' were taken as the variable of in the data sheet. Thereafter, data were tabulated in excel spreadsheet then formula was defined in the each next column of the variable. That helped to find out the actual changes on the base year $15^{\text {th }}$ sep. 2001. The results in price fluctuation are presented under following table in percentage base.

Table 4.1
Share Price Behavior of Selected Listed Companies
(In percentage)

|  |  | 2001 | 2002 |  |  | 2003 |  |  | 2004 |  |  | 2005 |  |  | 2006 |  |  | 2007 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S.N | Company | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { Jan } \end{aligned}$ | 15- <br> May | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { Jan } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { May } \end{aligned}$ | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { Jan } \end{aligned}$ | 15- <br> May | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { Jan } \end{aligned}$ | 15- <br> May | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { Jan } \end{aligned}$ | 15- <br> May | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ | $\begin{aligned} & \text { 15- } \\ & \text { Jan } \end{aligned}$ | 15- <br> May | $\begin{aligned} & 15- \\ & \text { Sep } \end{aligned}$ |
| 1 | ST. Chartered | 100 | 94.9 | 94.3 | 103.0 | 83.3 | 98.3 | 103.0 | 90.7 | 86.0 | 105.1 | 103.3 | 125.8 | 143.6 | 160.4 | 220.9 | 216.4 | 274.6 | 268.9 | 352.2 |
| 2 | Nabil | 100 | 110.0 | 97.5 | 91.4 | 88.3 | 28.3 | 90.1 | 98.8 | 100.6 | 137.0 | 144.4 | 176.7 | 192.7 | 214.8 | 283.3 | 264.2 | 419.8 | 429.0 | 623.5 |
| 3 | HBL | 100 | 96.3 | 91.7 | 88.0 | 73.1 | 75.7 | 79.0 | 79.6 | 74.4 | 83.8 | 92.6 | 85.6 | 89.2 | 87.0 | 109.4 | 96.8 | 112.0 | 109.3 | 163.0 |
| 4 | Everest | 100 | 86.2 | 86.2 | 75.0 | 72.4 | 77.6 | 78.6 | 72.6 | 89.7 | 114.7 | 117.2 | 154.3 | 150.0 | 152.4 | 237.1 | 222.4 | 327.6 | 301.7 | 419.0 |
| 5 | BOK | 100 | 83.8 | 77.3 | 71.2 | 54.3 | 57.6 | 52.3 | 51.0 | 55.8 | 73.2 | 76.8 | 114.4 | 118.4 | 137.6 | 222.5 | 206.6 | 277.8 | 233.6 | 347.2 |
| 6 | NB Bank | 100 | 105.9 | 67.1 | 61.2 | 42.7 | 42.4 | 43.5 | 51.2 | 42.5 | 33.1 | 27.6 | 31.3 | 31.2 | 26.1 | 22.4 | 25.6 | 48.8 | 36.2 | 64.7 |
| 7 | Nepal SBI | 100 | 88.7 | 40.3 | 35.0 | 26.1 | 27.0 | 26.2 | 24.8 | 25.3 | 31.2 | 31.4 | 32.8 | 32.7 | 35.9 | 60.2 | 51.8 | 70.8 | 72.6 | 99.1 |
| 8 | NMBF | 100 | 104.6 | 100.0 | 92.9 | 70.8 | 70.8 | 64.6 | 60.0 | 69.2 | 83.3 | 87.5 | 102.1 | 114.6 | 96.7 | 97.9 | 115.0 | 458.8 | 364.6 | 350.0 |
| 9 | ACE Fin. | 100 | 63.2 | 50.5 | 50.5 | 42.1 | 50.5 | 45.1 | 37.9 | 34.3 | 37.9 | 42.1 | 52.6 | 71.6 | 71.6 | 70.9 | 71.6 | 92.6 | 73.7 | 96.6 |
| 10 | National Fin. | 100 | 81.6 | 80.0 | 76.8 | 78.4 | 68.0 | 68.3 | 18.4 | 59.7 | 56.0 | 59.2 | 55.2 | 46.4 | 41.6 | 40.0 | 44.8 | 48.0 | 56.8 | 115.2 |
| 11 | KTM Fin. | 100 | 108.7 | 92.0 | 102.0 | 76.7 | 78.3 | 90.0 | 66.7 | 73.3 | 63.3 | 58.3 | 48.3 | 45.0 | 45.0 | 46.3 | 45.0 | 57.7 | 59.0 | 67.7 |
| 12 | Peoples Fin. | 100 | 87.0 | 54.8 | 56.5 | 43.9 | 42.6 | 40.0 | 48.7 | 44.8 | 65.2 | 47.8 | 43.5 | 43.5 | 46.5 | 54.8 | 43.5 | 56.5 | 55.2 | 54.3 |
| 13 | NEPAL DEV. | 100 | 93.7 | 114.3 | 89.7 | 76.0 | 77.1 | 73.1 | 66.3 | 61.1 | 54.3 | 51.4 | 57.1 | 57.7 | 55.4 | 50.9 | 57.7 | 97.7 | 68.6 | 86.3 |
| 14 | UNILEVER | 100 | 97.2 | 82.2 | 73.6 | 60.9 | 60.8 | 30.6 | 86.1 | 107.3 | 86.1 | 86.1 | 90.6 | 100.0 | 105.6 | 125.0 | 152.8 | 161.1 | 177.8 | 188.9 |
| 15 | Himalayan gen. | 100 | 79.2 | 92.5 | 73.6 | 71.7 | 73.6 | 56.6 | 67.9 | 64.2 | 64.2 | 71.3 | 67.9 | 77.4 | 71.3 | 67.5 | 81.1 | 88.7 | 98.1 | 57.0 |
| 16 | Rastriya Beema | 100 | 89.3 | 95.2 | 103.2 | 97.2 | 91.3 | 97.5 | 99.2 | 107.1 | 95.2 | 95.2 | 103.2 | 131.6 | 138.9 | 134.9 | 142.9 | 150.8 | 150.8 | 170.6 |
| 17 | Hotel Soaltee | 100 | 77.6 | 80.0 | 72.8 | 21.6 | 60.8 | 56.8 | 54.4 | 50.4 | 40.0 | 38.4 | 40.0 | 40.0 | 43.2 | 45.6 | 45.6 | 57.6 | 92.0 | 100.8 |

Table 4.1 shows, the price fluctuation of different listed companies in different time period. It also shows the increasing trend of share price of Nepalese share from the ending of year 2004 of some companies. Many ups and downs can be observed in different time period in the figure. That difference in price can be affected from artificial price fluctuation and external factors. The companies own internal strategies, earning and dividend might not be the major reason for such price fluctuation.

Intermediaries such as investors or brokers might be the major factors in such price fluctuation. Furthermore, the political environment of the country especially Maoist movement might have influenced the share price pattern in Nepalese share market.

### 4.1.2 Trend of Share Price Behavior in Term of Trend Line

In above section, we saw the price fluctuating trend in Nepalese share market of selected companies. Now, It would be better to analyze the pattern of the share price behavior of selected Nepalese listed companies for the seven years in terms of trend lines. Graphical presentation is a very powerful tool for presentation and its analysis. The following figure shows the trend of stock price fluctuation in of selected companies in different quarterly period.

Figure 4.1

## Trend of Share Price Behavior in Terms of Trend Line



Figure 4.1 shows, the share price fluctuating trend line of different sampled companies of Nepalese capital market during 2001 to 2007. In the above figure year 2001 is taken as base year for calculation of volatility.

The stock price of Unilever Nepal limited and NABIL Bank limited was observed as very high fluctuation stock during 15 Jan 2003 to 15 Jan 2004. Where the stock price of Unilever Nepal limited was Rs 550 in 15 Sep 2003 and the stock price of NABIL Bank Limited was Rs 229 on 15 may 2003. This is the lowest trading price of these
two companies to till date. After eight month the stock price of Unilever was increased to Rs 1932. Similarly, the stock price of NABIL bank limited was in increase to Rs 730 with in 4 months. How ever, the share price of other listed companies also fluctuating significantly during the period.

The above results clearly shows that the price increment and decrement is not just because of companies internal strategy and performance or dividend policy but it may caused due to market mechanisms or environmental forces. The above figure shows the prices of all companies were sharply dropped in September 2002 even lower then earlier. According to the analysis, it simply seems the affecting factor of such price volatility is from external forces rather than the organizational. It further showed that the artificial price fluctuation is exists in Nepalese share market. Because of limited active investor and broker in Nepalese share market; such artificial volatility is being creating day by day according to their wish.

### 4.2 Presentation and Analysis of Primary Data

In this section, the analysis of the results of price fluctuation calculated in previous section is done through the opinions of the Respondents. The previous section showed very high share price volatility of all selected listed companies during analysis period. In this chapter, the investigation on potential responsible factors of such price volatility, institution responsible for such price volatility, potential affecting factors for stock market inefficiency, and some potential strategies to make the better stock market practices will be find out.

In Nepalese share market, there are many factors which directly effect the stock price volatility. The major research question of this analysis is heading towards to measure the contributing factors and possible corrective action for the ultimate benefit to the stakeholder of Nepalese capital market.

In this analysis, the researcher has took opinion from different person who directly or indirectly attached with Nepalese capital market, especially in secondary market. Most of them are well informed and player of capital market trading system in Nepal. In this analysis, the questionnaire was distributed for different 65 peoples. Out of them only 50 questionnaires are usable for analysis. The questionnaire was designed in six point Likert scale, ordinal ranking scale, and open-ended subjective questions. The details about the respondents are as followings.

### 4.2.1 Gender of the Respondents

In this research many peoples from different sector gave their opinion as their own idea and experience. Following table shows the actual status of gender of the respondent.

Table 4.2
Gender of the Respondents

| Category | Frequency | Percentage | Actual Percent | Cumulative Percent |
| :--- | :---: | :---: | :---: | :---: |
| Male | 30 | 60 | 66.5 | 66.5 |
| Female | 15 | 30 | 33.5 | 100 |
| Total | 45 | 90 | 100 |  |
| Not Stated | 5 | 10 |  |  |
| Total | 50 | 100 |  |  |

Table 4.2 shows, the gender of respondents and their valid ratio, where $66.5 \%$ are male and $33.5 \%$ are female respondents. Out of total respondent there are 5 respondents who did not identify their gender. It shows one third of the total respondents are female.

### 4.2.2 Age of the Respondents

In a good research there should be attempt the information from diverse groups of respondents. Age is also on factor in this campaign. Following table depicts the age of the respondents.

Table 4.3

## Age of the Respondents

| Category | Frequency | Percent | Valid percent | Cumulative percent |
| :--- | :---: | :---: | :---: | :---: |
| Age below 30 | 10 | 20 | 22 | 22 |
| 31 to 40 | 15 | 30 | 31 | 53 |
| 41 to 50 | 15 | 30 | 31 | 84 |
| Age above 50 | 8 | 16 | 16 | 100 |
| Total | 48 | 96 | 100 |  |
| Not Stated | 2 | 4 |  |  |
| Total | 50 | 100 |  |  |

Table 4.3 shows, the age group of people who involve in this research as respondents. It shows that the respondents are from young generation and old generation as well. Young people have fresh knowledge and old people have experience.

### 4.2.3 Profession of the Respondents

Respondent's profession is also important part in survey research. The following table presents the profession of the respondents.

Table 4.4

## Profession of the Respondents

| Category | Frequency | Percent | Valid percent | Cumulative percent |
| :--- | :---: | :---: | :---: | :---: |
| Banker | 5 | 10 | 10 | 10 |
| Broker | 10 | 20 | 20 | 30 |
| Investor | 15 | 30 | 30 | 60 |
| Academician (Finance Lecturers) | 15 | 30 | 30 | 90 |
| Bureaucrat | 5 | 10 | 10 | 100 |
| Total | 50 | 100 | 100 |  |

Table 4.4 shows, the profession of the respondents. The focus of the survey is on the profession of that respondents who are most concerned with Nepalese share market. As compared with other respondents, investors and academician are taken as rational and well informed respondents. Hence 30 respondents are from investors and academician.

### 4.2.4 Abnormal Price Fluctuation- Causes in Nepalese Share Market

Each action is backed by some causes and reasons. So in order to assess the cause and reasons of such price volatility in Nepalese share market, here few statements are design for testing. The collected views and opinions from respondents has been processed through 't' test. For that purpose, first descriptive statistics are presented so that the actual level of the variable could be analyzed. After calculating the mean and standard deviation of the variables used to assess the causes for abnormal price fluctuation. Each variables ' $t$ ' statistics is computed to find the significance of the mean differences. The descriptive statistics of the potential variables for abnormal price fluctuation in Nepalese share market can be shown in following table.

## Table 4.5

Causes for Abnormal Price Fluctuation in Nepalese Share Market

| Causes | No | Mean | Std. Dev. | SE of Mean |
| :--- | :---: | :---: | :---: | :---: |
| Irrational investor | 50 | 4.06 | 1.2357 | 0.1748 |
| Companies manipulate their financial stmt. | 50 | 3.76 | 1.3024 | 0.1842 |
| Lack of facilitating institution | 50 | 4.44 | 0.7866 | 0.1112 |
| Share price affected by the market rate | 50 | 3.38 | 1.2760 | 0.1805 |
| Demand and supply do not affect the price <br> of the stock | 50 | 2.88 | 1.4658 | 0.2073 |
| Limited no of investor in share market | 50 | 4.48 | 1.3438 | 0.1900 |
| The developing stage of share market | 50 | 5.00 | 0.8330 | 0.1178 |

Table 4.5 shows, the mean opinion of respondents in regard to the causes of abnormal price fluctuation in Nepalese capital market. Highest mean score and relative low standard deviation with low standard error proves that lack of developed share market
is none of the main causes in price fluctuation in Nepalese share market. It identified the few no of competitor in share market has been identified as the second major reason of abnormal price fluctuation. After that investors are not being rational in assessing risk and return is another reason for such price fluctuation. Similarly lack of facilitating institution, stock price is not actual because the companies of share is not actual because organization manipulate their financial statement and share price is not affected by the market are also identified as significant causes respectively. Respondents have almost denied that demand and supply do not affect the price of the stock.

Now, the above descriptive variables is tested through one sample ' $t$ ' test. To test significance difference between the mean variance among the variables, we use one sample ' $t$ ' test in following way.

Table 4.6
O ne Sample 'T' Test to Test Significance Difference between V ariable

| Variables/Factors | T value | DF | Sig. <br> (2-tailed) | Mean <br> difference | confidence level <br> con |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  | Lower | Upper |
| Irrational investor | 23.233 | 49 | 0.000 | 4.0600 | 3.7088 | 4.4112 |
| Companies manipulate <br> their financial stmt. | 20.414 | 49 | 0.000 | 3.7600 | 3.3899 | 4.1301 |
| Lack of facilitating <br> institution | 39.912 | 49 | 0.000 | 4.4400 | 4.2164 | 4.6636 |
| Share price affected by the <br> market rate | 18.731 | 49 | 0.000 | 3.3800 | 3.0174 | 3.7426 |
| Demand and supply do not <br> affect the price of the stock | 13.893 | 49 | 0.000 | 2.8800 | 2.4634 | 3.2966 |
| Limited no of investor in <br> share market | 23.574 | 49 | 0.000 | 4.4800 | 4.0981 | 4.8619 |
| The developing stage of <br> share market | 42.444 | 49 | 0.000 | 5.0000 | 4.7633 | 5.2367 |

According to above test statistics, It is conformed that there is significance difference between variables in each other. The statistics even shows the significance different at $99 \%$ level of confidence. Thus it can be concluded that lack of perfect development of Nepalese share market was reported as the most important factor and limited number of investor/competitor in Nepalese share market is reported as the second important factor of share price volatility.

### 4.2.5 Responsible Agencies for Share Market Inefficiency in Nepal

It is difficult to predict the exact responsible agency for such price fluctuation in Nepalese share market. But many researcher has selected four major responsible
agencies in Nepalese share market. They are listed companies, government body, market maker and brokerage firm. Here, questionnaire are distributed to the respondents to fill their opinion about responsible agencies in six point likert type of scale anchored by 1 ; totally disagreed' to 6 ; totally agreed. The collected opinion from respondents can be shown in table for descriptive analysis. And can be shown as follows.

Table 4.7
Agencies Responsible for Inefficiency of Nepalese Share Market

| Agencies | No. | Mean | Std. Dev | SE of mean |
| :--- | :---: | :---: | :---: | :---: |
| Brokerage firm | 50 | 4.3400 | 1.1359 | 0.1606 |
| Stock exchange board | 50 | 4.3400 | 1.0616 | 0.1501 |
| Market maker | 50 | 4.3400 | 1.0422 | 0.1474 |
| Listed companies | 50 | 3.7200 | 1.3099 | 0.1853 |

According to above descriptive table, the 3 agencies (brokerage firm, government body and market maker) are equally responsible for market inefficiency from the view point of calculated mean. All three agencies has equal mean score of opinion. And the lowest mean score of opinion of listed companies found 3.7200.

After the descriptive analysis, one sample ' $t$ ' test has been computed to find whether there is significance difference between the variables or not. At the $95 \%$ confidence level the following calculation has done as following.

Table 4.8
One- Sample Test of Responsible Agencies in Share Market Inefficiency

| Agencies | T | DF | Sig. <br> (2-tailed) | Mean <br> difference | 95\% <br> conf. level |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Lower | higher |
| Brokerage firm | 27.018 | 49 | 0.000 | 4.3400 | 1.0172 | 4.6628 |
| Stock exchange board | 28.908 | 49 | 0.000 | 4.3400 | 4.0383 | 4.6417 |
| Market maker | 29.447 | 49 | 0.000 | 4.3400 | 4.0438 | 4.6362 |
| Listed companies | 20.081 | 49 | 0.000 | 3.7200 | 3.3477 | 4.0923 |

Table 4.8 clearly showed that all the variables are significantly different among each other at ' 0.95 ' level of confidence. Thus, it is clearly evident that listed companies wee not found relatively responsible agency in the stock market inefficiency in Nepalese capital market. In general, all the three other agencies such as brokers, government and market makers were found responsible in the present market inefficiency of Nepalese stock market.

### 4.2.6 Potential Affecting Factors for Market Inefficiency in Nepalese Share Market

This analysis is focused in finding potential factors that affect for the inefficiency of Nepalese stock market. Researcher has attempted to cover most of the important environmental factors and close factors that are responsible in effectiveness of capital market. Information was collected in ordinal scale and suitable non-parametric Freidman's chi-square test was used to identify the relative importance of the selected relevant external environmental factors that affect Nepalese capital market. The following table present the mean rank of all these variables.

Table 4.9
Ranks of Potential Affecting Factor for Market Inefficiency

| Variables | Mean Rank |
| :--- | :---: |
| 1. Adverse economic situation | 2.66 |
| 2. Small size of capital market | 3.38 |
| 3. Instable political situation | 3.50 |
| 4. Not having effective law \& policy | 3.52 |
| 5. Security board is not active and effective | 4.00 |
| 6. Govt. tax policy in dividend \& capital gain | 4.98 |
| 7. Non-convertibility of capital account for foreign investment | 5.96 |
| Fir |  |

Friedman test statistics: chi-square $79.954, \mathrm{df}=6$, sig. . $000, \mathrm{~N}=50$

Above mean rank clearly shows the adverse economic situation of the country the most relevant affecting force for the inefficiency of Nepalese capital market. It means the poor economic condition and present environment is the one of the external influencing force in Nepalese capital market. Similarly, small size of Nepalese capital market was identified as second important factor and the third one was the instable political environment. Furthermore, the regulatory bodies such, as security board was found inactive and ineffective. Other variables were found less relevant to the issue.

Friedman's chi-square test was calculated to find out the mean differences of the ranking variables. The result showed Friedman chi-square 79.954, df $=6$, significance level .000. it is clearly evident that the chi-square is high and that is significant at ' 0.01 ' level of significance in 6 degree of freedom. Thus. It is evident that the low mean score showed the most preferred and highest mean score showed the least preferred variable among the seven variables.

### 4.2.7 Correctives Measures for Improving Stock Market Inefficiency

Researcher has designed the questionnaire to identify the potential corrective measures for removing inefficiency that exists in Nepalese stock market. Ordinal scale was used following ranking method so that respondents could rank the important aspects for the corrective measures for improving stock market. Only five aspects were selected to ask the respondents for their ranking so that respondents could assign 1 to the most preferred 2 to the next and so on accordance to their significance . the following table shows mean rank of those corrective measures.

Table 4.10
Correctives Measures for Improving Stock Market Inefficiency

| Variables | Mean rank |
| :--- | :--- |
| 1. actual information to the investor about financial market | 2.14 |
| 2. monitoring mechanism for determination of stock price | 3.04 |
| 3. establishing stock pricing bodies/ institutions | 3.12 |
| 4. stock price should be determined by demand and supply of stock | 3.26 |
| 5. stock pricing should be based on market interest rate | 3.44 |
| Friedman test statistics: chi-square 20.336, df=4, sig. .000, N=50 |  |
| Note: 1=most important, 2=second important......7=least preferred in rank |  |

Respondents rated 'flow of actual information to the investors about the financial market' as one of the most important strategy for the corrective measure of today's market inefficiency. Respondents also specified monitoring mechanism for determination of stock price as the second preferred strategy in this regard. Similarly, third important issue appeared as establishment of stock pricing institution for the
corrective measure in today's market mechanism. Rest two variables were not found very important in respondents viewpoint.

Hence on the basis of above analysis it can be concluded that stock market inefficiency in Nepalese stock exchange can be removed by improving the factors and giving priority to them according to their significance.

Friedman's chi-square test was computed to find out the significant differences among the ranked variables. The chi-square statistics is high based on the responses collected from 50 respondents. The statistics was found significant at ' 0.01 ' level of significance in 4 degree of freedom. Therefore, it can be concluded that following information, better monitoring mechanism and establishing institution for price determination were found the most important corrective measures of Nepalese capital market.

### 4.3 Major Findings

Finding of present analysis are very important for the academician and researchers. Researchers can design future research to investigate research issues in this regard and practitioner can play appropriate roles in minimizing the artificial price fluctuation in Nepalese capital market.

The secondary data analysis showed, the high price volatility was existing in Nepalese capital market in past few years. It shows high price fluctuation during 2001 to 2007. The entire companies share price was found decreased sharply in the end of year 2002. The share prices of entire companies are high before and after that date.

The analysis also shows that the prices of the companies are in decreasing trend at beginning of 2003. After this date prices are in increasing trend from the beginning of January, 2004. Hence analysis shows the high price volatility in Nepalese share market. The high price volatility is observed in case of NABIL bank limited and Unilever Nepal limited. The share price of other listed companies also has significant price fluctuation observed in Nepalese share market.

Hence, research findings shows that there is a high price fluctuation in Nepalese capital market. So the entire study attempts to identify the affecting factors and responsible parties in such price volatility in Nepalese capital market.

Primary data analysis identified very important findings based on the analysis of information generated from primary survey. In general, high price volatility was observed in Nepalese capital market in past few years and respondents reported responsible causes for such price volatility, responsible institutions in this regard, major environmental factors of artificial price fluctuation, and appropriate measures to solve the problem in this regard.

Survey design was based on 50 respondents. Out of them around 75 percent were male and $33.5 \%$ were female. More than $62 \%$ of the respondents were from the age 30 to 50 years old. And, there were equal number of respondents from five different sectors for the present primary survey design.

Lack of developed share market was found as one of the main causes in price fluctuation in Nepalese capital market similarly few number of competitors in share market has been identified as the second major reason of abnormal price fluctuation.

After that investor are not being rational, lack of such institution that facilitate flowing information and pricing of stock, stock price is not actual because organizations manipulate their financial statement and price of share is not affected by the market are also identified as significant causes respectively.

Differences of all the above-described variables were found significant among each other in one sample ' $t$ ' test. The statistics even shows the differences significant at $99 \%$ level of confidence. Brokerage firm, stock exchange and market maker were found equally responsible for market inefficiency but the listed companies were found relatively less responsible in this issue. One sample ' $t$ ' test showed the significant differences among the variables.

Adverse economic situation of the country was found the most relevant affecting force for the inefficiency of Nepalese capital market. It is the one of the external influencing force in Nepalese capital market. Small size of Nepalese capital market and instable political environmental were identified as other two relevant factors. Similarly the regulatory bodies such as security board was found inactive and ineffective that was also identified as the fourth affecting factors in Nepalese capital market inefficiency. These identified factors were found significantly different among each other in chi-square test.

Few appropriate measures were found from the survey. Flow of actual information to the investors about the financial market' was identified as one of the most important strategy for the corrective measure of today's market inefficiency. Respondents also
specified monitoring mechanism for determination of stock price as the second preferred strategy in this regard. Similarly, third important issue was appeared as establishment of stock pricing institution. All the variables were found significantly different in Friedman's chi-square test.

## CHAPTER-V

## SUMMARY, CONSLUSION AND RECOMMENDATIONS

Present chapter attempt to summarize the major findings of the earlier analyses and results. Researcher also attempts to draw some meaningful conclusions based on those findings. Such conclusion might be very much useful for academicians and practitioners. Based on the summary and conclusion of the study, researcher also attempts to identify some recommendation for the effective action plan to develop Nepalese capital market. Therefore, it analysis a very important contribution for the development of Nepalese capital market. Issues regarding to summaries, conclusions, and recommendation are discussed in the following sections.

### 5.1 Summary

Lack of developed share market was found as one of the main causes in price fluctuation in Nepalese capital market. Similarly few numbers of competitors in share market were also identified as the second major reason of abnormal price fluctuation. Brokerage firms, stock exchange, and market maker were found equally responsible for market inefficiency. Adverse economic situation of the country was found as the most relevant affecting force for the inefficiency of Nepalese capital market. Similarly, small size of Nepalese capital market was identified as second important factor and the third one was the instable political environment.

Respondents rated 'flow of actual information to the investors about the financial market' as one of the most important strategy for the corrective measure of today's
market inefficiency. Respondents also specified monitoring mechanism for determination of stock price as the second preferred strategy in this regard.

### 5.2 Conclusion

In conclusion, at present research is a very important breakthrough in analyses of stock price behavior in Nepalese capital market. It has investigated secondary information and found high price volatility pattern in Nepalese capital market. Further, it has also identified the responsible factors in such price volatility, responsible agencies for price volatility, and some potential measures to minimize such artificial price volatility in Nepalese capital market.

Present study was found very successful. Most of the test showed significant and meaningful results. It can concluded that the findings of the study will be pertinent to both academician and practitioners. Present research might be a good basis in designing very useful future research. Similarly the facts and results found in the research might be very interesting for interest groups and stockholders of Nepalese capital market.

### 5.3 Recommendations

Based on the above discussed findings and conclusion present research recommend few major issues to the concerned authority, academicians, and practitioners. It is necessary to make a better information disclosure system in Nepalese capital market. Concerned authority should have better mechanism of supervision and control of artificial price fluctuation in market to prevent such factors. Furthermore security
board make more effective and active control mechanism for healthy practices in Nepalese capital market.

Hence the following major points are recommended to minimize the abnormal price fluctuation in Nepalese share market that directly or indirectly support in the development of Nepalese capital market. Researcher has found lack of develop share market as one of the main causes in abnormal price fluctuation in Nepalese share market. Thus some relevant points to uplift the existing Nepalese share market are recommended as follows.

### 5.3.1 Publication of Financial Information

it is recommended that the NEPSE should enforce all the listed member companies to publish latest financial information to general public within a specified timeframe. In the mean time, NEPSE should also publish updated data and information related to the performance of the listed companies and should be made it publicly available.

### 5.3.2 Adoption of Advance and Effective Regulatory Framework

Though the establishment of Nepal stock exchange has not been so long, the prevailed regulatory process has not been found effective and satisfactory. The role and responsibility of NEPSE and security exchange board should be clear and effective towards the monitoring and supervision of the exchange activities. The role of market makers, brokers and other stakeholders should be more effective and their activities should be focused on fair- trading. The HMG as well as Nepal Rastra Bank have to play parental role in the systematic development of capital market. The mal-practices
like insider trading should be penalized immediately after the revelation. NEPSE has to keep proper co-ordination with company registrar's office, ministry of finance, Nepal Rastra Bank, Security Exchange Board and all listed Companies, while making modification in the current policy measures.

### 5.3.3 Campaign for the Investors Awareness

for the improvement of Nepalese stock market smoothly, the potential investors should be informed and educated properly about the prevailing rule and regulation of NEPSE . more over, they should have accesses to the current affairs of the business as well as relevant financial information of the listed companies. If the investor are aware of the prevailed rules of fair- trading, then they will be able to analyze the market situation and make sell or buy decision after proper risk return analysis of the particular stock. If all the investor are benefited by the stock market transactions then it will have better image and increase the interest amongst investors to invest in the stocks and there will be no chance for unfair trading as well as abnormal price fluctuation.

### 5.3.4 Improvement in Infrastructures

Nepal stock exchange should improve its infrastructure. Present available in the NEPSE's trading floor are not adequate to make quick and reliable stock transaction. On line information providing system, computer aided transaction facility and computerized dealing therefore, it is advisable to the NEPSE to adopt modern and sophisticated technology like ATM. VISA Card as availed in the developed share market.

### 5.3.5 Effective use of Banking System for Share Trading

effective and well-established banking system is an essential prerequisite for the successful stock market. As the present banking system seems to be quite sufficient to make clearing of cheques and other financial transactions, the transaction of stocks should be canalized through the banking network so as to make fast service will be materialized in share trading also.

For this effective transaction, NEPSE should make proper initiation with the banks and finance companies for the market creation and cheaper underwriting of shares.

### 5.3.6 Establishment of Regional Stock Exchange

at present, only NEPSE has only a Kathmandu based office for entire stock exchange activities, which has reverse impact to the outsider investors as well as bank and financial institution established in outside the Kathmandu valley. Thus, it is advisable to the NEPSE to open regional stock exchange in the country to provide and easy excess to all investors and facilitate public transaction. Then after the volume of activities will be strengthened and have positive impact in the development of the Nepalese capital market.

### 5.3.7 Preparation of Sector Index to Minimize Risk

till now, NEPSE prepares only market index that is an average of all traded stocks. So stock market is the lacking position of the sector index like bank, financial companies, insurance companies, hotel industries and other industries. Sector indices help to the
potential investors to compare the risk and return inherited with the available stocks and beat the market by proper analysis.

### 5.3.8 Development of new Financial Instruments

for the expansion of the capital market, different type of instrument should be needed. For this purpose another recommendation is for researchers of academicians. Researchers should attempt to investigate in hidden or unexplored issues using qualitative and behavioral research to identify the most appropriate strategy to develop Nepalese capital market. Similarly, the recommendation to the practitioners is active participation in development of fair market mechanism in Nepalese capital market. Practitioners should not be the agent of rumor and propaganda but they should encourage in making the fair transaction of shares based on company performance and their dividend policy.

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## Appendix

The functions, duties and powers of SEBON as per the Act are as follows.

- To offer advice to Government on matters connected with the development of the capital market.
- To register the securities of corporate bodies established with the authority to make a public issue of its securities.
- To regulate and systematize the issue, transfer, sale and exchange of registered securities.
- To give permission to operate a stock exchange to any corporate body desirous of doing so, subject to this Act or the rules and bye-rules framed under this Act.
- To supervise and monitor the functions and activities of stock exchange.
- To inspect whether or not any stock exchange is executing its functions and activities in accordance with this Act or the rules and bye-rules framed under this Act, and to suspend or cancel the license of any stock exchange which is not found to be doing so.
- To issue licenses to conduct the business of dealing in securities, subject to this Act, or the rules and the bye-rules framed under this Act, to companies or institutions desirous of conducting the business of dealing in securities.
- To supervise and monitor the functions and activities of securities-dealers.
- To grant permission to operate collective investment schemes and investment fund programs, and to supervise and monitor them.
- To approve the bye-rules concerning transactions in securities framed by stock exchanges and institutions engaged in the business of dealing in securities, and, for the purpose of making necessary provisions concerning the development of the capital market and protecting the interests of investors investing in securities, issue orders to have necessary alterations made in such bye-rules of stock exchange and institutions engaged in the business of dealing in securities.
- To systematize the task of clearing accounts related to transactions in securities.
- To supervise whether or not security dealers are behaving in the manner prescribed in this Act, or the rules and the bye-rules framed under this Act, while conducting business of dealing in securities, and suspend the license to conduct the business of dealing in securities in case any securities dealer is not found to be behaving accordingly.
- To make or ensure necessary arrangements to regulate the volume of securities transacted and the procedure of conducting such transactions in order to ensure the promotion, development and clean operation of stock exchanges.
- To make necessary arrangements to prevent insider trading or any other offenses relating to transactions in securities in order to protect the interest of investors in securities.
- To review or make arrangement for reviewing the financial statements submitted by the corporate bodies issuing securities and security dealers, and issue directives deemed necessary in that connection to the concerned corporate body.
- To systematize and make transparent the act of acquiring the ownership of a company or gaining control over its management by purchasing its shares in a single lot or in different lots.
- To establish coordination and exchange cooperation with the appropriate agencies in order to supervise and regulate matters concerning securities or companies.

To discharge or make arrangements for discharging such other functions as are necessary for the development of securities and the capital market. (www.sebon.com.np )

## ANNEX-1:

## QUESTIONNAIRE

November 15, 2008

Dear respondents,
The undersigned encloses herewith the questionnaire prepared for the research work for the partial fulfillment of the requirement for the MBS (masters of business students) degree. You the respondents are cordially requested to complete the each questionnaire after duly filled up. The views collected from you will only be used for the purpose of this study. I heartily request to you to complete the questionnaire without any biasness. Your valuable cooperation will be contributing a lot for all concerned parties of Nepalese share market and this research as well.

Yours truly,
$\qquad$

Bimal Kandel
(Researcher)

1. Please give your opinion in regard to the following question of causes that have significance contribution for abnormal price fluctuation in Nepalese share market.

| Causes | Totally disagree 1 | Disagree <br> 2 | Slightly disagree 3 | Slightly <br> agree <br> 4 | Agreed <br> 5 | Totally agreed 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Irrational investor |  |  |  |  |  |  |
| Companies manipulate their financial stmt. |  |  |  |  |  |  |
| Lack of facilitating institution |  |  |  |  |  |  |
| Share price affected by the market rate |  |  |  |  |  |  |
| Demand and supply do not affect the price of the stock |  |  |  |  |  |  |
| Limited no of investor in share market |  |  |  |  |  |  |
| The developing stage of share market |  |  |  |  |  |  |

2. What you think about the responsible agencies for making market inefficiency in Nepalese stock market?

| Agencies | Totally |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| disagree |  |  |  |  |
| 1 | 2 | Disagree | Slightly | Slightly |
| disagree |  |  |  |  |
| agree | Agreed | Totally |  |  |
| agreed |  |  |  |  |$|$| a |
| :--- |

3. What you think about potential affecting factors for Nepalese stock market inefficiency. Rank them in accordance to their significance. Please allocate 1 to the most preferred, 2 to the next and so on.

- Adverse Economic Situation
- Instable Political Situation
- Non-Convertibility of capital account for foreign investment
- Tax policy of the government imposing tax in dividend \& capital gain $\square$
- Stock exchange board is not active and effective
- Not having effective law \& policy
- Small size of capital market

4. what do $u$ think about the improving factors to remove such inefficiency in Nepalese stock market. Please give the priority by allocating 1 to the most preferred, 2 to the next and so on.
a. by flowing of actual information to the investor about financial market/ companies.
b. By establishing stock pricing bodies/ institution.
c. Stock pricing should e based on market interest rate.
d. Stock price should be determined by demand \& supply of stocks.
e. By enhancing strong monitoring \& controlling mechanism for determination of stock price.

Procession of The Respondent :
Gender of Respondent :
Age of the Respondent :
Age of the Respondent :

