

# Chapter – I

## Introduction

Boosting of the nations economic growth and solving the problem of under developed company is widely depends upon the nature of its economic infrastructure. One of the basic elements in achieving a self – reliant growth of economy and for sustaining of the desired level of economics development is an accelerated rate of investment, capital formation in the economy and the rate of investment or capital formation depend upon the efficiency of financial markets and institution. The financial system or market performs this function by mobilizing the nations saving into best uses. It does this by bringing together those who have surplus funds to lend and those wish to borrow to finance their expenditure. This financial market is broadly classified as Money markets and Capital markets. Money markets refer to a market where security of less than one-year maturity is traded where as capital market is the market for long term debt and corporate stocks. The existence of an organized securities market is considered to be a pre-requisite for a modern free enterprise as well as for a mixed company.

### **1.1.1 Capital market: -**

Investment decision are taken with in the frame work provided by a complex of financial institutions and intermediaries which together comprise the capital market," capital market means anybody or individual whether incorporate of not, contributed for the purpose of regulating or controlling the business of buying and selling or dealing in securities"(Bhalla, 1995:21).

It is just the market for capital funds. The word capital used in this context implies along term commitment on the part of lender and long-term need for the funds as part of the borrower. Both lenders and borrowers coming together in capital market to play effective financial intermediaries role in primary and secondary market through the use of various long term capital market instruments. It has a vital role in promoting efficiency and growth. It intermediates the flow of funds from those who want to save a part of their income from those who want to invest in productive assets. It is the market, which provides the mechanism for channeling current saving in to investment in production facilities that is for allocating the country's link with future since current decision regarding allocation

of capital resources are major determining factors of tomorrow output. The capital market plays a crucial role in shaping the individual in investment and portfolio decision.

Capital market consists of securities market and non - securities market. Securities market implies mobilization of funds through issuance of the securities like shares, bonds and debentures by corporate sectors and bond bills and debenture by government. These securities traded in the secondary market are generally negotiated and hence can be traded in the secondary markets. Non-securities markets refer to the mobilization of financial resources by the financial institution in the form of deposits and loans. Primary and secondary markets are the two wings of the capital market. Primary market concerns with the issue of new companies stock where as the secondary market deal with the previously issued securities. The majority of all capital market transactions occur in the secondary market. The proceed from the sale of securities in this market do not go to the original issuer which means that it does not create new additional capital .in other words, securities are traded among the individual as well as institutional investors

The structure of capital market can be shown as follows: -

### **1.1.2 Prices of securities: -**

The force of supply and demand interacts to determine a stock market price. Prices move in trends because if an imbalance between supply and demand when the supply of the stock is greater than the demand the trend will be down as there are more sellers than buyers when demand exceeds supply, prices tends to rise. There are essentially two concepts to explain the movements of stock prices

They are: -

1. Technical analysis
2. Fundamental analysis

In technical analysis, the analyst record historical financial data in charts, study these charts in an effect to find meaningful patterns and used predict the movements of a single security; same are used to predict the movements of market index; and same are used to predict both the action of individual securities and the market action. Fundamentalists forecast stock prices on the basis of economic, industry and company statistics. The principal decision variable ultimately takes the form of earnings and dividends. The fundamentalists make a judgment of the stock's value with risk return framework based upon earnings power and the economic environment. Fundamental analysis is an essential core skill for any investor as well as it helps to evaluate a company on the basis of its sales, earnings, dividends, products, management and other economical and industrial outlook.

### **1.1.3 Variable affects the price of securities: -**

Basically, prices of securities are determined by the interaction of the demand and the supply of corresponding securities. There are many other reasons that cause the stock prices fluctuation. Major of them can be classified as political factors, economic factors, socio- cultural factors and technological factors. these variables may be closely related to the internal factors of the corresponding companies like the dividend policy of the company, business volume and profitability position of the company or to be the external factor like the economic conditions of the nation, government monetary policy, political –legal, socio-cultural and technological environment of the company. As a whole these major factors that affect the price of the security can be presented in the following chart.

#### **1.1.4 Securities market in Nepal: -**

The concept of securities market emerged in the world some hundred years ago this came into practice in Nepal just thirty years ago. It's history began with the flotation of shares by Biratnagar jute mills ltd and Nepal bank ltd, in 1973 A.D. introduction of company act 1951 the first issue of government bond issued in 1964 and establishment of securities exchange center ltd in 1976 were other significant development resulting to capital market.

Security board of Nepal (SEBON) was established on June 7, 1993 as an apex regulator of securities markets in Nepal. The main objectives of SEBON are to regulate and develop the securities market and protect investor's rights.

Securities exchange center a trading institution, which was renamed as Nepal stock exchange (NEPSE) limited later in 1993 created new environment in Nepal's capital market. The basic objectives of Nepse is to smooth marketability and liquidity to government and corporate securities by facilitating transaction in its trading floor through market intermediaries, such as broker, market makers, etc and it is a non-profit organization operating under securities exchange act, 1983. NEPSE opened its trading floor on 13th January 1994 through licensed members.

Securities exchange center (SEC) used to carry out both the function of security board and NEPSE before the board was established. Any corporate body desire to carry out the transaction of securities may submit application to the board to obtain its license.

NEPSE has been the only secondary market in Nepal (organized stock exchange) for security transaction. Other forms of secondary market such as Octant 3rd and 4th markets have not been introduced yet.

The stock exchange provides floor for trading the shares of listed companies creating the liquidity in shares markets. The liberal financial policy adopted by Nepalese government after the restoration of democracy tried to reform the financial market of Nepal. That result open practice of buying and selling of securities in the open floor of NEPSE maintaining the suitable market price of the shares. In general, the prices are determined according to the demand and supply of the shares.

## TRADING SYSTEM OF NEPSE

### Automated Trading Mechanism and its Major Features

NEPSE replaced the open out cry trading system with a fully automated screen-based trading system (ATS) 24 August 2007, under the CFG project of the Nepal Government. The Asian Development Bank had provided US \$ 300 Thousand to automate the system. The system helps eliminate all possible human errors of the open cry system. Several international practices have been incorporated to make the system internationally applicable and modifications made to customize the existing rules and regulations of the country therefore the following features are found in the automated trading system.

**1. Client management:** client management enables a broker to create a client. Without creating a client the broker will not be allowed to place order for that particular client. The broker has to insert various details of the client out of which client for a particular broker. After receiving an order the broker has to place the order for that client on a FIFO basis of the order registered by the client's in the broker's office.

**2. Order:** It is an expression of interest to either buy or sell a specified quantity of a stock either at a specified price or at the current market price. Clients give orders to licensed brokers. There is an order entry form in the system through which brokers place the purchase or sell order. All the information required for purchasing or selling a stock should be submitted by the broker. Generally four types of order can be placed.

**Regular:** An order which is completed on the exchange and that confirms the order of lot size or greater than that.

**Odd-lot:** An order which is completed on the exchange and that confirms the order less than lot size.

**Manual:** An order which is placed by the brokers and reported individually by buying and selling brokers.

**Block:** An order which is placed by the brokers and confirms to the minimum block trade quantity specified by the exchange and is reported individually by buying and selling brokers.

**3. Price:** An amount which buyers quote in their buy or sell order. Investors as usual can quote a price in three ways- fixed price, price in range or market price. If brokers find the price within their range they enter the relevant details to execute transactions. In present system the order entry form in computer has been developed to indicate the price either in limit or market. If the price is given in fixed, the broker insert the fixed price and if it is given in range they will insert the best price for their clients. The brokers most always attempt to execute transactions to protect their client's interest. If the investor is a seller he/she must attempt broker must attempt to buy at low prices. If the price is market then broker will execute the order at a market price.

**4. Execute At:** This represents the phases of trading when to execute the order.

There are three phases during which the broker can place an order to execute transactions. Such phases are:

**At the Open (ATO):** ATO indicates that the order should be executed when the market opens. In order to execute transactions at ATO the member broker has to place an order to execute it at ATO. All ATO orders will be accumulated in the system till the ATO execution time and then they will be executed at the best price at the opening of transactions. ATO gives the price, quantity and time priority for the execution. At present NEPSE has set 11:30 A.M. to 11:55 A.M. for the placement of orders. The engine calculates the best price and matches the order at 12:00 noon, that is, when the market opens. In this case, a price can be quoted with in the range of 5 % of previous close price. Once the ATO phase is over a price can be quoted with in the range of 2 percent of LTP. ATO determines the opening price for stock. if there are no match able ATO orders for a stock the open price of a stock will be equal to the previous close price.

**Continuous trading:** this is the phase that indicates orders should be executed while the market is in progress.

**At the close (ATC):** this is time by when orders should be executed. The system provides facility to generate the ATC price of a stock either by taking the average of the price of last n transactions or the average of the price of the last n minutes.

Currently NEPSE uses the average of last n transactions where n equals to 1, that is, the LTP of a stock at close is the ATC price or closing price.

**5. Retain Until:** A customer can give an order to retain until the specified period as explained below unless it is executed.

**End of Day (EOD):** This indicates the placed orders if not executed will be retained until the end of day.

**Good Till Cancelled (GTC):** This indicates the order if not executed should be retained until it is cancelled. The system has provided facility for exchange to set the time period in days till which the pending orders can be retained in GTC.

NEPSE has adopted an order-driven market system. so each and every order entered should be backed by written order. in those orders the clients must specify the validity period of the orders but if they do not mention the time period the orders will be valid for 15 days. In this case GTC will be 15 days.

**6. Conditions:** This specifies the conditions under which the order could be executed. The conditions are as below.

**None:** This indicates there are no conditions for execution of orders.

**Immediate or Cancel (IOC):** This condition indicates that the orders should be executed in full or part immediately if not executed immediately the unexecuted orders would not be sent to the public order book but cancelled immediately by the system.

**Fill or Kill (FOK):** This condition indicates the order must get executed entirely or cancelled immediately. The unexecuted order is not sent to the public order book but killed (cancelled) by the system immediately. NEPSE has modified the system to allow entering the quantity of a stock to be traded either at the multiple of lot size or greater than that.

**All or None (AON):** This condition indicates the order must get executed entirely and if it is not then the order is sent to the public order book. In this condition too, NEPSE has modified the system to allow entering the quantity of a stock to be traded either at the multiple of lot size or greater than that.



**7. Market Depth:** It is the provision made by the stock exchange to facilitate the bid and offers. Under this provision the member broker before inserting the bid and offers for certain quantities at certain price for the particular company can view the bid and offer placed by other brokers. This not only facilitates negotiations but also contributes to the execution of transactions at market prices.

**8. Settlement:** After automation NEPSE has continued T+3 for settlement but there is a little bit change in the process. If the trading is done at "T" and at T+1, buying brokers have to submit bank vouchers for settlement along with a covering letter. At T+2, selling brokers must submit share certificates with a covering letter. AT T+3, NEPSE prepares billing for payment and this will be forwarded to the bank.

Once the settlement is done buying brokers with the consultation of clients must decide and present the purchased shares if they want to record it as a blank transfer. This must be completed within T+5.

**9. Blank Transfer:** This is not a new system. Under this mechanism an opportunity to derive the market benefit is provided. But presently, buying brokers must complete the BT process within T+5. The transactions that are executed can be recorded in different ways and NEPSE has considered all possible retention. The followings are the major key points to be considered.

1. This is related only with the buying of securities.
2. The buyer may decide to have market benefits either for capital gains or to minimize the loss.
3. In order to do this s/he may partly send for name transfer or may register it in blank transfer.
4. If s/he registers the total purchase in blank transfer and can put for sale and if only part of the shares are subscribed then s/he can handover the part and the part can be forwarded for name transfer to the concerned company. In order to do this s/he has to cancel the bank transfer for that portion.

### **1.1.5 Financial companies in Nepal: -**

History of finance company in the global context is considerably longer in comparison to that in Nepal. In the world rapid growth of banking sector has been taken place since 1960s. Furniture Company in USA called cowpeas waits sons was the first company to provide its clients these facilities in 1807 A.D.

In Nepal with economic liberization policy of GN, finance companies came into operation in 1985 under the finance companies act 1965 the first company to register in register office was a government owned, Nepal housing and development and finance company which came in to operation in 1992 only after the first amendment of act in 1992. Nepal finance and saving company limited became the first finance company to be operated by private sector after securing license from Nepal Rastra bank (NRB) in December 1992.the finance company usually accepts time deposit as well as advance loan to the individual firms companies or institution for agriculture as well as non-agriculture sectors in order to promote their economic benefits. They also perform function of merchant banking with prior approval of NRB They are popular among low-income and medium class people for providing hire purchases facility and others loans. Many finance companies have come into operation especially in around Katmandu valley and other urban areas. There were altogether 150 companies listed in NEPSE at the end of the fiscal year 2007/2008 among which were 58 are the finance companies.

## **1.2) Focus of the study: -**

Profit oriented enterprises require large sum of capital funds for their smooth operation. Short intermediate and long-term funds are essential to grow and expand organization activities. However long –funds are most essential for their future growth and prosperity which most of the organization garner from financial market. Securities price plays vital role in channeling the flow of capital to various industries. The price behavior of securities has been a controversial matter among the academicians investing on economic and financial sectors. To some extent in advanced economies with fairly competitive market systems the pricing of securities in the capital market has left some space for satisfaction. The market prices of the securities are competitive and determined by interlinked market forces. There ought not to be any different between present values of share. In other words securities prices are determined by the demands and supply of securities. Market tends to set an equilibrium price that equates the supply with the demand.

Investor invests their money with the expectation of acquiring good returns from their invested funds. Often time's investors invest their funds without having through analysis of share purchased from the companies, which may not provide them expected return. This study therefore attempts to identify the stock price behavior of financial companies trading with NEPSE, and this study mainly focuses on the effect of price trend, volume of traded stock, market behavior and impact of signaling factors on NEPSE index.

## **1.3) Statement of the problem: -**

Today stock market has become a global but the stock market in Nepal is still at infant stage. Stock market has been the major investment sector in the country. so by promoting the stock market in sizeable economic sector will further help to develop economy through the mobilization of adequate investment in the productive sector. Different elements like price trend, NEPSE index, volume of stock traded, rate of listing and signaling factors may influence investment environment.

Usually the prices of common stock in primary market will be at par value but in secondary market it may be different .the long securities processing cycle has provided hindrance to the development of security market .the investors have to

wait for long time to obtain security. This has further restricted them from many opportunities. Low price and low trading volume of the company have direct influence to its market value. Like wise lack of information dissemination and lack of transparency that investors have been experiencing are considered to be an additional problem in Nepalese stock market. This problem consequently affects the positions of the company market information system and corporate governance.

Capital market in Nepal cannot be considered a perfect market and there fore the floor price of the listed company's shares cannot represent true value due to the brokers control over the market. The option could be either undervalued or overvalued stocks. It is true that one can encounter various problems in capital market. Hence realizing the fact this study has attempted to seek the answer of the following issues.

What is the trend of stock price?

How the stock price fluctuates in the market, what is the impact of price trend on transaction?

What is the behavior of the NEPSE index?

What are the share prices of listed financial companies?

#### **1.4) Objectives of the study: -**

The main objective of this study is to analyze the share price behavior of the listed financial companies. To fulfill the main objective, the following specific objectives are determined:

- 1) To Study and analyze trend and volume of stock traded on Secondary market.
- 2) To find out the relationship between BVPS and MVPS of finance companies.
- 3) To analyze the risk and return in the common stock investment of the listed finance company.

### **1.5) Limitation of the study: -**

This study will have some limitation. Basically, the study is done for the partial fulfillment of masters of business studies (MBS). Time constraints, financial problem and lack of research experience will be the primary limitations and other limitations are as follows: -

1. The research will be based on the data provided by NEPSE from its official records.
2. The error in the secondary sources data is sure to exist.
3. Only listed finance companies in NEPSE are used for analysis.
4. Stock price trend will be shown only with the help of NEPSE.
5. Foreign information and rules affecting the share market will be ignored.
6. This study based on fiscal year 2003/04 to 2007/08.

### **1.6) Signification of the study: -**

Investment practices and procedures in Nepal under the organized stock exchange are still in a primitive stage. Investment in secondary stock market play crucial role in financial sector of the nation's economy. Stock markets being on of the prominent sources of economic development will try to attract its potential investors who are there biggest assets.

After the political change of 1990, public participation in securities investment has increased significantly. But due to the investor's inadequate knowledge, it has not been able to achieve its expected target. Public companies obtain funds from the public investors through financial markets. The long run objective of every company is to maximize shareholder's wealth position thereby producing good return for the investor's stocks.

The general public seems to have huge amount of utilized saving funds due to lack of wider investment opportunities, which could provide them an attractive rate of return. However, some of the investor's have been attractive by the increasing trends of MPPS of public companies, specially the joint venture commercial banks. They are investing their saving funds on the common stocks of public companies with the higher capital gain in the future. But most of the private or individual investors (existing and potential) are not aware of public financial companies' real

financial strength and weakness where they have invested or wish to invest their funds. Similarly, they may not be able to carry out empirical analysis and interpretation of the company's real financial position on the basis of available data and information to reach the final decision.

Various studies have been conducted in the past to measure the performance of the company listed in the security market. Some studies have also been conducted separately to determine the stock price behavior. This study is expected to be useful to the entire people from different works of life particularly to the financial managers of corporate firms to understand the share price behavior with respect to the change in financial positions of their respective firms.

### **1.7) Hypothesis of the study: -**

Following hypothesis has been applied in the study

- A) H0: The order of MPPS of stock of Sample Company is random.  
H1: The order of MPPS of stock of Sample Company has not random
- B) H0: Correlation coefficient between MPPS and BVPS of the sample finance company is equal to zero.  
H1: Correlation coefficient between MPPS and BVPS of the sample finance company is not equal to zero.
- c) H0: The MPPS value is dependent on BVPS of sample finance companies.  
H1: The MPPS value is not dependent on BVPS of sample finance companies.

### **1.8) Organization of the study: -**

This study has been organized into five chapters each denoting to some aspect of the study of stock price behavior .the titles of each of these chapters is as follows-

Chapter 1: Introduction

Chapter 2: Review of literature

Chapter 3: Research methodology

Chapter 4: Data presentation and analysis

Chapter5: Summary conclusion and recommendation

Introduction chapter covers general background of the study

statement of the problem, research objectives, limitation of the study, and importance of the study and organization of the study.

The second chapter focuses on review of literature. It contains the conceptual framework and past research literature on stock market behavior and different factor of the stock market.

The third chapter deals with research methodology to be adapted for the study consisting research design, source of data gathering procedure population and sample, research variables and data processing procedure.

The fourth chapter deals with presentation, analysis and interpretation of data. It consist the analysis of secondary data and major finding of research.

The chapter five states the summary, conclusion and recommendation of the study.

## CHAPTER –II

### REVIEW OF LITERATURE

The basic concern of the study is to focus on the pricing behavior of the stock of the companies listed in Nepal stock exchange so, in this chapter; an attempt is made to review some of the literature concerning the stock market in Nepal and abroad as well as the market price behavior. The price behavior of the stock and its trading activity has got the tremendous concentration in security investment. So, a better understanding of these determinants may increase investor's confidence in the stock market and there by enhance the effectiveness of corporate resource allocation. Hence more and more concerns over pricing behavior are arising and most of the concerned books bear some paragraph on this issue.

#### **2.1 Conceptual framework: -**

##### **2.1.1 Capital market: -**

A place where long term lending and borrowing takes place is known as capital market. Therefore the capital market is the market for long term borrowing and lending. The primary instruments of the capital market stock and bonds (equity and debts). Therefore includes both the new issue market and the old market. Capital market is concerned with long term finance: widely it consists of series of channels through which the saving of the community are made available for industrial and commercial enterprises and authorities .it is concerned with that private saving, individual as well as corporate, that are turned into investment through new capital issue and also new public loan floated by government and semi government bodies. In capital market demand for funds comes from agriculture, industry, trade and government while the supply of funds comes from individual or corporate savings, institutional investors and surplus of government.

The history of capital market is not so old for Nepalese context. The establishment of security exchange center 2033 b.s.developed the capital market developed the capital market.

The number listed companies and their trading was very negligible until the



Government of Nepal has made economic reforms along with broad financial policy in the process of economic liberalization. The privatization of public entities has been started and various banking and finance companies, these companies have to issue some of their share to the general public. So, the development of the security market in Nepal takes its place only after the establishment of these banking and finance companies.

### **2.1.2 Security market: -**

Security market interchangeably known as the integral part of capital market is in fact basis of the economy of a country .the most effective use of idle and surplus resources can be brought into practice only means of market mechanism. Security market, structural networks of savers and users of fund, is such a market mechanism, which mobilized the fund of savers to the users and thus this financialization boosts the industrialization and trading activities. This will bring the positive result to the economy as a whole. (Sharma, 2002:16)

There are two important functions of securities market namely the raising of funds in forms of shares and debentures and trading in the securities already issued by companies. While the first aspect is obviously much more important from the point of view of economic growth, the second aspect is also considerably important. in fact, if facilities for transferring of existing securities are abundant, the rising of new capital is considered assisted as the buyer of a new issue of security become confident that whenever he wants to get cash he can find a buyer of the security without much difficulty. This aspect is called the raising of new capital from the market. (Levine, 1992:33)

Security market sets a price for the securities it trades and makes it easy for people to trade them. Securities market facilitates the sale and resale of transferable securities. The securities market can be defined as a mechanism for bringing together buyer and sellers of financial assets to facilitate trading. Securities market is classified into two: the market in which new securities are sold is called the primary market and the market in which existing securities are resold is called the secondary market. Brokers, dealers and market makers create secondary markets. Brokers bring buyer and seller together with themselves actually buying or selling; dealers set price at which they themselves are ready to buy and sell (bid and ask price respectively). Broker and dealer come together in organized market of in stock exchange. (Gitman, 1992:457)

### **2.1.3 Stock exchange: -**

The stock exchange is an institution where quoted securities are exchanged between buyer and sellers. The stock exchange provides market in wide range of traded securities, generally of medium to long – term maturities, issued by companies', government and public organizations. (Winfield, 1985:22)

Most of the investors are attracted to the equity shares because of its marketability and liquidity. One may like to buy more shares or selling existing shares from time to time when he is need of money or when he wants to shuffle his portfolio. Since the stock exchange is a place where a large numbers of buyers and sellers congregate, one can, by and large, easily find his counter part for sale or purchase of shares. The investor can convert his shares into cash at the prevailing market price readily. The existence of stock exchange facilitates all these functions without which it is almost impossible to do so.

The key function of securities exchange is to create a continuous market for securities at a price that is not very different from the price at which they were previously sold. The continuity of securities market provides the liquidity necessary to attract investor's funds. Without exchanges, investors might have to hold debt securities to maturity and equity securities indefinitely. It is doubtful that many people would be willing to invest under such conditions. A continuous market also reduces the validity of security prices further enhancing liquidity. (Gitman, 1992:458)

The securities exchanges help to allocate scare fund to the best uses. That is by disclosing the price behavior of securities and requiring the disclosure of certain corporate financial data; they allow investors to access the securities risk and return and to move their fund into the promising investments. An efficient market is one that allocates funds to the most productive uses. Along with this, there is lot of functions of security exchange such as ready market and continuous market, evaluation of securities safety of transaction channaliazation of savings and widening the share ownership etc. however, besides these function, there are three things a security exchange must do:

Determine a fair price for the securities it trades or price discovery functions.

Enable transaction to be made at as low cost as possible or minimization of transaction cost.

Enable transaction to be made at this price quickly and easily or provision for liquidity.

### **Main function of stock exchange:-**

#### **Price discovery**

Security is a legal representation of the right to receive future benefits under conditions. Its value depends on expectation of the amount of those benefits and evaluation of risk involved. Expectation and evolution both the information available and the conclusions people draw from that information. Since the market may quite big, no single buyer or seller can influence the price of a share to any significant extent. Price discovery is the process of arriving at fair prices of securities. Fair price indicates the comparisons between fair offers price (lowest price at which any well informed trader willing to sell) and fair bid price (highest price at which any well informed trader willing to pay). Different markets do this in different way and different ways of organizing a market affect how closely the market approaches the ideal of fair prices. However, a very important fact that should not be forgotten is the concept of ideal market of market efficiency, which also the necessary pre-condition for approaching to the fair price. In an ideal market value of securities equal its price of securities and prices reflects all available information about the market.

In the securities market there is a great importance of demand and supply for price fixation. The price of a given stock is determined exclusively by the interacting forces of supply and demand converging on such stock at a given time, that the price and volumes of its part transaction are meaningful indications of the probable relationship of the future and demand pressure it is likely to encounter in the market and that such relationship is the most important element in determining the probable direction of the price movements. (Ackerman, 1980:85)

The stock exchange produces through its continuous process of evaluation, prices of securities as close as possible to investment value based on present and future income yielding prospects of various enterprises, capitalized at 'national rate of interest' the rate which will prevail if and when all the liquid savings are employed in to productivity purposes. (Gupta, 1982:148)

#### **2.1.4 Price determination: -**

The share price is determined in the floor by the interaction of market forces i.e. demand and supply. The price is determined by the point of equilibrium between supply and demand, the shifting of this balance results in continuous adjusting of price in search of the ever-changing new equilibrium. Then market price moves upward and downwards. There are many other reasons that causes the stock price fluctuation, major of them are economic, non-economic and market factors.

Dividend is the most important factors on the determination of stock price. Dividends are strongly influenced by the earnings power of the firm. There is a very close correlation between corporate earnings and dividends. Earning power, in turn is strongly influenced by interest rates. In this way, the most fundamental factor in stock price fluctuation lies in changes in corporate earning, which together with interest rates and business cycle trends, contribute to making up the economic factors influencing stock price.

The next influencing factors are non-economics factors, including changes in political conditions, such as administrative changes, change in weather and other natural conditions, and changes in cultural conditions, technological advance and the like. Similarly the other influencing factors are market factors or internal factors of the market considering of the tone of the market and supply – demand relations, may be cited as the third category that influences the stock prices. Besides these factors the stock prices are influenced by the corporate performance of the company, company's policy regarding the capitalization of earnings as well as government rules and signaling effect of the market.

#### **2.1.5 Theory of price behavior-**

The forces of supply and demand interact to determine a stock market price. If demand is high and supply is low then the price of the stock goes up and vice-versa. There are essentially two schools of thought to explain the stock price behavior.

They are: -

(I) Inefficient market theory

(ii) Efficient market theory

**Inefficient market theory: -**

Conventional approach has considered that market is inefficient, which includes technical analysis theory. Prior to the development of the efficient. Investors were generally divided into two groups, fundamentalists and technicians. (Reilly, 1986:347) the two groups are analyzed as follows:

**Technical analysis:-**

Technical analysis is based on the widely accepted premises that security price are determined by the supply and demand for securities. The tools of the technical analysis are therefore designed to measure supply and demand. Typically, technical analyst record historical financial data and charts, study these charts in an effort to find meaningful patterns to predict future prices. Some charting techniques are used to predict the movements of prices. Some are used to predict both the action of individual securities and the market action. The basic assumptions underlying technical analysis are listed below:

Market value is determined solely by the interaction of supply and demand.

Supply and demand is governed by numerous factors both rational and irrational.

A side from the effected of minor fluctuations in the market, stock prices tend to move in trends that persist for appreciable length of time.

Changes in trend are caused by shifts in supply and demand, no matter why they occur, can be detected sooner or later in charts of market action.

Some chart patterns tend to recur, and these recurring patterns can be used to forecast price movements.

Technical theory involves study of past volume and price data of the securities to predict future price fluctuations. Technical analysis theory of shares price behavior is based on past market information. On the assumption that history tends to repeat itself, it is believed that knowledge of past patterns of share prices will helped to predict future prices under similar circumstances. It involves the study of past market behavior with reference to various financial and economic variables are to forecast the future. The changes occur in financial and economic variables are to be adjusted in the light of the present situation. Technical analysts or

chartists as they are commonly called believed that they can discern pattern in price or volume movements and that by observing and studying the past behavior patterns of given stocks, they can use this accumulated historical information to predict the future price movement in the security. Technical analysis comprises many different subjective approaches, but all have one thing in common that is, belief that these past movements are very useful in predicting future movements. Technical analysts believe in the theory behind chart formations and patterns. They read charts much like ancient astrologers read and stars, looking "head and shoulders" formations. These, they believe, reflect the patterns of buying and selling accumulation and distribution of market psychology. Stock price always move in trends because of an unbalance between supply and demand. When the supply of stock is greater than the demand, the trend will be down as there are more sellers than buyers, when demand exceeds supply, the trend will be up as buyers "bid up" the price, and if the forces of supply and demand are nearly equal, the market will move sideways in what is called a "trading range". Even new information will enter the market and the market will begin to trend again either up or down, depending on whether the new information is taken as positive or negative. Trends, which are very brief, are called minor trends; those lasting a few weeks are known as intermediate trends and trends lasting for a period of months are major trends. By analyzing trend lines we can determine what trend is in force. It helps us to act safe in market both in bullish and bearish market.

Price moves in trends. A trend indicates there exist an inequality between the forces of supply and demand. Such changes in the forces of supply and demand are usually readily identifiable by the action of the market itself as displayed in the prices. Certain patterns or formations that appear on the charts have a meaning and can be interpreted in terms of probable future trend development.

### **Dow Theory**

The Dow Theory is one of the oldest and most famous technical tools and was originated by Charles Dow, who founded the Dow Jones company and was the editor of the Wall Street Journal around 1900. The Dow Theory, is used to predict reversals and trends in the market as a whole or for individual securities. According to Charles Dow the market is always considered as having three movements, all going at the same time. The first is the narrow movement from day to day. The second is the short-swing, running from two weeks to a month or more, the third

is the main movement covering at least four years in duration.

Dow Theory practitioners refer to these three components as

1. **Primary trends:** They are commonly called bull and bear markets.
2. **Secondary movements:** secondary movements are sometimes called corrections, which last only a few months.
3. **Tertiary movements:** these are simply the daily fluctuations are essentially meaningless random wiggles. Nonetheless, the chartists should plot the asset's price or the market average each day in order to trace out the primary and secondary trends. (Francis , !(1986:524)

### Fundamental Analysis

4. fundamental analysis approach involves working to analyze different factors such as economic influences, industry factor, governmental actions, firms financial statement, its competitors and pertinent company information like product demand, earnings, dividends and management in order to calculate on intrinsic value for firm's securities .The analysts who believes on fundamental facts to determine the intrinsic value of stock is popularly known as fundamental analyst or fundamentalist.
5. Fundamentalists forecast stock price on the basis of economic industry and company statistic. The principal decision variables ultimately take from earnings power and the companies' earnings, their management, economic outlook, firms' competitor's market conditions and many other factors. "(ibid)
6. The objective of fundamental security analysis is to appraise the intrinsic value of a security. The intrinsic value is the true economic work of financial assets. the fundamentalist maintain that any points of time every equal to the present value of the future stream of income from that stock discounted at an appropriate risk related rate of interest" (Bhalla, 1983:283). Therefore the actual price of security is considered to be a function of a set of anticipation. Price changes as anticipation changes which in turn change, as a result of new information in other words; a new piece of news is released, securities market prices will adjust towards the new values.

7. "The value of common stock is the simply the present value of all future income which the owner of the share will receive" (Francis, 1986:398). And the actual price should reflect intrinsic value of the stock i.e., good anticipation of cash flows and capitalization rate corresponding to future time period. But in practice, first it is not known in advance what the appropriate discount rate should be for a particular stock. Therefore fundamentalist estimate their intrinsic value by studying in detail of all matters that is relevant to company. There are various models developed by fundamentalists to reflect the price of the securities. Some of them are as follows:-

### Capital Asset Pricing Model (CAPM)

8. The basic foundation of the theory was laid done in the microeconomics studies of mean variance choice by Tobin (1958) and Markowitz (1959). The critical extension to equilibrium in the capital market and the development of the CAPM was accomplished by Sharpe (1964) and Linters (1965) (Stephen, 1978:886). like the portfolio models of Markowitz and Tobin, the Sharpe-Linters asset pricing model assumes a market of risk oversee consumes who can make portfolio decisions on the basis of the means and standard deviations exit (Fama, 1971:30). The CAMP substantiated the idea that, in competitive equilibrium assets earn premium over the risk less rate that increase with their risk, by showing that the determining influence on risk premium is the covariance between the asset and the market portfolio, rather the own or intrinsic risk of the asset. (Stephen, 1978:886) CAPM is concerned with two key questions;
9. What is the relationship between risk and return for an efficient portfolio?
10. What is the relationship between risk and return for an individual security?
11. The CAPM is based on the following assumptions;
12. Individuals are risk oversee
13. Individuals have homogeneous expectations they have identical subjective estimates if the means, variance and co-variances among returns, expected returns & standard deviations.
14. Individuals can borrow and lend freely at a risk free rate of interest.



15. The market is perfect; there are no taxes, there are no transaction costs; securities are completely divisible; the market is competitive.
16. The quantity of risky securities in the market is given.

### Gordon's Model

As per the Gordon's model about relationship of dividend policy and stock price, investors are not indifferent between current dividend payout ratio leads to increase in the stock prices for the reason that investors consider the dividend yield is less risky than the expected capital gain. Similarly investors required rate of return increase as the amount dividend decrease. This means that there exist a positive relationship between the amount of dividend and the stock prices.

- The model is based on the following assumptions.
- The firm is an all- equity firm.
- No external financing is available.
- Internal rate of return ( $r$ ), appropriate discount rate ( $K_e$ ) are constant.
- The firm and its stream of earning are perpetual.
- The corporate taxes do not exist.
- The retention ratio ( $b$ ) once decided upon is constant. Thus the growth rate ( $g=br$ ) is constant exist.
- The discount rate is greater than growth rate,  $K>g$ .

As per this model, the relationship between stock price and dividend varies on the following stages.

- a) **Growth firm ( $r>k$ )** : in case of growth firm the share price tends to decline in correspondence with increase in payout ratio or decrease in payout ratio or decrease in retention ratio. It means high dividends and stock price are free from each other in normal firm.
- b) **Normal firm ( $r=k$ )**: The price of share remains constant regardless of change in dividend. It means dividend and stock price are free from each other in normal firm.
- c) **Declining firm ( $r<k$ )**: The share price tends to rise in correspondence with rise in dividend and stock prices are positively correlated with each other in a declining firm.

### J.E. Walter's model

As per the study of J.E Walter on the relationship of dividend and stock price, dividend policy of a firm affects its stock price. The relationship between firm's internal rate of return and cost of capital are the determining factors to retain profits or distribution of dividend. The stock price will be increased with the increase in the retention ratio of the firm when the internal rate of return is greater than the cost of capital. Thus, as per Walter zero dividend policy will maximize the market value of share for growth firms.

### **Assumptions of Walter's model:**

Retained earnings constitute the exclusive source of financing the firm does resort to debt or equity financing.

The firm's internal rate of return and its cost of capital are constant.

Value of earning per share (EPS) and dividend per share (DPS) are remaining constant.

The firm has perpetual life.

The firm distributes its entire earnings or retains it for immediate reinvestment.

The relationship between stock price and dividend varies on the following stages.

**a) Growth firm ( $r > k$ ):** If the firm's internal rate of return exceeds the cost of capital such firms are known as growth firms. The relationship between dividend and stock price is negative in such firms. It means that more dividends leads to decrease in stock price and zero dividends will maximize the market value of shares for such growth firms.

**b) Normal firm ( $r = k$ ):** If the firm's internal rate of return and cost of capital are equal, such firms are called normal firms and there is no role of dividend on such firm's stock price. Dividend payout ratio does not affect the value of share whether the firm retains the profit or distributes dividend.

**Declining firm ( $r < k$ ):** If the firm's internal rate of return is less than cost of capital, such firms are known as declining firms. The relationship between dividend per share leads to increase in stock price of such firms.

Thus, Walter concludes that when the firm is in growth stage then dividend is negatively correlated with price of share. Similarly, in normal firm there is no relationship between dividend and stock price. In the same way, there is positive relationship between dividend and price of stock in declining stage of firm.

### **Efficient Market Theory:** -

In a competitive market, the equilibrium price of any goods or services at a particular movement in time is such that the available supply is equated to the aggregate demand. This price represents a consensus of the members trading in the market about the true worth of the good or service, based on all publicly available information. As soon as a new piece of relevant information becomes available, it is analyzed and interpreted by the market. The result is a possible change in the existing equilibrium price will hold until yet another bit of information is available for analysis and interpretation. "The role of information is two-fold: (a) to aid in establishing a set of security prices such that there exist an optimal allocation of securities among investors and (b) to aid the individual investor, though faces a given set of prices, in the selection of an optimal portfolio of securities". (Sharma, 2002:27)

The word "Efficiency" as applied to securities market has unfortunately been used to represent a variety of logically distinct concepts. In particular it means: (a) exchange efficiency (b) production efficiency (c) information efficiency. In this study, it is concerned only with information efficiency. "In an efficient market security prices 'fully reflect' available information" (Fama, 1976:133) Regard less of the form of information, it is the key to the determination of stock prices; therefore, it is the central issue of the efficient market concept.

An efficient market can exist if the following events occur.

A large number of rational, profit-maximizing investors exist who actively participate in the market by analyzing valuing and trading stock. These investors are price takers; that is, one participant alone can not affect the price of a security.

Information is free of cost and widely available to market participants at approximately the same time.

Information is generated in a random fashion such that announcement are basically independent of one another.

Investors react quickly and accurately to the new information causing stock prices to adjust accordingly. (Charles, 1943:425)

In such a market, the current prices of a security obviously "fully reflect" all available information. Similarly in a perfect and competitive economy compared of rational individual with homogenous beliefs about future prices, by any meaningful definition present security prices must fully reflect all available information about future prices. (Rubinstein, 1975:812).

In an efficient market, market participants acting in their own self-interest use available information to attempt to secure more desirable (higher returns) portfolio position. In doing so they collectively ensure that price movements in response to new information are instantaneous and unbiased and will 'fully reflect' all relevant information. Competition among participants to secure useful information will drive security prices from one equilibrium level to another so that the change in price. Price change will be random walk in response to the information.

"In an idle efficient market, everyone knows all possible to know information simultaneously, interprets it similarly, and behaves rationally,"(Bhalla, 1974:2). In such a world, the only price change that would occur is due to the result from new information. An initial and very important promise of an efficient market is that there are number of knowledgeable and profit maximizing investors adjust the information rapidly" (Reilly, 1986:166) ". The degree of market efficiency has important implications for the economy and for the information decision- makers. In an economic sense, it is important that security prices provide accurate signals that can be used to allocate capital resource correctly. Miss- priced security result in inaccurate allocation of capital." (Cheney, 1997:746)

In such a market all prices are correctly stated and there are no "bargains" in the stock market. Efficiency in this contest means the ability of the capital markets to functions so that prices of securities react rapidly to new information. Such efficiency will produce prices that are appropriate in terms of current knowledge, and investors will be less likely to make unwise investments. A Corollary is that investors will also be less likely to discover great bargains and there by earn extraordinary high; rate of return." (Bhalla, 1974:3).

The conclusion is that-" In an efficient market there are neither free lunches nor expensive dinners. It is not possible to systematically gain or lose abnormal profits from trading on the basis of available information." (Weston and Copland, 1996: 93-94). No one can consistently do better than the average. "Efficient market theorists believe that some do better then average because of luck. In fact they suggest that the 'traders'- those who buy and sell their stocks frequently- do less well than the stock market average by an amount equal to the commissions they pay. "(Rubinstein, 1975:815).

## **2.2 Review of stock market in international context:-**

Number of research study has been performed internationally on the stock market. Some of them are as follows:

In 1900, Louis Bachelier first tested the random walk model. He tested the model in commodity prices and found that those prices followed a random walk. He presented the evidence that the commodity speculation in France was a fair game. He also concluded that the current price of a commodity was an unbiased estimate of its future prices. After the discovery of the model large number of studies has been done through out the world.

In 1927, Slutsky proved that they appear to exhibit cycles and other patterns.

In 1933, Alfred Cowles found little evidence that stock market analysis could predict future prices.

In 1933, Alfred Cowles and Herbert E. Jones reported that stock prices moved with predictable trends. They gave a controversy to the random walk model as valid share price behavior model in USA. These findings remained a challenge against the random walk hypothesis for more than two decades.

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

In 1959, H.V. Roberts carried out tests by comparing the simulation of random numbers and the Dow Jones industrial average index (DJIA) for about one year starting from Dec-30, 1955 to Dec-28, 1956 and found similarity between these two series. He further observed that the first difference of these two series produced the same pattern. His work was significant in that he gave a number of methodological suggestions for testing what he calls the chance model. In particular, he suggested runs analysis for testing independence of price changes.

More (1962) studied weekly price changes of 30 randomly selected stocks for the period 1951 to 1958 and found an average serial correlation coefficient 1.06. The value was extremely low and indicated that weekly change data had almost no power in predicting future price changes.

Fama's study (1956) on the random walk model was one of the best definitive and comprehensive ever study conducted. He observed the daily proportionate prices of each 30 individual stocks of the Dow Jones industrial average. The time periods covered started such as serial correlation and runs tests to draw indifference about dependence of the price series. He calculated auto correlation coefficient for daily.

Change in log price series. He calculated auto correlation coefficient for daily changes in log prices for lag from 1 to 30 and found that the coefficient for daily changes in average was +0.30, which is near to zero. But on the daily changes, 11 out of 30 stocks had correlation coefficient more than twice their computed standards errors. The coefficient ranged from smallest 0.06 to the largest 0.123. However fame concluded," Dependence as such as small order of magnitude is from a practical point of view, probably unimportant for both the statistician and the investor."His intervals of four, nine and sixteen days to examine the possibility if price changes different from zero.

Roa and Mukherjee (1971) applied spectral analysis to weekly prices of an aluminum company's share and found no evidence contrary to random walk model.

Fama and French (1998) pushed the common expected returns argument for market efficiency one step further. They argued that there are systematic patterns in the variation of expected returns through time that suggested that it is rational. They find that the variation in expected returns tracked by D/P or the default spread (the slopes in the regressions of returns on D/P or the default spread) increase from high grade bonds to low grade bonds, from bonds to stocks, and from large stocks to small stocks. This ordering corresponds to intuition about the risks of the securities. On the other hand, the variation in expected returns tracked by the term spread is similar for all long term securities (bonds and stocks), which suggests that it reflects variation in a common premium for maturity risks. (Fama, 1991:1584)

C.B. Gupta had commented that the capital market serves as a link between suppliers and user of finance. It is a mechanism for the mobilization of public saving and channeling them in productive investments (Gupta, 1978:325). Thus capital market works as a powerful medium between potential investors and users of finance. Formally the necessity of the capital market was felt not only by the development countries like U.S.A, U.K., Germany etc. but later as a passage of time even the developing countries like India, Philippines, Bangladesh, Nepal etc begins to feel its necessity. Now they adopted it too.

In connection with the necessity of capital market, S.L.N. Simha in his book "The capital Market in India" has observed that capital is an extremely fascinating subject. An efficient capital market is an indispensable pre-requisite to economic

development. In fact even as regards the resources for the public sector, the capital market has a rather important role to play. (Simha, 1960:1).

The study conducted by Barry Bosworth on Industrial Production and Price of Common stocks, 1953-1975 has revealed that the stock markets and economic activity move in similar cyclical patterns. This fundamental relationship shows that the stock prices are meaningful in the sense of reflecting real economic variables.

The investment decision in the stock markets is a function of the prevailing market price and returns to capital. By return to capital is meant the algebraic sum of increment in the value of yield (Dolkha, 1962:82).

A senior economist Ross Levine in the finance and private sector department division of World Bank's Policy Research Department has mentioned in his article that stock market may affect the economic activity through the creation of liquidity. Many profitable investments require a long-term commitment of capital, but investors are often reluctant to relinquish control of their savings from long periods. Liquid equity markets make investment less risky and more attractive because they allow savers to acquire an asset-equity and to sell it quickly and cheaply if they need access to their saving or want to alter their portfolios. At the same time, companies enjoy the permanent access to capital raised through issues. By facilitating long-term, more prospect for the long-term economic growth. Further by making investment less risky on more profitable stock market liquidity can also lead to more investment (Levin, 1996:133).

"Common stock has one important investment characteristic and one important speculative characteristic. Their investment value and average market price tend to increase irregularly but persistently over the decades as their net worth builds up through the reinvestment of undistributed earnings. However, most of the common stocks are subject to irrational and excessive price fluctuation in both directions as the consequence of the ingrained tendency of most people to speculate or gamble, i.e. to give way to hope, fear and greed." (Chandra, 1995:35).

Hara, on the article on Financial Journal writes that information plays important role in the discovery of assets (securities). Further the writer says that. "The premise developed in this talk is that liquidity and price discovery is important dimension of asset markets and, by extension, of asset prices. That information should affect asset prices is hardly new; finance researchers have long focused on the information is efficiency of asset prices. The innovation here is the argument

that when information is asymmetric, uniformed investors, demand compensation for portfolio-induced risks which they cannot diversity.

"Note that my arguments do not imply that markets are necessarily inefficient, there are no arbitrage opportunities here, nor is there the provisional free lunch. Traders with superior information attaining full information levels is not credible- new information arrives old information, but if traders have divers divers information sets, then these expectations need not be the same across traders. Thus, as Om microstructure models, the adjustment of prices of full information values can differ widely across markets that are deemed efficient. And it is this difference in adjustment that gives rise to the effects discussed here." (Hara, 2003: 1351).

### **2.3 Review of Journals, Book and Articles of stock Market in Nepalese Context:-**

As stock market is in infancy stage in Nepalese context, there are limited books, journals and research studies concerning stock market and its pricing behavior. So, the available articles, books, previous research works, which are related to stock market are consulted and reviewed.

A book about capital market by Dr. R.S. Mahat entitled "Capital Markets Financial flows and industrial finance in Nepal" was written in the early period of the development of capital market and before the established of stock exchange. So Dr. Mahat made the first priority to established stock exchange for the development of stock market. He also writes that Nepalese stock market is still in infancy stage and some drawbacks to the development of stock markets are strong historical and social reasons as well as mass poverty and illiteracy in Nepalese society. He further points out that some conscious and educated people of urban area are also not investing in the industrial sector instead they are investing on the real estate especially building construction. Although the book is written in the early stage of the development in stock market is still reality of Nepalese Capital Market.

Similarly the next book by Dr. R.S. Pradhan's is very valuable for the purpose of analyzing the capital market in Nepal. In his book he writes about the stock market behavior in development and big capital markets but their relevance is yet to be seen in the context of smaller and underdeveloped capital markets. "(Pradhan 1994: 42-43). As per the book, the stock market behavior in such smaller and underdeveloped capital markets would help development of realistic theoretical models and formulation of relevant hypotheses for empirical testing in



finance. Thus it is felt necessary to study stock market behavior in the context of smaller and under-developed capital market's and this chapter prepared with reference to Nepal is a small attempt towards that end.

"In Nepal, the listing of shares in stock Exchange center (SEC) and their trading in the stock market is a recent phenomenon. The Nepalese stock market is characterized by low trading volume, absence of professional brokers, and early stage of growth. Limited movement of share prices, and limited information available to investors. A number of researchers are available on government owned public enterprises whose stocks are listed in SEC and traded in stock market are yet to come up in Nepal. Viewed in this way, this chapter is expected to provide at least some insights into stock market behavior in Nepal. This chapter can be considered important, as Nepal has already started the process of privatization of public or government owned enterprises. "(ibid)

Among the various empirical contradictions to the asset pricing model of Sharpe (1964), Lintner (1965) and Black (1972), the most prominent is the size effect of Banz (1981). He finds that average returns on large stocks are lower while average returns on US stock and a firm's book value of common equity to its market value is documented by Stattman (1980) and Rosenberg, Reid, and Lanstein (1985) similarly, Chan Hamao, and Lakonishok (1991) find the strong role of book to market equity in explaining the cross-section of average returns on Japanese stocks. Basu (1983) also find earnings- price ratio is explaining the cross-section of average returns on US stocks. Again, Ball (1978) finds that earnings price relation is likely to be higher for stocks with higher risks and expected returns. Though there are these findings in the context of developed and big capital markets, their applicability is yet to be seen in the context of smaller under developed and big capital markets. This chapter therefore attempts to assess some of the cross- section behavior of stock market similar to ones as described above in the context of Nepal, it specifically examines the relationship of market equity; market value to book value, price earnings and dividends with liquidity, profitability, leverage, asset turnover and interest coverage.

In the book, shareholders democracy and AGM feedback" professor Mohan Kumar Shrestha has focused various issues related to protection of shareholders expectation. Successes of companies directly depend on the protection of their owners. But how can this be accomplished is main question.

Thus it is necessary to develop a possible guidance for enhancing the efficiency for public limited companies to contribute directly in the growth of national economy on one hand and ensuring handsome return to the shareholders on the other hand to make their investment meaningful and worthwhile. At present, the overall shareholders democracy in terms of protection their interest is basically focused on the payment of satisfactory dividend and the maximization of shareholders wealth by appreciating the value of shares they sold. (Shrestha,1995:25)

"Investors were enlightened and they started inquiring about company's financial health and future prospect before buying or selling shares. People turned to price earnings multiples. NEPSE indexes informed trading became sort of a norm when stock market entered 1995. Many people who couldn't cope with this system of intelligent speculation left the ground. As a result, the numbers of buyers gradually came down and so did the prices." (The Kathmandu Post, may 18, 1996:6)

Panta, Rekha analyzed in her study, "current status of share market in Nepal", and the trend of Nepalese's stock market present state of primary and secondary market was found satisfactory. According to her study, the development of stock market primarily depends on programmed and their implementation. In Nepal, the overall policy environment has not been conducted to the development of stock market. Therefore, it is difficult to develop more efficient secondary market. Trading system for both equity and debt securities.

Capital market is a crucial element in the national economy. Its role in reinvigorating and boosting the economic activity in the country holds significant. The strategic plan released by securities board can, to a great extent, energize the investors, dealers by increasing investor's interest in it. Security market experiences both boom and bust soon after the beginning of securities trading through broker's member in the stock exchange floor. Through the market started to function quickly boosting the price of share to an unexpected level, it could not sustained (business age, 1999:10).

"Return from investment in stock is not short phenomenon." investors have to learn few things before they make investment on stock. First of all they should know the financial health of that company. For example; if some body want to invest in the share of standard chartered bank, he she must see its balance sheet or at least paid -up capital, last year net profit , current year anticipated profit and calculated earnings per share and price earning per share and price earnings ratio. These two numbers would give a fair idea about company health and then market

price would judge through the discount factors based upon one of the sound company's data. Market price is equal to earnings per share divided by discount factor. EPS can derive by dividing market price per share by P/E ratio. Lower the P/E ratio higher the chance of profit with capital gain and others. "(Business age 2001:20)

"Investment in share has traditional been done by rating the institutions on the price of price earnings ratio or dividend. Hardly do investors compare current assets with current liabilities or take a look at the debt equity ratio. Unless investors begin analyzing the intrigate financial details of corporate institutions before making investment decision, the market cannot develop smoothly.

Share investment has traditionally been guided by the investors return. Most earning of investor here have been in the form of dividends rather than capital gains, though high dividends are often seen, incorporate finance theory as a wasteful use of scares capital. With the commercial bank becoming the only potential destination, other stock market participants hardly making profit, and even they did failing to meet investors' expectations, demand for shares of commercial banks occupied supply and their price boomed.

Now the latest slums in the secondary market, despite a pretty good performance by commercial banks, make it more apparent that investment in the past was done on him. Even official at the stock exchange and the securities board , refuting investors allegations of the market manipulation and insiders trading of last February , discreetly claimed that the Nepalese stock market is in a infant stage .And that , investment are made on an impulse , rather than through market study and credit rating. "(Business Age 2001:25).

"ADB experts have been many obstacles to the growth of the capital market. This includes low level of investors ' confidence, disclosure of poor and manipulated financial information week enforcement of regulation absence of instructional investors , lack of diversity in the range of financial instruments and the scope of active participation for the various intermediaries limited by vertical barriers .

#### **2.4) Review of Masters' Degree's Thesis:-**

There is many masters' thesis prepared by various researchers in the subsequent previous years. Among them some thesis are reviewed here for analysis if literature.

Miss Jyoti Joshi (2003) has conducted research on in the title of "roll of Nepal stock exchange (NEPSE) in the securities market ". The major objectives of this study are to enquire into the performances of Nepalese stock exchange market and predict the future scenario. The specific objectives are:

- Giving introduction of security market i.e. composition of primary and secondary market and their performance behavior.
- To access the past and present behavior of business operation in the Nepal stock exchange market.
- To forecast the future trends of business and economic activity in the NEPSE in terms of quality, value and volume.
- To prescribe ways and means by which secondary market would be more effective and meaningful.
- Study on legal provisions relating to protection of investors' interest.

In her study, Miss Jyoti Joshi has recommended the following:

- Stock market investment is a risky job. To win the stock market, investors should be always clear his own strength, weakness, desires, risk taking capabilities and how to react on different and ever changing market condition.
- The government should amend the rules and regulation regarding stock market time to time and to make the policies and protect the individual investor right.
- Privatization process needs to be carried out effectively in order to develop Nepalese stock market through the widespread distribution of shares to public investors.

- The existing laws and regulations relating to stock market have to be revised to rationalized and simplify the regulatory system.
- The NEPSE should adopt appropriate policies, membership and fee structure to attract members outside the Kathmandu, including brokers, dealers, issue managers and full service securities firm should be eligible for membership.

Further concluded that, along with primary data, secondary data were taken to justify the study on this topic. And also she has uses interviews and questionnaires methods.

The secondary market, which presented an institutional mechanism that was inadequate, non-transparent, hardly regulated and rarely geared to investor's protection, has also witnessed no table development. Among them is prescription of norms for intermediaries like brokers in trading settlement and the bound of stock exchange with participation from stock exchange members and investors. The exchange has made tremendous effects in the volume of transaction, share turnover, number of shareholders, public response and market capitalization. However, a set back from the fiscal year 2052/2053 B.S. is observed in the performance of both primary and secondary market. The reasons behind it may be due to lack of knowledge in the beginning as the price of share companies making loss has also tremendously increased and political instability which has bogged down the country in recent times poor information dissemination to the public companies which have-not made thief financial statements to public or dissemination requisite information.

MR. Nranjan phuyal (2004) has conducted research on in the title of "stock price behavior of selected banking and insurance companies" has the following objectives:

- To identify major financial indicators which affects on determining the MPS?
- To examine and evaluate the relationship of MPS with various financial indicators like; EPS, NWPS, DPS and current year's dividend.
- To identify whether stocks of sampled companies are over-priced, under-priced or equilibrium priced.

- To study the signaling and informational effect on share price.
- To examine Nepalese investors response on the change of price of stock.
- To provide suggestion on the basis of findings.

In his study to reach in conclusion he used statistical tools such as regression analysis ,correlation and hypothesis test and also used major financial tools such ratio analysis ,dividend discount model etc.

The major findings of the study were as follows:

- From the study it seems that Nepalese investors have limited knowledge about security market. It lacks of professional investors.
- Most of the stocks of banking and finance companies are under valued in the stock market.
- As per the study, investors are trading the stocks without proper analysis of the financial indicators of these companies.
- The price fluctuating trend is not predictable by general investors.

This study also shows that the some major events occurred in the country also effect on the market price of share. So, the political, economical and social environment has also close relationship with the pricing behavior of share and they influenced the stock market with respect to the importance of the events. The study also shows that Nepalese investors are conscious towards the dividend and price appreciations of the shares they are investing out of most of the investors are only using buy and hold strategy as only few of them are trading their shares in secondary markets. This shows that their lacks professionalism in Nepalese investors.

Miss. Anjali Amatya (2007) has conducted research on in the title of "Brokerage services and stock price movements in NEPSE" have the following objectives:

- To examine the brokerage services in NEPSE.
- To study the stock price movements of listed selected companies in NEPSE.
- To study whether stocks of the sampled companies are over-priced, under-priced or equilibrium priced.

- TO study investor's response regarding on the change of stock price.
- To identify major indicators which affects on determining the MPS?
- To provide suggestions on the basis of findings.

In her study to reach in conclusion she used statistical tools such as regression analysis ,correlation and hypothesis test and also used major financial tools such ratio analysis ,dividend discount model and also she used questionnaire techniques etc.

The major findings of the study were as follows:

- Nepalese stock market has the shortage of professional investors. it seems that investors buy the stock only for dividend and they are not interested on speculative motives.
- Major of the investors are not trading in secondary market and those who trade in secondary market, sold their shares due to the expected price appreciation and few of the investors sell their shares due to the non declaration of the dividend by the company.
- Forty percent of the total investors were satisfied and sixty percent of investors were not satisfied with the performance of brokerage services of NEPSE. While the entire broker were satisfied with the performance of brokering services of NEPSE.

She also recommended that:

- The broker should provide reliable and adequate information regarding the transaction and other aspects so that maximum number of investors could participate in the investing into stocks.
- The brokers should perform their activities within the limitation of the rules and regulations.
- The broker should act as an important and responsible sector for the development of the securities market and should strictly avoid involving themselves into stock market disorders.
- Listed companies are requested to avail the accurate and timely information to concerned authorities as well as to investors.

Another thesis is conducted by Miss Tripti Aryal (2008) in the title of "Stock market

price behavior of no of listed companies in NEPSE".

The major objectives of the study are as follows:

1. To identify the trend and development of stock market and economic growth.
2. To assess the relationship of stock market indicators with different macro economic indicators.
3. To recognize the affect of factors of macro environment (cultural and political) upon stock market with the degree and significance.

In her study to reach in conclusion she used statistical tools such as regression analysis ,correlation and hypothesis test and also used major financial tools such ratio analysis ,one way ANNOVA Table etc.

The overall results of the study are as follows:

- Size of stock increases as and when the number of Listed companies increases. More than the number of listed companies, longer the market size and vice versa.
- Market capitalization ratio indicates the relative importance of stock market to the national economy and assumes that stock market size is positively correlated with the ability to mobilize capital and diversify risk.
- Liquidity of stock market is the ratio of value of share traded to market capitalization.
- The development of stock market in Nepal lacks a definite direction and is not guided by clear cut policies and action, due to low volume of shares traded and wide fluctuations, the stock market in Nepal has been highly illiquid and volatile.
- Number of listed companies has been found to have greater impact upon NEPSE index than value of stock traded and number of stock traded. NEPSE index is also positively influenced by number of stock traded and value of stock traded as indicated by correlation coefficients but the test statistics are insignificant. So it can be concluded that number of listed companies and number of share traded are in a better position to explain the variation in NEPSE.



Further she concluded that:

Nepalese stock market is highly dominated by the largest companies in terms of turnover as the concentration ratio is very high.

Nepalese stock market is highly concentrated to one or group of the industrial sector(s). It is the banking sector at which the market is highly concentrated.

Nepalese stock market cannot handle large volume of trading with less price swings. As there are very weak positive relationship is observed in Nepalese stock market between volatility and value of shares traded.

Numbers of listed companies have been found to have greater impact upon NEPSE index than value of stock traded and number of stock traded. However NEPSE index is also positively influenced by number of stock traded and value of stock traded.

In her study, Miss Tripti Aryal has recommended the following:

- Various indicators of stock market development indicate that the stock market in Nepal is underdeveloped and it is not in a position to show significant presence in national economy. Turnover ratio, value traded ratio to volatility and concentration indicates the illiquidity and high risk in equity investment. To correct this problem acquisition and dissemination of information relating to stock market component is a must.
- None of the companies has entered in organized stock exchange from power, information technology and construction sectors. The concerned parties should foster such an environment that encourages the sectors for organized dealing of securities. This will ultimately provide liquidity in stock market and may help to have impact upon national economy.
- The country should initiate the policies to reduce cost of mobilization of savings and to facilitate the investments as there is positive impact of total savings on NEPSE index.
- Nepalese stock market is highly dominated by banking sector. Over concentration of stock market causes the stock trading to be difficult. To correct this problem it is recommended to encourage to other sectors to get entered into organized stock exchange.
- Investors should be provided with wider variety of securities to meet their

risk return preferences so that, unlike in present situation majority of the nation's population participate actively in buying and selling of securities that causes the stock market to be developed and nation's economy, in turn will be spur.

On the research paper on "Determinants of share price in Nepal stock exchange"(2008) conducted by Mrs. Mina Devi Bhatta provides the information about the position of the share price in share industry. Further she set the main objectives of her study was to study examine and analyze the determinants of share price. Specifically the objectives were:

- To identify the prime determining factors of share price determination of Nepalese commercial banks.
- To examine and evaluate the relationship between MPS with the various financial indicators like EPS, BPS, DPS etc.
- To analyze the market trends of MPS with financial indicators.
- To conduct the opinion survey of potential investors regarding various aspects of share behaviors in Nepal.

The major findings of her study are as follows:

DPS is much volatile in comparison with MPS, BPS and EPS.

The majorities of Nepalese investors found tyo be either unknown about laws or like to say imperfect policies causing the problem in the market.

Political fluctuation cause change in share price. They influence share market in a very direct way. It means that fluctuating political situation badly damage.

The majority of Nepalese investors declare themselves as informed investors but still Nepalese investors lack the proper knowledge about the share market.

Majority of the investors are convinced that higher EPS cause higher share price.

Dividend pattern plays a great on share price movement. Higher the DPS more will be the share price. Most of the investors like to analyze the dividend pattern of the company before they invest in their shares.

Basically, most of the investors are intended to maximize their profit through share investment. They think share as a good sector of investment assuming

that it gives a good return in short and long term.

In her study Mina Devi Bhatta concluded that:

Due to inadequate knowledge regarding the share market among Nepalese investors, capital market of Nepal has not been well developed yet.

The investors generally tend to earn profit from share and they think that EPS and DPS are prime factor to be analyzed and to be considered on investing their savings on share price.

EPS and DPS are the major influencer of the share price. Besides this, political situation, annual general meeting, assets structure and capital structure of the organization also influence the share price of the company.

She also recommended that the followings:

To control the speculation in share, an effective control mechanism is necessary.

Government should formulate and implement a rigid rules and regulations for the further development of share market.

An open policy to encourage and promote foreign investors in share price would be fruitful to strengthen the share market of Nepal considering the fact of present globalization.

For the clear and absolute results regarding the determinants of share price, a population study of whole share market for a longer study period is required.

Similarly MR. Rajan Prajapati (2009) has conducted research on in the title of "A stock Market behavior of listed companies in Nepal" have the following objectives:

- ) To analysis the trend of annual turnover of Nepal stock exchange.
- ) To analyze the behavior of NEPSE index.
- ) To analyze the behavior of listed companies in NEPSE.
- ) To analyze investor's view while making investment decision.
- ) To analyze investing technique in stock market.

The major findings of the study were as follows:

Findings from secondary data:

- ) Most of the companies are not following the capital market as an

alternative source of fund raising because 142 companies are only listed in NEPSE up to 2007/08. It proves that the size of Nepalese stock market is very small.

- J The numbers of listed companies are increasing trend. The number of companies in the initial year 2001/02 it was 96 and 2001/02 and in 2007/8, it was 142. A listed company was increasing by 46 companies.
- J The total number of transaction is in increasing trend during study period. In total, the number of transaction in commercial bank is the highest. Second position occupied the development bank in term of number of transactions. Thus, investors are encouraged to invest in these sectors.
- J NEPSE index reflects the aggregate volatility of the share prices of the companies listed.

#### Findings from primary data:

- J During the discussion with both brokers and investors, it has been seen that they blamed each other's regarding their roles and performance.
- J Most of the populations were interested to invest in stock.
- J Regarding their preference of investment sectors, major portion were found preferring to invest in banking and finance companies.
- J Most of the investors were not conscious with Nepalese stock market.
- J Investor's motive for investment on the shares of company was to receive capital gain.
- J Most of the investors were satisfied with earning from investment.
- J On analyzing the priority taken by investors to make investment, it was found that major portion of them take investment decision based on market price.
- J Most of the investors were not satisfied with the NEPSE performance.
- J Most of the investors were in view that the government's role is important for smooth functioning of security board.
- J On analyzing investors view, it seems that the role of different parties such as broker, market makers, and securities exchanges limited is not efficient

during the study.

- ) Stock market is confined to equity market only and debt truncation in Nepal stock exchange is negligible.

According to the above objectives "Mr. Prajapati recommended the following points by his recommendation and conclusion section.

- The performance of commercial banks, finance companies and manufacturing & processing are better than the other sectors so it is recommended to the investors to invest their investment in these sectors.
- Thousands of investors from outside the valley are suffering due to not having an easy access to secondary market. All the investors from outside the valley who want to involve in securities transaction must come to capital physically. There is no another way for them to participate in the secondary market. it is costly and risky. Therefore, secondary market should be expanded at least one in each development region to expand its services more.
- When a company performance was well this performance reflects market being the price up. However, higher price would be affordable only to high-income group and wealthy investors. Thus, benefits of capital gain as well as handsome dividend paid by companies should follow the concept of stock split to make their stock more affordable to all income level investors by reducing the price of stock. it helps to increase the number of share in stock exchange to spread the earnings of society and to motivate them to participate in securities investment.
- Financial investment, in Nepalese context has still new phenomenon due to the lack of enough knowledge and awareness about it. so effective programmed should be organized to increase awareness among the general public.
- Equity issuance has covered major portion of total issue in the securities market. The issuance of such securities is viable opportunity for only risk seeker investors who wish to take greater risk for higher return. However, there is still lack of market for risk adverse investors who want to invest lower risky or risk free securities. so corporate bonds, debentures, and preferred stock should be issued heavily to cater the needs of risk adverse

investors.

- SEBON, NEPSE are operating under the government ownership. it has put breaks on the development of securities market. Therefore, the ownership of NEPSE should be hand over to the private sectors and developed as a self-regulatory organization. It helps to regulate the activities of NEPSE and market intermediaries.
- Central deposit system should be initiated in Nepal stock exchange, which helps to easy transaction.

### **Research gap**

From the above all studies conducted by various researchers, it seems that Nepal stock market is still in developing stage and it is facing various challenges. Further more it also shows that there are very few research works conducted about the market price behavior on the stock market. Most of the above stated studies use technical methods and statistical methods like run Test, correlation coefficient, NEPSE trend etc for the analysis purpose. Only few of the studies use fundamental analysis tools for the research work and about the financial indicators like EP, DPS, and NWPS which are the most influencing factors for the MPS. So this study tries to analyze the relationship of these factors with the pricing behavior of the stock of selected companies as well as tries to show the influence of the important events happened in the country on market price of the stock.

## Chapter-III

### Research methodology

#### **3.1) Introduction:**

Research means search again and again .we study the social problem again and again to find out the some thing more about the problem. The first look may not be adequate .we enter in to the subject matter again and again and study the problems differently and thoroughly is time. This process is called research. Research is a systematic and organized effort to investigate specific problems that need solution.

Methodology refers the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind it. Thus research methodology is a way to systematically solve the research problem, what we are doing at present.

In this chapter, research methodology we deal mainly with the method, which are used in the period of research. In this regard this chapter explains not only the research methods but also consider the logic behind the methods, which are use in the context of our research study. So research design, sources of and use of statistical and financial tools are basically explained in this chapter.

#### **3.2) Research Design: -**

This is the study of share price behavior of listed companies in Nepal. Research design is a plan structure and strategy to obtain the objective of the study. The research was mainly based on secondary data and information. To conduct this study the research design was followed explanatory or descriptive as well as analytical using various tools and techniques related with the performance of the company and return to investors.

#### **3.3) Population and sample: -**

All the companies listed with Nepal stock exchange are considered to be the population of the study and the finance companies under taken for the study are the samples to the study. At present there are 55 finance companies listed with the Nepal stock exchange. This study has been limited to the finance companies sector. There fore the following five companies have been randomly considered for our analysis purpose.

1. NIDC capital markets Ltd. (NCML)
2. Citizen Investment Trust. (CIT)
3. Gorkha finance co. Ltd (GFCL)
4. Universal finance Ltd. (UFL)
5. Goodwill finance co. (GFC)
6. United finance Ltd. (UFCL)
7. Standard finance Ltd. (SFL)
8. Cosmic merchant banking and finance Ltd. (CMBFL)
9. Capital merchant banking and finance Ltd. (CMBFL)
10. Central finance co Ltd. (CFCL)

As this study will try to explore the objective set in the previous section. It is expected that this study will help to analyze the stock market scenario as well as the individual finance companies performance in relation to that of other having similar business characteristics. This study is also aimed at producing tested effect of historical information at future price movements. So all the interested groups like stock analyst, financial analyst, financial managers and brokers may use the findings to assess and evaluate from their respective points of views.

**3.4) Sources of data:** - Data has been obtained from the secondary sources. Concerned finance companies, Nepal stock exchange and security board are the sources of data the sample period cover five years starting from 2003/04 to 2007/08. The review of theory of the proposed theory was based on text book, official publication such as Nepal stock exchange; publications of security board of Nepal, journals such journals of finance. Economic journal, journal of financial management. The facilities available at library, books, journals and other publication.

**3.5) Data collection techniques:** -As already mentioned this study is totally based on the secondary data. Data collection from secondary sources is proximate to the reality and authoritative too. The basic techniques used, is observation method for the study to be authoritative data are enclosed in annex section.

**3.6) Analytical tools:** -

Data so obtained have no meaning unless they are arranged and presented in a systematic way. Further; they need to be verified and simplified for the purpose of analysis. Moreover, data and information so gathered are to be checked, edited



and tabulated in such ways that provide convenience for computation and interpretation.

The relevant data have been inserted in meaningful tables. Only the data that are relevant to the study have been presented in the tabular form in an understandable way and unnecessary data have been excluded. To achieve the predetermined objectives of the research curtailed tools are used. The tools used are categorized as,

Financial tools

Statistical tools

Data does not speak itself. Certain tools have to be used to extract some conclusion on organization's published financial statement and report. The figure in the isolation does not help us to conclude anything. Conducting an intensive analysis along with statistical diagram easily provides the financial picture of organization. Therefore, the financial analysis, which includes different indicators, such as ratios, that are major in analysis of the share prices, will be used.

In order to test the risk and risk ness of shares the risk and return analysis have been made. The expected rate of return over the period of review, the standard deviation, and the coefficient of variation of stock price are used in the form of statistical tools. In the market sensitivity analysis, beta coefficient of individual stock has been presented for understanding the market volatility.

### 3.6.1) Rate of return

The concept of rate of return is important because it measures the speed at which the investor's wealth increases or decreases. An investor's single period rate of return during the investment period is computed as,

a) Realized rate of return at a time t

$$R_j = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$$

Where,

$R_j$  = realized rate of return at time.

- P t = current market price of share
- P t -1 = market price of previous year.
- D t = dividend in cash or stock

b) Expected rate of return

$$ER_j = \frac{\sum R_j}{N}$$

Where,

- Rj = Expected realized rate of return
- N = Number of observation

### 3.6.2) Standard deviation

It is quantitative measure of total risk of assets. it provides more information about the risk of the assets. The standard deviation is the square root of the average of the squared distance of the observation from the mean; also it is the square root of the variance of returns around the mean. The following is applied to calculate the standard deviation using historical returns.

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{N}}$$

Where,

- $\sigma_j$  = standard deviation of stock j
- Rj = realized rate of return at a time.
- $\bar{R}_j$  = Expected realized rate of return.
- n = number of observation in sample.

### 3.6.3) Coefficient of variation

The risk per unit of expected return can be measured by coefficient of variance, which is computed as follows.

$$C.V_j = \frac{\sigma_j}{R_j}$$

Where,

C.vj = coefficient of variation

Rj = realized rate of return

$\sigma_j$  = standard deviation of stock j

### 3.6.4) Beta coefficient

The beta coefficient is a systematic risk index. It may be used for ranking the systematic risk of different assets. If beta is larger than one, then the asset is more volatile than the market, which is called aggressive asset, as its price fluctuations are less than the market. on the other hand if beta if beta is equal to one then the asset is said to be average and its price moves proportionate to the market changes.

$$B_j = \frac{\text{COV}(R_j, R_m)}{\sigma_m^2}$$

Where,

Bj = Beta coefficient of stock j

COV (Rj, R M) = Covariance between stock & market

$\sigma_m^2$  = variance of the market

### 3.6.5) Run test

It is widely accepted techniques for a non-parametric test and has been developed to test the hypothesis. For this reason, it is applied here to test the MPPS quoted IN NEPSE reported is either random or not random. To complete this test sixty mpps (monthly closing price for five years) has been taken and computed the value of z following the below mentioned procedure.

### Step: 1

The median of each sample finance company under the sample period is calculated by,

$$Me = \frac{(N+1)^{th}}{2}$$

Where,

Me = median

N = sample size

### Step: 2

The calculated median is then subtracted from consecutive price. In this way positive, negative and zero signs are appeared.

### Step: 3

Counting the number of each sign, the number positive and zero signs (>) is denoted by n1 and the number of negative sign s (<) is denoted by n2 .the number of fluctuations in plus and minus is denoted by r. If either n1 or n2 is larger than 20 the sample is called large sample.

### Step: 4

Developing the hypothesis Null hypothesis; ho: the order of MPPS of stock of sample finance companies was not random.

Alternative hypothesis; h1: the order of MPPS of stock of sample finance co. was not random.

**Step: 5** computing the value of z under the large sample

$$r - \frac{2n_1, n_2}{n_1 \Gamma n_2} \Gamma 1$$

Z =

$$\sqrt{\frac{2n_1, n_2 (2n_1, n_2 Z n_1 \Gamma n_2)}{(n_1 \Gamma n_2)^2 (n_1 \Gamma n_2) Z 1}}$$

Where,

R = number of runs

N1 = effective sample size (>)

N2 = effective sample size (<)

### Step: 6

Rejection region, according to the normal curve distribution, if the calculated value of z is +1.96 then the probability occurs 0.0025 and for two tailed probability it would be doubled 0.05. therefore if the calculated value of z in single sample is greater than +1.96 the two tailed probability associated with occurrence under ho would be less than the 5% level of significance ( $\alpha = 0.005$ )

### Step 7:

If the value of calculated is less than tabulated value of z (according to normal curve distribution) null hypothesis accepted and vice versa.

#### 3.6.6) Correlation coefficient

Correlation coefficient is the statistical tool generally used to measure the degree to which one variable is related to another. Correlation can either be negative or positive. If both variables are changing in the same direction, then correlation is said to be positive but when the variation in the two variables take in opposite directions the correlation is negative. In this study it is performed to test how long the MPPS correlated with BVPS. Therefore, simple correlation test has been applied between MPPS dependent variables and BVPS considered as independent variables. Simple correlation coefficient is computed by.

$$R = \frac{N \sum xy - (\sum x) (\sum y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

#### 3.6.7) Coefficient of determination (r<sup>2</sup>)

The coefficient of determination is the way to measure the contribution of independent variables in predicting the dependent variable. It is more appropriate

while verifying the results. Correlation coefficient computed by square of the correlation coefficient as mentioned above.

### 3.6.8) Regression analysis

Regression is the statistical tool, which presents the linear relationship analysis between two or variables. If one or more independent variables are changed then it results the change in the value of dependent variables. Statistically such variables can be presented in mode of linear equations. This analysis is done with simple regression analysis to find out the existence of non-existence to any relationship between MMPS and BVPS.

Simply regression equation of MPPS and BVPS is expressed as

$$\text{MPPS} = a + b \cdot \text{BVPS}$$

$$\text{MPPS} = a + b \cdot \text{BVPS}$$

$$a = \bar{y} - b\bar{x}$$

$$N \sum xy - (\sum x)(\sum y)$$

$$b =$$

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

### 3.6.9) Standard error of estimation

In the regression equation the perfect prediction is practically possible. The standard error of estimates measures the accuracy of estimated figures. The smaller the value of standard error of estimate the closer will be the dots of regression equation and better the estimates based on the equation this line. A zero standard error of estimates indicates that there is no variation about the line and the correlation will be perfect.

Standard error of estimation is calculated as follows

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

### 3.7) Testing of hypothesis

In testing of hypothesis assumption is made about the sample selection from population and testing whether to two contending and get the sound conclusion

in the light of the sample observations. In testing the hypothesis the initial way is to set the hypothesis and present it in a standard way. For this null hypothesis (H0) and alternative hypothesis (H1) have been formulated. Under this study, the hypothesis is formulated and tested while applying the run test, correlation and regression analysis.

#### **Creation of hypothesis under run test.**

Null hypothesis (H0): The order of MPPS of stock of sample finance company is random.

Alternative hypothesis (H1): The order of MPPS of stock of sample finance company is not random.

#### **Creation of hypothesis under correlation coefficient**

Null hypothesis (H0): The correlation coefficient between the MVPS and BVPS of the sample companies are equal to zero.

Alternative hypothesis (H1): The correlation coefficient between the MVPS and BVPS of the sample companies are not equal to zero.

#### **Creation of hypothesis under regression analysis**

Null hypothesis (H0): The MPPS value is dependent on BVPS.

Alternative hypothesis (H1): The MPPS value is not dependent on BVPS.

## Chapter IV

### DATA PRESENTATION AND ANALYSIS

#### 4.1) Behavior of NEPSE Index

Market index have always been of great importance in the world of security analysis and portfolio management. Both individual and institutional investors use the market index as the benchmark against which they evaluate the performance of their own or institutional portfolio. Market indexes are used to determine the systematic risk for individual securities and portfolios. Technical analysis usually uses price movements to predict future movements in the stock market. Stock market indexes are used to study the trend of growth pattern in the economy, to analyze as well as to forecast business cycles and to correlate stock market indexes to economic activities.

Index is a device designed to measure the change in a group of related variables over a period of time. Regarding the study, index has taken as measuring tool whether the performance of stock market is remarkable or not. This clearly focuses on the price of stocks that is increasing or decreasing in the market due to the various changing variables. The higher index indicates the increase in stock price that implies the better performance and vice versa. Thus the NEPSE index shows the behavior of stock prices in the capital market.

Price index. According to this,

$$P_{01} = \frac{\sum p_1 \times q_1}{\sum p_0 \times q_0} \times 100$$

Where,

P01 = NEPSE price index

P1 = Today's stock price

Q1 = No of outstanding shares (listed shares) today

P0 = Base market price

Q0 = Base listed shares

After the initiation of floor trading, NEPSE started to calculated the NEPSE index taking 12 Feb 1994 (30th Magh 2050) as a base period and 100 as base value.



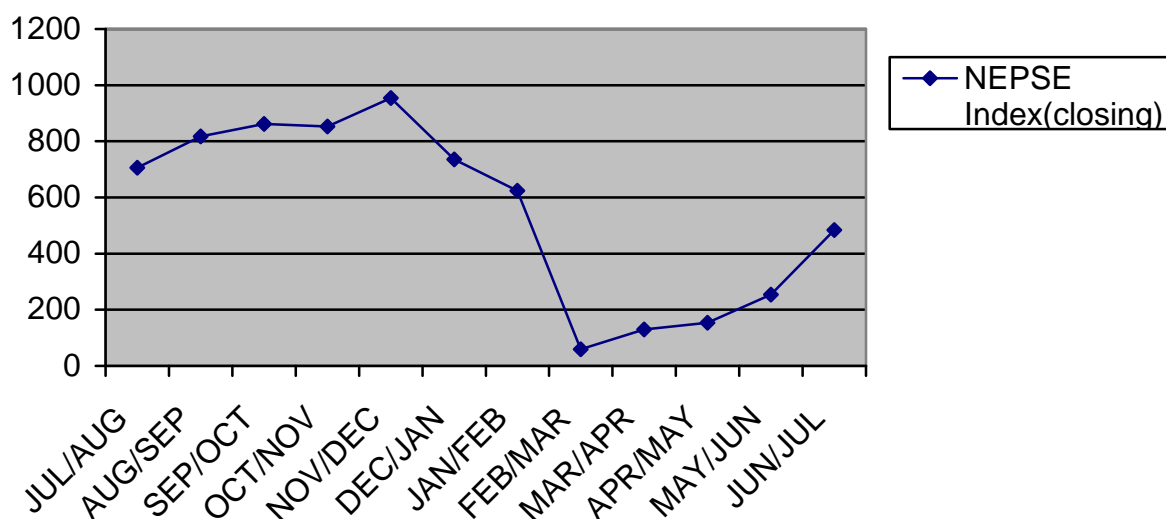
From the below table it is clear that by the end of this fiscal year, NEPSE index of finance company closed at 483.68points. At the end of last fiscal year was 365.38 points. During this fiscal year the highest point of NEPSE index was 954.19 recorded in the month NOV/DEC, while the lowest point was 58.83 recorded on FEB/MAR. The monthly trend of NEPSE index is presented in below table and chart.

**TABLE-1**  
**Monthly NEPSE index (year 2007/08)**

Month	NEPSE index (closing)
Jul/Aug	705.96
Aug/Sep	817.08
Sep/Oct	861.37
Oct/Nov	853.29
Nov/Dec	954.19
Dec/Jan	735.26
Jan/Feb	624.19
Feb/Mar	58.83
Mar/Apr	129.94
Apr/May	153.56
May/Jun	253.34
Jun/Jul	483.68

(Source: NEPSE; Annual Trading Report, 2007/08)

**FIGURE-1**  
**NEPSE INDEX (CLOSING)**



**4.2) NO OF LISTED COMPANIES IN STOCK EXCHANGE**

The number of listed companies presented in table shows that the rate of listing companies from the year 1997/98 to 2007/08. The rate of listing companies for the fiscal year 2002/03 is 12.5%, which is highest increase rate. From the table is clear that the rate of listing companies is in increasing trend in 1997/08 to 2001/02 however the no of listing companies decreases in 2001/02 and again has been increasing from 2002/03 to 2007/08.

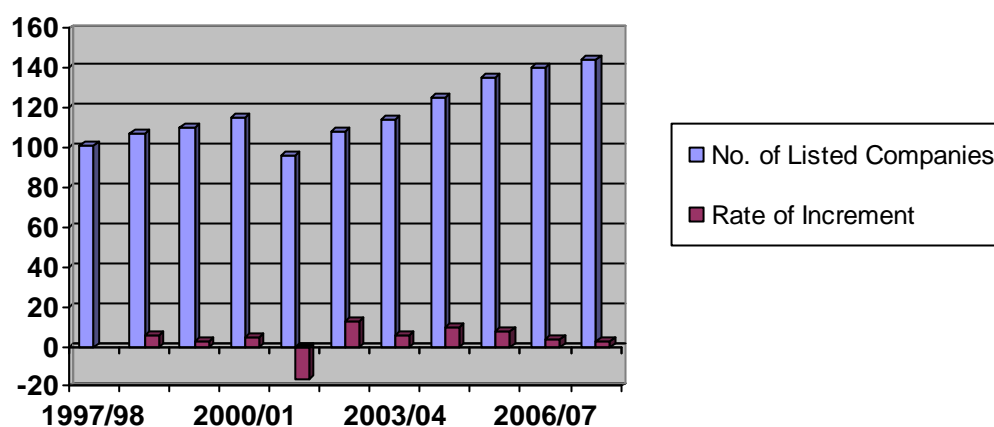
**TABLE- 2**  
**Listing rate of companies for different years**

Year	No of listed companies	Rate of increment (in %)
1997/98	101	-
1998/99	107	5.94
1999/00	110	2.8
2000/01	115	4.55
2001/02	96	-16.52
2002/03	108	12.50
2003/04	114	5.56
2004/05	125	9.65
2005/06	135	8.00
2006/07	140	3.7
2007/08	144	2.86

(Source: NEPSE; Annual Trading Report, 2007/08)

**FIGURE- 2**

**No of Listed Company in NEPSE**



**GROUP-WISEMONTHLY TURNOVER**

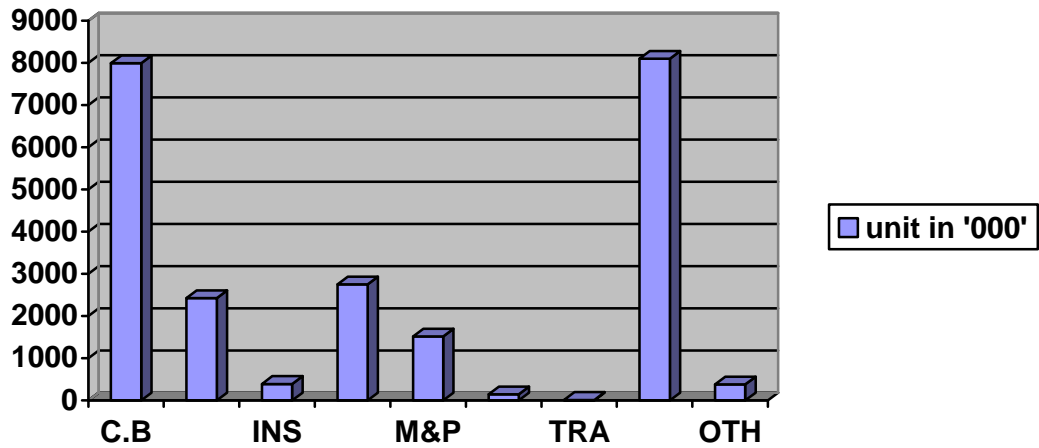
The table in annex -1 shows 12-months stock market performance from the view point turnover in terms of share units and traded amount of all the companies where shares were traded on the floor of NEPSE. The over all turnover of the market shows the mixed results, with increasing and decreasing trends. In the Initial month's trading turnover are 2844.0thousands shares which are exchanged equivalent to the amount of Rs. 1717.7 million, where as the lowest turnover is 946.8 thousands shares traded for Rs 921.1 millions recorded in the month of Oct/Nov. during this period the highest trading turnover figure is for the month of Nov/Dec, in which month 3138.2 thousand shares were traded for Rs. 2732.4 millions.

Among the various sectors hydro power and commercial sector dominates other sector in term of volume and traded amount on the whole respectively. The total number of traded shares of hydro power are 8095.9 thousand (i.e.) and traded amount is Rs 3976.2 (i.e.) for 12 month. In terms of commercial bank there total number of traded shares are 7989.5 thousand (i.e.) out of total shares 23699.0 thousand, and the traded amount is Rs 11825.4(i.e.) out of Rs 22281.5. then the other sectors as development bank, insurance, finance, manufacturing and processing, hotel, trading and others recorded 2424.0 thousand shares,392.1thousands shares, 2749.8 thousand shares, 1517.3 thousand shares, 147.6 thousand shares, 12.9 thousand shares, 379.9 thousand shares respectively out of total traded shares of 23699.0 thousand. Similarly, the traded amounts for those sectors are Rs. 3953.9 million, Rs. 236.0 million, Rs. 1887.3 million, Rs.

331.1 million, Rs 21.4 million, Rs 25.1 million, Rs. 25.1 million respectively out of total traded amount of Rs 22281.5 millions. The trading of higher number of shares indicates the higher liquidity and a higher amount of turnover implies attractive stocks.

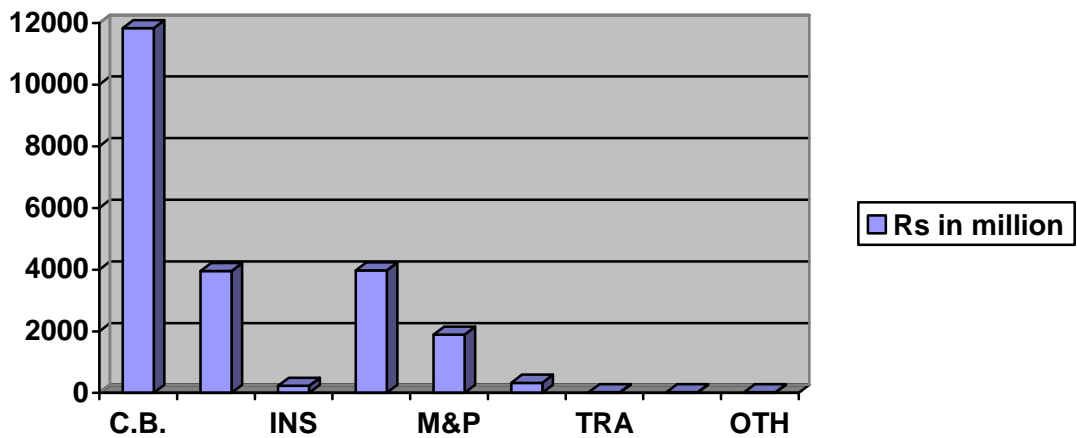
**Figure-3**

**Group-wise Turnover Fiscal Year 2007/08**



**Figure-4**

**Group-Wise Turnover of Fiscal year 2007/08**



## **TRADING PERFORMANCE OF THE SAMPLE STOCK**

The table in annex gives, different quantitative information about the stock market functioning during the fiscal year 2007/08 for each and every companies taken as sample.

Table (annex-2) gives information of outstanding shares, closing price of securities, paid-up value, no of transactions, share traded in units and traded amount of every sample companies. With in the samples highest number of transaction has been secured by NIDC capital markets which is 38 with the no of shares traded is 7.3 thousand shares. But the highest traded no of shares and the highest traded amount among the samples belong to SFL with Rs 6.6 million. Multiplying the outstanding equity with paid up values derives the total paid up values of common stocks. The highest total paid-up capital is Rs 161 millions for capital merchant banking and finance limited and the lowest value belongs to Gorkha finance limited with Rs 30 millions.

The total market value is derived by multiplying the outstanding equity and closing prices of share of each company. The highest market value is Rs 510.0 million, which is for UFL among all where as the lowest total market value, is Rs 54.9 millions recorded for GFL.

### **4.5 RISK AND RETURN ANALYSIS OF INDIVIDUAL FINANCE COMPANY**

Risk and return analysis is considered to be one of the best ways of analyzing the behavior of prices of the shares in the market. Risk measures the degree of volatility in the market price movement of individual securities. The higher the magnitude to fluctuations, higher well be degree of risk. Thought it is difficult to measure risk, some statistical tools like standard deviation, coefficient of variation and beta coefficient are used to measure the risk involved in individual security. The statistical facts of all individual company under the study, having base on the year-end closing prices of shares of finance company and dividend announcement during the year as well. All these are calculated by using the formula described in research methodology chapter.

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

**TABLE - 3**

**Expected return, Standard deviation and C.V. of each finance company.**

S.N.	Finance company	Expected return	Standard deviation	C.V.	Remarks
1.	NIDC	0.0757	0.0831	1.24	
2.	CFL	0.1376	0.1689	1.23	
3.	GFL	0.1476	0.1723	1.167	
4.	UFL	0.0885	0.158	1.785	
5.	SFL	0.0154	0.019	1.254	
6.	UFL	0.0227	0.04	1.44	Best as per S.D.
7.	GWFL	0.1436	0.2	1.39	
8.	CMB&FL	0.2	0.2	1	Best as per E.R.& C.V.
9.	CMB&FL	0.1023	0.2886	2.82	
10.	CIT	0.1225	0.16	1.306	

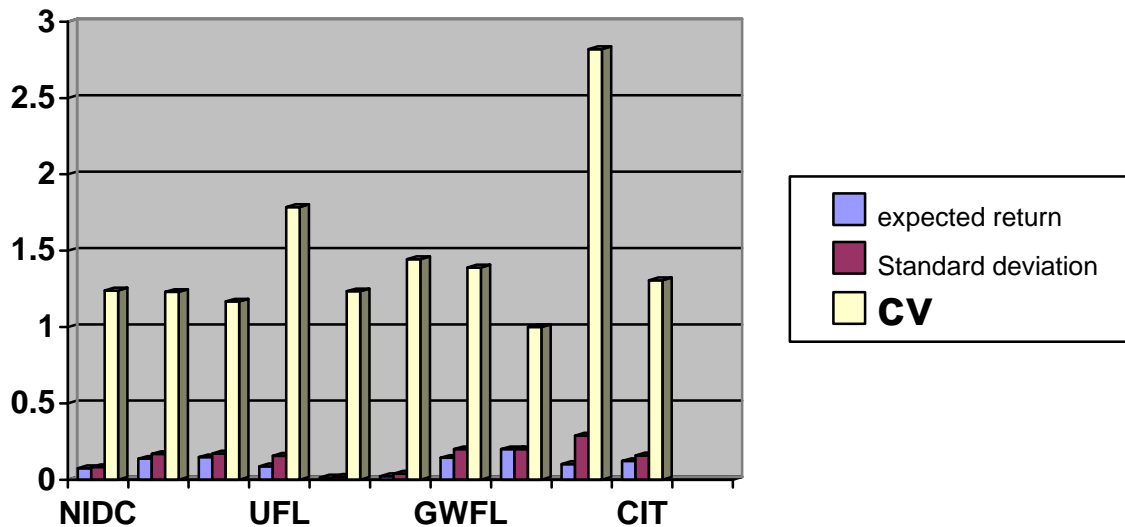
(Source: Annex 6)

Investor can expect maximum from the investment on the common stock of capital merchant banking and finance limited since it has the highest level of return among the sample companies under study. Thus it is preferable to that investor who seeks for value maximization.

The following diagram gives a pictorial understanding to the readers.

**Figure-5**

**Expected Return, Risk & CV OF Each finance company**



Standard deviation is a strong device to measure the total risk involved in a investment, which consists of both market risk and diversifiable risk moreover it denotes the volatility of the expected rate of return.

Based on the implicit assumption of the standard deviation investment in the common stock of CMB&FL is more risky. The stock of SFL could be considered as less risky. These results indicate that there will be higher risk for higher return. The standard deviation may not be appropriate measure of risk when the realized rates are not same no. of all the finance companies taken under consideration. Here also the average realized rates of return are not same for the entire sample. Therefore, it is recommended to use the C.V. to measure the risk involved in individual finance company. The C.V. measures the risk per unit of return. On the basis of the common stock of cosmic merchant banking and finance limited (CMB&FL) is the best security for investment having lowest risk because of its minimum CV. The common stock of UFL seems to be risky as indicated by its CV.

#### **4.6 MARKET CAPITALIZATION OF FINANCE COMPANY**

For the better understanding of the market domination by the individual finance company, if any, it is better to develop and compare the latest market capitalization of the finance company under the study. Based on the market capitalization of the year 2007/08. Market capitalization is the total market value at specific time point of the company, industry and market as a whole as well. The market capitalization of sample finance companies at year 2007/08 is given and presented in the table and attached pie chart.

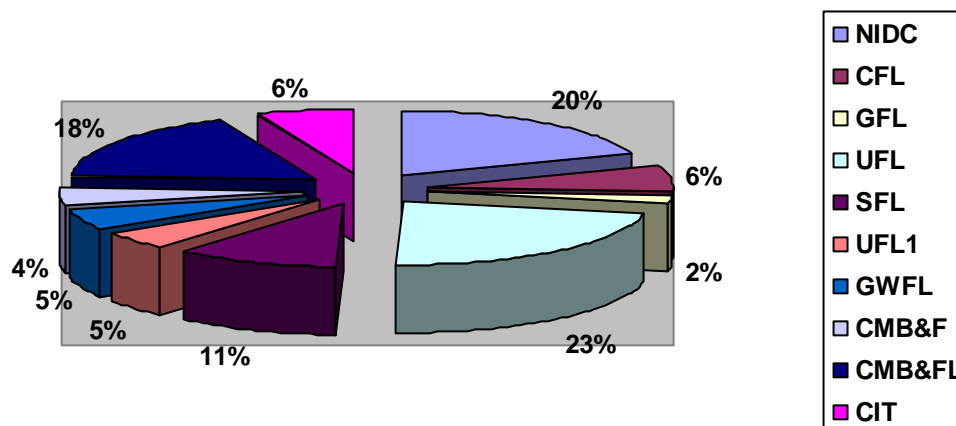
**TABLE -4**

#### **Market capitalization of sample finance company (in million)**

Finance company	NIDC	CFL	GFL	UFL	SFL
Market capitalization	450.0	149.3	54.9	510.0	246.8
% of total market capitalization	19.54%	6.8%	2.38%	22.14%	10.72%
Finance company	UFL	GWFL	CMB&F	CM&FL	CIT
market capitalization	108.8	126.0	410.6	97.6	149.2
% of total market capitalization	4.7%	5.47%	17.83%	4.28%	6.48%

**(Source: Annex-2)**

**Figure -6**  
**Market capitalization**



On the basis of the market capitalization of the firms, UNITED Finance is the biggest one among the sample finance companies under study in the year 2007/08. GENERAL finance limited has less market capitalization in the year 2007/08. However, it should be taken into account that the market capitalization solely cannot be the yardstick for the selection of better security but it can give an amazing comparability when augmented with other technical and fundamental analysis.

#### **4.7) MARKET SENSITIVITY ANALYSIS**

Standard deviation measures the total risk of an investment and the coefficient of variation measure the risk per unit of return. But the beta coefficient measures the market sensitivity of systematic risk of an investment. Analysis of market sensitivity gives useful insight in the analysis and the selection procedures of the common stock in the secondary market. The beta co-efficient of an individual stock of the stock with market. It measures the stock volatility relative to that of the average stock. An average stock is that which tends to move up or down with general market as measured by some index. Here index is taken into consideration to measure the movement of the general market regarding the stocks of listed finance company. Higher beta indicates the greater reaction by the individual common stock with the given movement in the market status. Beta is a measurement of systematic risk, which cannot be reduced by diversification. The following table shows the degree of risk ness of each stock of entire sample in relation to the general market.



**Table-5**

**Beta co-efficient of sample finance company.**

Finance company	Beta coefficient	Ranking of risk ness based of beta coefficient
NIDC	1.87	3
CFL	1.05	4
GFL	0.74	7
UFL	4.2896	2
SFL	4.485	1
UFL	0.2875	8
GWFL	0.7865	6
CMB&FL	0.128	9
CMB&FL	0.062	10
CIT	0.94	5

**(Sources: Annex 6)**

By analyzing the above table, most of the finance company has beta coefficient more than one, which shows that they are much more sensitive to the market in comparison to the average stock in the market. Therefore, the stocks of listed finance company are riskier as compared to the market risk.

Through the analysis of market sensitivity posed a several constraint for the comparative functionalities is to attempt to avoid the misleading outcomes. From the table stocks of capital merchant banking and finance company limited appeared as less risky as indicated by beta coefficient of 0.062 which is the lowest among the sample under the study. Following this cosmic merchant banking and finance limited with 0.128, universal finance limited with 0.2875, General finance ltd. with 0.74, Goodwill finance ltd with 0.7865, Citizen Investment Trust with 0.94, central finance ltd with 1.05, NICD capital markets with 1.87 as its coefficient of beta. Rest of the finance company in the sample does have higher value values of beta namely standard finance limited with 4.485 and united finance ltd with 4.2896. Revealing all of them being highly aggressive stock in the market.

#### 4.8) THE RUN TEST

In recent years several techniques have been developed to test the hypothesis that a sample is random or not among them, one sample run test is widely accepted techniques for a non- parametric test. A run is used for testing the randomness of sequence of sample events on the basis of the order of sequence on which the individual scores of observation originally were obtained. The run test and z value are calculated by using the formula described in research methodology chapter. For conducting the test of significance of hypothesis of the study, the hypothesis is developed as under.

Null Hypothesis,

HO: The order of MPPS of stock is random.

Alternative Hypothesis,

H1: The order of MPPS of stock is not random.

The below table is constructed for tabulating the finding and result.

**TABLE - 6**  
**Result of Run Test**

Finance company	sample size	r	n <sub>1</sub>	n <sub>2</sub>	/z/	z <sub>t</sub>	Decision criteria /z/>1.96: H <sub>1</sub> /z/<1.96: H <sub>0</sub>	Accept
NIDC	60	14	28	32	4.37	1.96	4.37>1.96	H1
CFL	60	12	33	27	7.232	1.96	7.232>1.96	H1
GFL	60	8	31	29	4.90	1.96	4.9>1.96	H1
UFL	60	9	30	30	5.68	1.96	5.68>1.96	H1
SFL	60	16	33	27	3.833	1.96	3.833>1.96	H1
UFL	60	16	36	24	3.724	1.96	3.721>1.96	H1
GWFL	60	8	36	24	5.884	1.96	5.884>1.96	H1
CMB&FL	60	9	31	29	8.346	1.96	8.346>1.96	H1
CMB&FL	60	6	30	30	6.4599	1.96	6.459>1.96	H1
CIT	60	10	30	30	5.426	1.96	5.426>1.96	H1

[Source: Annex 7(I), (ii), (iii), (IV), (v) & 8]

The above table reveals that the run test has been done less than 60 observations from the sample finance companies. In case of run (r) it is found different, a run implies in above table is the frequencies of fluctuations. The MPPS of UTDFL and SFL fluctuates more rather than other finance company as indicated by higher run (r=16) on the other hand NIDC, CFL, GFL, UVSFL, GWFL, COMB&FL, CAMB&FL and CIT cover the run of 14, 12, 8, 9, 8, 9, 6 and 10 respectively. In this categories CAMB&FL cover minimum run (r=6) which implies that there is less MPPS fluctuation than other sample finance company.

The number of run computed as sequence of the market price changes of the same sign. When the expected number of run is significantly different from the observed number of run the test reject the null hypothesis that implies the MPPS of different finance companies are random. A lower than expected number of runs indicates market's over reaction to information subsequently reserved, while higher number of run reflect a lagged response to information. Either situation would suggest an opportunity to make excess returns.

The run test converts the total number of run into Z statistics. For large samples the Z statistics gives the probability of difference between the actual and expected number of runs. The Z value is greater than or equal to +/- 1.96 rejects to null hypothesis at 5% level of significance.

As can be seen from the table that all finance company i.e. NIDC, CFI, GFL, UVSFL, UTDFL, SFL, GWFL, COMB&FL, CAMB&FL and CIT have Z value of observed runs for MPPS is higher than the critical value of Z at 5% level of significance (i.e. 1.96) and negative. This means that the observed number of run less than the expected number of runs with observed significance level. This signifies that change in the market price per share of each and every finance company is not random or market over reacts to the information.

#### **4.9) RELATIONSHIP OF BOOKVALUE TO MARKET VALUE**

The general trend is that the market value of publicly quoted companies is above their book values. Market values are determined by supply and demand factors. However, in an efficient market the market price of shares fully reflects all the historical information publicly available. on the objectives of this study is to examine the form of Nepalese stock market in relation with the share price behavior of finance companies. Therefore, establishing the relationship between

the market value and book value of shares and testing the significance of this relationship by using the regression equation and the correlation coefficient will give an idea whether the market prices fully reflect all the publicly available information or not. The results of regression equations, correlation coefficient, coefficient of determination, and standard error of estimates are summarized in the following paragraph and are dealt in details in the following sub-section of this section for each finance companies under study.

#### 4.9.1 The correlation coefficient

The correlation coefficient analysis is the statistical tool generally used to measure the degree to which one variable is related to another. Two variables are said to be correlated when the movements in one are accompanied by other. The correlation coefficients are calculated by using the formulae described in research methodology chapter.

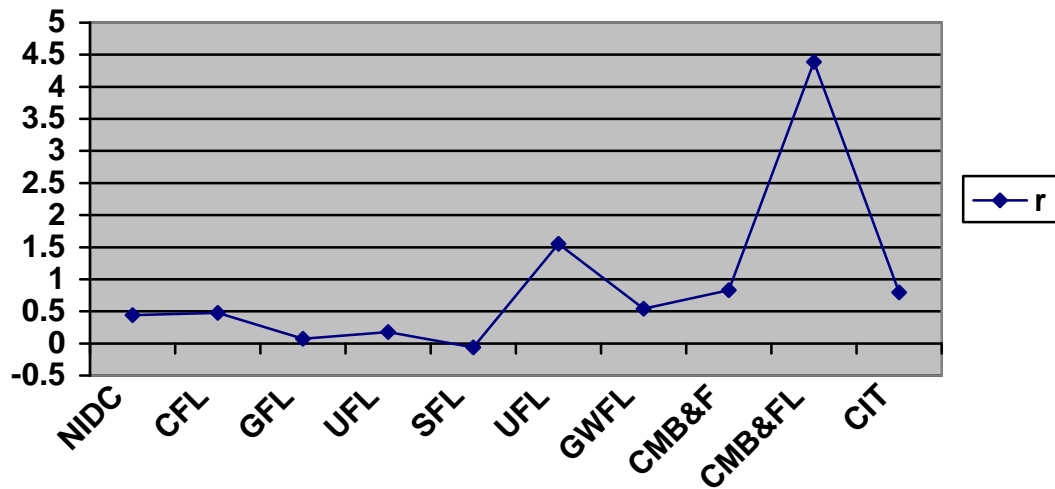
Following table and figure presents the clear picture of the correlation coefficient for the easy understanding of the existing relationship.

**TABLE-7**  
**Correlation coefficient**

Finance company	NIDC	CFL	GFL	UFL	SFL
r	.4433	.478	.0714	.1796	-.0635
finance company	UFL	GWFL	CMB&FL	CMB&F	CIT
r	1.554	.5419	.8279	4.385	.7936

(Source: Annex-9)

**FIGURE-7**  
**Correlation of coefficient**



From the table 7 and figure 7, it has been depicted that the correlation coefficient of SFL and CMB&FL are negative with their values being  $-0.0635$  and  $-4.385$  respectively which suggest concluding that there is negative relationship between book value per share and market value per share of those finance company. Among the rest of company NIDC, CFL, GFL, UFL, UFL1, GWFL, CMB&F, CIT has positive relationship with their values being  $.0158$ ,  $.478$ ,  $.0714$ ,  $.1796$ ,  $1.554$ ,  $0.5419$ ,  $18.029$ , and  $0.7636$  respectively this suggests to conclude that there is positive relationship between BVPS and MPPS of those finance companies. Out of these finance companies CAMB&FL seems to have strongest positive relationship between its MPPS and BVPS among all finance companies under study.

However, the correlation found incase of most of the finance company is either positive but very small or negative therefore, it can be concluded that negative so there is no relation between BVPS and MPPS of finance companies in general.

#### 4.9.2) The Coefficient of Determination

The coefficient of Determination  $R^2$  is another way to measure the contribution of independent variable in predicting the dependent variables. This is calculated by squaring the coefficient of correlation.

Following table and figure presents the coefficient of determination for the easy understanding.

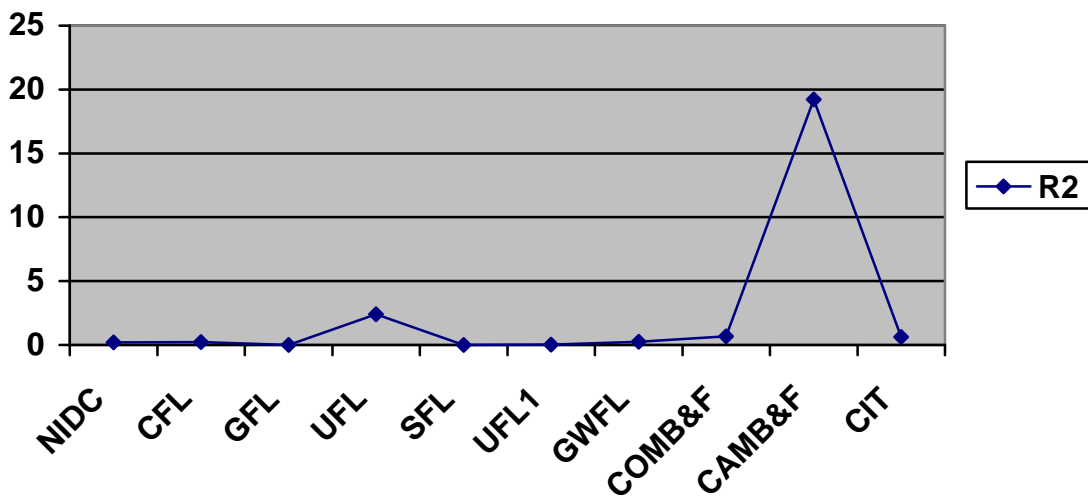
**TABLE-8**

**Coefficient of Determination**

Finance company	NIDC	CFL	GFL	UFL	SFL
R <sup>2</sup>	.1965	0.228	0.006	2.4149	0.004
Finance company	UFL1	GWFL	CAMB&F	COMB&F	CIT
R <sup>2</sup>	.032	0.2537	.6854	19.228	.6298

**Figure-8**

**Coefficient of determination (R<sup>2</sup>)**



From the above table it is clear that in explaining the variation caused by independent variable in the dependent variable of COMB&F remains at the top with 19.228, following this is UFL with 2.4149. SFL has minimum in this category of statistic, it ends up with 0.004, GFL with .006, UFL1 has 0.032 as value of coefficient of determination. As the coefficient value approaches 1, the major portion of the variation caused to dependent variable can be attributed to the independent variables. In our calculation the finance company which have been questioned about the reliability of the data are seemed to be highly explained by the equation, hence we can again say that analysis of data for short period in case of some finance company do hamper and effect the inference of the study. This,

the coefficient of determination does not seem to be uniform and equally applicable to the younger and older finance company may be due to longer periods covered by the study.

#### 4.9.3) Testing the significance of correlation coefficient

In this section it has been attempted to test the significance of the correlation coefficient of individual finance companies. Since the number of observations is less than 30, the t-test is applied for this significance test. For conducting the significance test of hypothesis, the following hypothesis is set as mentioned in the research methodology chapter.

Null hypothesis,

(H<sub>0</sub>):  $r = 0$  (The correlation coefficient between the MVPS and BVPS of the sample companies are equal to zero.)

Alternative hypothesis,

(H<sub>1</sub>):  $r \neq 0$  (The correlation coefficient between the MVPS and BVPS of the sample companies are not equal to zero.)

The calculated values of the t-statistics are found by using the following expression

$$t = \frac{r \sqrt{n-2}}{\sqrt{1-r^2}}$$

Where,

$r$  = correlation coefficient.

$n$  = number of observations

Following table represents the calculated and tabulated values of t-statistics for the test of significance of coefficient of correlation.

**Table-9**

**Calculated and tabulated values of t-statistics for r**

finance company	calculated t	Tabulated value t		Results
		5%	10%	
NIDC	0.8565	2.571	2.015	accepted
CFL	0.9425	2.571	2.015	accepted
GFL	0.124	2.571	2.015	accepted
UFL	2.259	2.571	2.015	accepted
SFL	0.11	2.571	2.015	accepted
UFL1	0.316	2.571	2.015	accepted
GWFL	1.1155	2.571	2.015	accepted
CAMB&FL	1.779	2.571	2.015	accepted
COMB&FL	2.5565	2.571	2.015	accepted
CIT	1.747	2.571	2.015	accepted

**(Source: Annex-9)**

At 5% and 10% level of significance, the null hypothesis is accepted for all sample finance companies as the calculated value of t-statistics is lower than the tabulated values. If finance companies calculated value of t-statistics is greater than tabulated value the null hypothesis is rejected. In conclusion it can be inferred that the market values of finance companies whose null hypothesis is accepted are independent of their book values. Where as the market values of the finance companies whose null hypothesis is rejected is not independent of their book values or book values are not dependent.

#### **4.9.4) Regression analysis**

The implicit assumption of this statistical analysis is that market value per share is the function of book value per share and the market value is dependent variable.



For the analytical explanation of the regression analysis the formula described in research methodology chapter is used the results of the statistical operation and presented in the following table.

**TABLE-10**  
**SIMPLE REGRESSION ANALYSIS**

FINANCE COMPANY	a	b
NIDC	-39.82	0.7726
CFL	-48.816	0.9994
GFL	76.53	0.00287
UTDFL	48.34	0.1359
SFL	-184.47	1.454
UVSFL	201.438	0.1414
GWFL	44.986	0.4271
COMB&FL	222.89	-0.6125
CAMB&FL	-19.23	0.8224
CIT	-957.43	3.7167

(Source: Annex-9)

As per the outcomes of the regression equation of market value for COMB&FL doesn't prove that market value is the function of book value per share. The slope of the equation is negative with value being -0.6125.

For the rest of finance companies It's seems to be explaining the relationship of book value to market value NIDC, CFL, GFL, UTDFL, UVSFL, SFL, GWFL, CAMB&FL and CIT have positive value of their slope In this, CIT beats the market with the slope rate of 3.7167, following SFL with 1.454, CFL with .9994, CAMB&FL with 0.8224, NIDC with 0.7726, GWFL with 0.4271, UVSFL with 0.1414, UTDFL with 0.1359 and GFL with 0.00287.

From the above analysis, it is revealed that the regression equations don't show unique and acceptable behavior of the book value of the shares in determining the market value of share. Different finance companies have different patterns explanation on the dependent variables and it is therefore recommended to use and Text the significance of some other statistical results.

#### 4.9.5) Standard deviation of random error term.

Standard deviation of random error term is calculated by the formula described in research methodology. it is also called standard error of random terms or standard error of estimates and this term gives the range for the predictions. With the help of regression equation perfect prediction is practically impossible. The standard error of estimates measures the accuracy of the estimate figures. The smaller the value of standard error of estimates, the closer will be the dots of equation from this line. Zero standard error of estimates indicates that there is no variation about the line and correlation perfect. Thus with the help of standard error of estimates it's possible to as certain how perfect and representative the regression line is the description of the relationship between two series.

**TABLE-11**  
**Standard deviation of random error term**

Finance company	NIDC	CFL	GFL	UTDFL	SFL
$S_y$	51.01	53.81	25.70	147.99	29.56
Finance company	UVSFL	GWFL	CAMB&FL	COMB&FL	CIT
$S_y$	30.73	14.31	22.18	44.77	238.05

(Source: Annex-9)

The standard error of estimate is very high incasing of CIT, UTDFL which gives a very wide range of estimate of dependent value and which is difficult to explain as well. Similarly standard error of NIDC,CFL, COMB&FL,UVSFL,SFL ,GFL, CAMB&FL and GWFL are 51.01,53.81,44.77,30.73,25.70,22.18and 14.31 respectively. From the above stated standard error of the estimates of the dependent variable, it can be calculated that the predictive power of the equation of the regression dependents on the individuality of the finance companies, the predictability differs from finance company to finance company.

However, it is possible that increasing the number of observation can change this situation. And the same matter has been the major obstacle of this study as our stock does not have a long history to consider this aspect.

#### 4.10) MAJOR FINDINGS

Based on the analysis of data and their interpretation, the major findings of the study are summarized as follows:-

- There are altogether 158 companies listed in NEPAL STOCK EXCHANGE and the listing rate is in increasing trend.
- Among the various sectors Hydro power and Commercial Bank are dominant position in terms of volume and traded amount.
- According to the trading performance of the selected companies, a NIDC Capital market has secured the highest number of transaction and highest traded number of shares. Likewise, the highest traded amount among the selected companies belonged to SFL while CAMB&FL possessed the highest total paid-up capital and UFL secured the highest total market value.
- Most of the finance companies are offering cash dividends every year and therefore investors are investing their funds in purchasing shares of finance companies.
- The risk return analysis is another major tool used in the study it has been observed that, this analysis would have given better result if adequate data were available. But sufficient data couldn't be collected due to newly listed companies and therefore the result derived through analysis couldn't fully explain the reliable behavior of the share prices in the market.
- The average realized rate of return of all these finance companies are found different over the sample period. on the basis of the coefficient of variation and expected rate of return over the review period , stock of COSMB&FL have been considered as the best investment, as bear low risk with higher return. the co-efficient of variation and expected rate of return of COSMB&FL is 1 and 0.2 respectively.
- The beta coefficient, which measures the risk of individual security in relative terms, suggested that none of the shares of sample finance companies were less risky than those average stocks traded in the stock exchange.
- The run test, which measures the randomness of sample events, suggested that the changes in the market price of common stock of selected finance

companies were not random. In fact, run in every finance companies was lower than expected. This indicates that market over reacted to the available information.

- The correlation coefficient and the regression analysis tests were conducted for the selected finance companies. It revealed that, there was no relation between the book value per share and market price per share or independent variable (BVPS) did not fully explain the dependent variables (MPPS)

## Chapter-V

### Summary Conclusion and Recommendations

This research attempts to analyze the stock price behavior of listed finance companies in Nepal. This chapter deals with the conclusions derived from the study of share price behavior of ten finance companies on the basis of the analysis of data and findings. This chapter consists of three sections; the first section provides the summary of the study, the second section draws the conclusion of the study where as the third, the final section purposes recommendations to deal with problems on the basis of the findings.

#### **5.1) SUMMARY**

The study was conducted as per the prescribed model developed by Trivuban University with the specific objective of analyzing the share price behavior of listed finance companies in Nepal. Its empirical tests have been presented in the fourth chapter.

As per nature of the study, secondary data of selected finance companies covering the period from 2003 to 2008 are employed for this research. Secondary data are taken from annual reports of these finance companies, NEPSE and SEBON. The regression analysis, correlation coefficient and run test along with standard deviation, coefficient of variation, beta coefficient, and return analysis were employed for the analysis and interpretation of those collected data.

The overview of the Nepalese stock market has been sketched before analyzing the results of ten finance companies. The recent position and performance of stock market in Nepal has not been able to gain economic position as expected due to market limitations like, limited number of buyer and sellers, rigid government policies, weak position of corporate sector etc.

Arum test was used to test the randomness of sequence of sample stock on the basis of the order of sample events. The result revealed that the successive price changes are dependent. The relationship between market value per share and book value per share were also tested with the help of regression equation and correlation coefficient showed that there is no relation between market value per

share and book value per share. It also implied that independent variable does not fully explain the dependent variable.

Besides these tests, other statistical tools as standard deviations, coefficient of variation and beta coefficient were also used to examine the risk involved in the common stocks of the finance companies. Most of the finance companies seemed to be at less risky positions, market penetration and continuous declaration of dividends that encourage the existing as well as potential investors to buy their shares.

## **5.2) conclusion**

The random walk hypothesis of share price behavior was tested to determine whether the successive changes to ten finance companies were random or not. a run test was used to test the randomness of sequence of sampled events on the basis of the order of sample events . This technique is based on the order or sequence in which the individual score of observation were obtained. In the series of price change observed implies that the price changes in the future market will not be independent on the price changes of the previous period. It brings about the information of past price changes is helpful in predicting future price changes. Therefore, sufficient opportunities are available to institutional and investors to make higher expected profits in future based on those historical price series. In the meanwhile the statistical analysis regarding the risk and return of the sampled stocks shows of the finance companies are offering cash dividends every year which may not be applicable to other types of financial institutions.

The relationship between the market value per share and book value per share has been tested with the significance of the regression equation and the correlation coefficient. Which gives an idea whether the market prices fully reflect all the publicly available information or not. The analysis regarding the companies has no relation between market price per share and book value per share or independent variable (BVPS) does not fully explain the dependent variable (MPPS).

## **5.3 recommendations**

The findings of this study may provide important information to those who are concerned directly or indirectly with the stock market activities.

The following recommendations have been formulated;

- The performances of Hydro power sector and commercial banks are better than the other sectors. so it is recommended to the investors to invest their investment in these sectors.
- It is also recommended to the concerned regulatory body to carryout further research on the specifics of market efficiency to develop an efficient capital market.
- NEPSE index plays major role for creating investment opportunity. So for removing stock market difficulties such as transaction facilities should be managed in effective way by formulating investor's protection act.
- Because of the persistence in the stock market price movements, professional traders either institution or individual can beat the market. Thus, it is recommended that the investors should be alert to exploit the opportunities through short-term speculation. There is only one stock market so the expansion of NEPSE or establishment of new stock market is necessary.
- The stock exchange should carry out periodic research and avail the findings to the public which would help the people to make better investment decision .therefore before making investment decision the investor should analyzed the periodic research of NEPSE and SEBON for better investment decision .
- There exists excessive price fluctuation as observed from the data and its analysis. To control such erratic price fluctuations the regulatory body (Nepal Rostra Bank and SEBON) should impose effective provision (policies and laws) to the exchange member.
- The public investors should not invest their savings in shares haphazardly. They should at least analyze the future possibilities or get suggestions from expert about the financial positions and the level of risk prior to taking and investment decision.
- It is also recommended to the concern body to carry out or helps to carry further research on stock market behavior for the betterment of the stock market

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Fiscal year 2007/08)  
ANNEX-1(i)

Description	Jul/Aug		Aug/Sep		Sep/Oct		Oct/Nov	
	Share unit	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs in 'million'
Commercial bank	1149.9	1130.1	880.1	995.9	1394.6	1498.5	459.4	550.0
Development bank	436.9	171.9	129.3	70.2	204.6	158.2	173.2	197.5
Insurance	105.2	35.7	34.8	28.3	15.2	10.6	4.0	3.1
Hydro power	834.8	293.0	512.7	290.3	847.7	258.8	184.7	58.8
Finance	248.2	80.2	128.0	53.2	134.5	94.0	105.6	108.8
Manufacturing & processing	16.6	0.8	16.7	0.7	13.3	0.1	-	-
Hotel	43.2	5.1	8.7	1.2	1.8	0.2	8.9	1.0
Trading	0.2	0.6	0.1	0.2	0.8	2.0	0.7	1.7
Other	9.0	0.3	101.9	1.7	115.2	2.0	10.3	0.2
<b>Total</b>	<b>2844.0</b>	<b>1717.7</b>	<b>1812.3</b>	<b>1441.7</b>	<b>2727.7</b>	<b>2024.4</b>	<b>946.8</b>	<b>921.1</b>

(Fiscal year 2007/08)

## ANNEX-1(ii)

Description	Jan/Feb		Feb/mar		Mar/Apr		Apr/May		May/June	
	Share unit in '000'	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs in 'million'	Share unit in '000'	Traded amount Rs 'million'
Commercial bank	479.9	623	697.5	909.0	337.1	419.6	733.4	763.9	778.9	758.0
Development bank	140.7	122.7	197.1	159.2	157.3	123.7	171.9	160.0	121.9	118.0
Insurance	25.0	21.3	18.7	20.0	62.7	18.7	14.8	10.6	32.0	22.0
Hydro power	601.9	258.0	604.3	250.3	286.4	123.1	142.5	95.3	835.5	660.6
Finance	289.6	156.4	231.7	215.8	332.6	224.7	353.1	320.1	345.0	234.5
Manufacturing & processing	0.0	0.1	430.3	315.6	1.5	2.0	1037.3	6.2	0.0	0.1
Hotel	2.0	0.4	8.1	1.6	1.6	0.3	12.9	3.0	11.0	1.3
Trading	0.1	0.1	2.3	4.9	2.8	6.2	3.2	6.8	0.1	0.3
Other	0.1	0.0	1.4	0.0	115.2	2.0	26.7	17.4	0.1	0.2
Total	1539.3	1182.0	2191.4	1876.4	1297.2	920.2	2495.8	1383.3	2124.5	1795.0

(Fiscal year 2007/08)

## ANNEX-2

S.N	Name of the company	Outstanding equity	Paid up value	No of transaction	Traded share in unit	Traded amount in million
1.	NIDC Capital Market	750000	100	38	7.3	4.0
2.	Citizen investment trust	400000	100	3	0.0	0.0

3.	Capital merchant banking and finance ltd	1610000	100	12	3.8	0.9
4.	Goodwill finance limited	500000	100	1	1.5	0.3
5.	Central finance limited	480000	100	5	0.2	0.0
6.	United finance limited	600000	100	6	0.1	0.1
7.	Universal finance limited	501306	100	21	3.5	0.7
8.	Cosmic merchant banking and finance ltd	750510	100	6	0.4	0.0
9.	Standard finance limited	660000	100	12	16.9	6.6
10.	Gorkha finance limited	300000	100	2	2.2	0.4

ANNEX3

NIDC CAPITAL MARKETS  
CENTRAL FINANCE LTD

GORKHAFINANCE LTD

year	mps	dividend		year	mps	dividend		year
		cash	stock			cash	stock	
<b>2003/04</b>	420	-	-	<b>2003/04</b>	250	20%	-	2003/04
<b>2004/05</b>	420	12%	100%	<b>2004/05</b>	260	5%	-	2004/05
<b>2005/06</b>	420	12%	-	<b>2005/06</b>	260	-	-	<b>2005/06</b>
<b>2006/07</b>	455	-	-	<b>2006/07</b>	300	-	-	<b>2006/07</b>
<b>2007/08</b>	455	-	-	<b>2007/08</b>	300	-	-	<b>2007/08</b>

Universal Finance ltd  
Standard finance ltd

United finance ltd

year	mps	dividend		year	mps	dividend		year
		cash	stock			cash	stock	
2003/04	180	-12%	-	2003/04	400	15%	-	2003/04
2004/05	195	20%	50%	2004/05	405	15%	-	2004/05
2005/06	195	-	-	2005/06	405	-	-	2005/06
2006/07	200	-	-	2006/07	416	-	-	2006/07
2007/08	200	-	-	2007/08	416	11.84	-	2007/08

Goodwill finance ltd

COSMB&FL

CAMB&FL

year	mps	dividend		year	mps	dividend		year
		cash	stock			cash	stock	
2003/04	200	-	-	2003/04	100	-	-	2003/04
2004/05	200	12%	100%	2004/05	100	-	-	2004/05
2005/06	205	12%	-	2005/06	100	60%	-	2005/06
2006/07	220	-	-	2006/07	121	20%	-	2006/07
2007/08	220	-	-	2007/08	122	23%	-	2007/08

Citizen investment trust

year	mps	dividend	
		cash	stock
2003/04	300	-	-
2004/05	325	12%	100%
2005/06	325	12%	-

2006/07	345	12%	-
2007/08	352	-	-

(Annex- 4)

Risk and return of Market Index

Year	MI	Realized Rate of Return (R <sub>m</sub> )	$R_m^z - R_m$	
2003/04	227.54	-	-	
2004/05	204.86	-0.099	-0.223	
2005/06	222	0.083	-0.041	
2006/07	216.92	-0.022	-0.146	
2007/08	360.7	-0.662	0.538	
				$\phi$ (R

return. a) Calculation of realized rate of

$$\frac{MI_{t+1} - MI_{tZ}}{MI_{tZ}} = \frac{204.86 - 227.54}{227.54}$$

b) Calculation of mean

$$R_m^z = \frac{\phi R_m}{n} = \frac{0.624}{5} = 0.124$$

c) Calculation of standard deviation

$$\dagger_m = \sqrt{\frac{\phi(Rm Z Rm)^2}{n}} = \sqrt{\frac{0.360}{5}} = 0.268$$

d) Calculation of of variation

$$\dagger_m^2 = \frac{\phi(Rm Z Rm)^2}{n} = \frac{0.360}{5} = 0.072$$

e) ) Calculation of coefficient of variation

$$CV = \frac{\dagger_m}{R_m} = \frac{0.268}{0.124} = 2.161$$



## ANNEX - 5

YEAR	1. CIT		2. COMB&F		3. NIDC		4. CFL		5.G FL	
	MPPS	BVPS	MPPS	BVPS	MPPS	BVPS	MPPS	BVPS	MPPS	BVPS
2003/04	202.92	110	121	211	378.75	211	224.167	121.82	72.5	50
2004/05	339.33	153	109.25	115	355.17	210	225.42	227.36	81.75	60
2005/06	291.17	176	165.17	110	355	210	229.83	145	95.167	79
2006/07	334.83	162	145.83	117	345.75	291.79	235	230	180.083	89.96
2007/08	329.92	180	184.42	117	415.42	307.51	284.58	230	155.33	105.35

YEAR	6. UVSFL		7. UTDFL		8. GWFL		9. CAMB&FL		CIT	
	MPPS	BVPS	MPPS	BVPS	MPPS	BVPS	MPPS	BVPS	MPPS	BVPS
2003/04	180.91	257	351.67	60	187.33	125	177.58	105.62	117.42	64
2004/05	193.33	250	386.33	79.38	199.58	125	201.67	121.15	126.92	71
2005/06	179.67	179	354.67	89.96	205.58	125.41	194.83	140.21	93.67	82
2006/07	271.25	236	362.17	105	206	82.10	174.58	131.14	150.17	90
2007/08	227.25	234	416.75	112.52	212.42	90.05	220.25	140.65	184.42	150

## NIDC Capital Markets Ltd

Year	Market Price	Dividend			Total	R <sub>j</sub>	$\sum (R_j - R_j)$	$\sum (R_j - R_j)^2$
		Cash	Stock	Calculated				
2003/04	350	12%	-	-	12%	-	-	-
2004/05	400	12%	-	-	12%	0.177	-0.006	0.000036
2005/06	420	5%	-	-	5%	0.064	0.171	0.029
2006/07	455	-	-	-	-	0.083	0.0546	0.003
2007/08	455	-	-	-	-	0	0.077	0.005
						$R_j = 0.322$		$\sum (R_j - R_j)^2 = 0.032$

## a) Realized rate of return

$$\begin{aligned}
 R_j &= \frac{D_t + P - P_{t-1}}{P_{t-1}} \\
 &= \frac{12 + 400 - 350}{350} \\
 &= 0.177
 \end{aligned}$$

## b) Calculation of expected rate of return

$$\begin{aligned}
 \sum (R_j) &= R_j / n \\
 &= 0.0322 / 5 \\
 &= 0.006 \\
 &= 0.6\%
 \end{aligned}$$

c) Calculation of S.D

$$\begin{aligned} \dagger_j &= \sqrt{\frac{(R_j - \bar{R}_j)^2}{n}} \\ &= \sqrt{\frac{0.037}{5}} \\ &= 0.0831 \\ \dagger^2 &= \frac{(R_j - \bar{R}_j)^2}{n} \\ &= 0.007 \end{aligned}$$

d) C.V =  $\dagger_j / \bar{R}_j$

$$\begin{aligned} &= 0.084/0.006 \\ &= 14 \end{aligned}$$

e) Calculation of co variance

$$\begin{aligned} \text{Cov}(R_j, R_m) &= \phi (R_j - \bar{R}_j) (R_m - \bar{R}_m) / n \\ &= 0.027/5 \\ &= 0.005 \end{aligned}$$

f) Beta Coefficient ( $\beta_j$ ) =  $\frac{\text{cov}(R_j, R_m)}{\dagger^2}$

$$\begin{aligned} &= 0.005/0.007 \\ &= 0.714 \end{aligned}$$

Note : similarly same procedure have been applied of rest of the sample finance company ( CIT, UFL, GWFL, CM&B, UFLT, CM&BL, SFL, CFL, GFL) for the calculation of realized rate of return, expected rate of return, standard deviation, coefficient of variation, co variance and beta coefficient are presented in table .

A  
NNE  
X-7(i)

**SUMMARY OF MONTHLY- WISE MARKET PRICE PER SHARE OF  
EACH SAMPLE FINANCE COMPANY**

1. Market Price Of NIDC						2. Central Finance Limited				
\ year	2003/04	2004/05	2005/06	2006/07	2007/08	Month \ Year	2003/04	2004/05	2005/06	2006/07
JAN	310	410	350	420	420	Jan	210	200	205	210
FEB	310	390	355	355	425	Feb	210	205	205	210
MAR	310	390	355	355	425	Mar	215	210	210	215
APR	375	350	380	270	390	Apr	215	200	210	215
MAY	400	350	380	350	390	May	225	215	225	220
JUN	400	410	390	359	410	Jun	230	220	225	220
JUL	400	380	390	375	415	Jul	215	210	230	230
AUG	410	380	410	375	410	Aug	200	235	230	230
SEP	380	410	425	410	420	Sep	235	250	250	250
OCT	380	420	410	425	435	Oct	250	260	265	250

OV	410	415	420	435	440	Nov	235	240	250	270
EC	420	420	420	455	455	Dec	250	260	265	300

ANNEX-7 (II)

3. GORKHA FINANCE LTD						4. UNIVERSALFINANCE LTD				
Year	2003/04	2004/05	2005/06	2006/07	2007/08	Month\Year	2003/04	2004/05	2005/06	2006/07
N	50	60	100	170	130	Jan	190	200	170	320
B	50	65	90	205	130	Feb	199	205	205	320
R	55	69	80	220	130	Mar	180	201	220	320
R	75	71	70	235	140	Apr	170	201	235	230
Y	75	75	90	270	154	May	155	191	270	235
N	80	71	80	295	180	Jun	175	191	280	306
L	85	85	95	115	170	Jul	190	190	110	306
G	100	85	100	110	165	Aug	188	185	100	293
P	100	95	101	100	165	Sep	180	185	110	275
T	110	100	101	111	150	Oct	184	195	111	240
V	105	100	115	150	170	Nov	180	185	150	210
C	105	105	120	180	180	Dec	180	195	195	200

ANNEX- 7 (III)

5. United finance limited						6. S	
Month\year	2003/04	2004/05	2005/06	2006/07	2007/08	Month\Year	2003/04
JAN	240	250	380	360	370	Jan	175
FEB	330	250	385	415	380	Feb	195
MAR	325	270	390	425	400	Mar	195
APR	320	275	395	460	400	Apr	176
MAY	310	390	400	455	450	May	176
JUN	390	290	405	220	460	Jun	176
JUL	380	300	405	266	480	Jul	185
AUG	375	310	390	318	440	Aug	185
SEP	375	325	390	355	420	Sep	185
OCT	380	325	400	390	390	Oct	185
NOV	390	390	405	395	395	Nov	185
DEC	405	405	416	416	416	Dec	230

ANNEX-7-(IV)

7. Goodwill finance limited						8. Cosmic mer	
Month\year	2003/04	2004/05	2005/06	2006/07	2007/08	Month\Year	2003/04
JAN	150	210	180	150	250	Jan	150
FEB	150	200	170	165	250	Feb	150
MAR	151	205	171	150	210	Mar	140
APR	155	200	171	130	230	Apr	131

MAY	160	195	195	135	235	May	111
JUN	160	180	200	150	245	Jun	111
JUL	180	150	205	170	235	Jul	110
AUG	150	245	210	180	215	Aug	90
SEP	245	230	200	210	220	Sep	105
OCT	230	200	206	200	221	Oct	100
NOV	200	205	210	215	221	Nov	111
DEC	200	200	205	220	220	Dec	100

ANNEX 7 (V)

9. Capital banking and finance limited						10.C	
Month\year	2003/04	2004/05	2005/06	2006/07	2007/08	Month\Year	2003/04
JAN	110	121	130	170	180	Jan	220
FEB	130	121	145	205	175	Feb	220
MAR	154	122	145	220	175	Mar	220
APR	121	121	150	235	170	Apr	230
MAY	131	121	150	250	162	May	230
JUN	141	140	150	250	173	Jun	230
JUL	150	150	170	250	225	Jul	190
AUG	130	130	170	251	225	Aug	190
SEP	122	130	175	251	190	Sep	240
OCT	150	100	180	250	181	Oct	235

NOV	130	130	185	250	184	Nov	235
DEC	150	125	190	150	175	Dec	245

Annex-8

### Calculation of Run Test and Z-Value of Sample Company

1. Market Price Of NIDC					
Month\year	2003/04	2004/05	2005/06	2006/07	2007/08
JAN	310	410	350	420	420
FEB	310	390	355	355	425
MAR	310	390	355	355	425
APR	375	350	380	270	390
MAY	400	350	380	350	390
JUN	400	410	390	359	410
JUL	400	380	390	375	415
AUG	410	380	410	375	410
SEP	380	410	425	410	420
OCT	380	420	410	425	435
NOV	410	415	420	435	440
DEC	420	420	420	455	455



A) Calculation of Median

$$Me X^{\frac{(N+1)r}{2}}$$

$$= 30.5^{th}$$

$$r = 14, \quad n_1 = 28, \quad n_2 = 32$$

B) Calculation of Z Value

$$r - \frac{2n_1, n_2}{n_1 \Gamma n_2} \Gamma 1$$

$$Z = \frac{\sqrt{2n_1, n_2 (2n_1, n_2 Z n_1 \Gamma n_2)}}{(n_1 \Gamma n_2)^2 (n_1 \Gamma n_2) Z 1}$$

$$z = -4.37$$

Note : similarly same procedure have been applied of rest of the sample finance company ( CIT, UFL, GWFL, CM&B, UFLT, CM&BL, SFL, CFL, GFL) for the calculation of parameters for run test and Z value are presented in table .

Annex-9

Calculation of correlation coefficient of determination

NIDC Capital Markets			
MPPS (X)	BVPS(Y)	<u>XY</u>	<u>X<sup>2</sup></u>
378.75	211	79916.25	143451.56
355.17	210	74585.7	126145.73
355	210	74550	126025
345.75	291.79	100886.39	119543.06
415.42	307.51	127745.8	172573.78

$\Sigma (x) = 1850.09$	$\Sigma (y) = 1230.3$	$\Sigma (xy) = 457684.14$	$\Sigma X^2 = 687739.12$

A) Calculation of mean

$$\text{Mean } (\bar{X}) = \frac{\Sigma X}{n} = 370.018$$

$$\text{Mean } (\bar{Y}) = \frac{\Sigma y}{n} = 246.06$$

$$\text{B) Coefficient of Correlation } (r) = \frac{n \Sigma XY - \Sigma X \Sigma Y}{\sqrt{n \Sigma X^2 - (\Sigma X)^2} \sqrt{n \Sigma Y^2 - (\Sigma Y)^2}} = 0.4433$$

$$\text{C) Coefficient of Determination } (r^2) = 0.1965$$

D) Calculation of Regression Analysis

$$b = \frac{n \Sigma XY - \Sigma X \Sigma Y}{n \Sigma X^2 - (\Sigma X)^2} = 0.7726$$

$$a = \bar{Y} - b\bar{X} = -39.82$$

$$\text{E) Standard Error of Estimate } (S_Y) = \sqrt{\frac{\Sigma Y^2 - \frac{(\Sigma Y)^2}{n} - \frac{(\Sigma XY - \frac{\Sigma X \Sigma Y}{n})^2}{n \Sigma X^2 - (\Sigma X)^2}}{n-2}} = 51.01$$

Note: Similarly same procedure have been applied of rest of the sample finance company (( CIT, UFL,GWFL, CM&B, UFLT, CM&BL,SFL,CFL,GFL)for the calculation of Correlation coefficient , regression equation presented in table..

