CHAPTER - I
INTRODUCTION

1.1 Background of the Study

In a recent time, world economy has been more competitive and complicated. Globalization of economy and market has been one of the major instruments of change. Due to globalization, every sort of change occurring in one sector of the world affects other sector. With the result of dynamics of global changes and development, stock markets are rapidly responding due to its sensitivity. Therefore, now-a-days stock market has become global phenomenon and a basic concern of financial and economic condition of a nation. Stock market index is perceived as an indicator of investor's confidence to invest in the stocks, which obviously, represents economic status of the nation. As capital market is the crucial element in the national economy, its role in reinvigorating and boosting the economic activities in the country holds significance that helps to mobilize domestic resources. Its role to provide the best investment opportunity by transferring the funds from surplus sectors to deficit sectors through transaction of stocks can not be ignored. Hence, for the attainment of self reliant growth of the economy and smooth running of the economic activities of the nation, stock market's role has become major importance in financial management.

The act of raising fund by issuing shares to the public in Nepal started in 1937.Though the development of securities markets could not be a national policy of Nepal led to institutional development of securities markets with the establishment of Security Exchange Centre (SEC) in 1976.The SEC used to manage and operate primary and secondary markets of long-term government securities and corporate securities. After some years of establishment, policies and programs were made to develop and promote Stock Exchange and market makers.

With the objectives of regulating securities transactions and protecting interest of the investors, a Security Exchange Act was enacted in 1993. The act provided some legal and

institutional basis for the securities markets development. The SEC was converted into the Nepal Stock Exchange Ltd (NEPSE) in 1993 with the objectives of operating and managing secondary transaction of securities. After this conversion the open cry out system of trading among the stockbrokers started. It means transaction of the securities is conducted an open auction principle on the trading floor. The establishment of the specialized firm as NEPSE proved to be a strong step towards liberalization of the economy and a mile stone in the path of the economic development in the nation.

Recently NEPSE had introduced ATS system which is of full automated computer software system for the transaction process. This has helped eliminate all possible human errors as in the open cry trading procedures. Several international practices have been incorporated to make the system international compatible and modifications have been made to customize the existing rules and regulations of the country.

Under the provision of securities exchange act 1983A.D, securities board, Nepal (SEBO/N) was established in May 26, 1993 A.D. to regulate and manage the securities market. Since the establishment, SEBO/N has been concentrating its effect to improve the legal and statutory frame work, which one the banes for the healthy development of capital market. The amendment of that same act was made in 1997. This amendment made provisions for registering securities business person and submitting semi and annual report to SEBO/N. It is the apex regulator of the securities markets in Nepal. It provides licenses to Stock Exchange and Securities business persons (stockbrokers, securities dealers, market makers, and issue managers) it approves public securities. NEPSE is the market operator and it provides membership to the securities business persons. Listed companies and the securities businesspersons report their performance to SEBON and NEPSE.

The securities market plays an important role in mobilizing savings and channeling them into productive investment for the development of commerce and industry of the country. It assists the capital formation and economic growth of the country. Nevertheless, the Nepalese securities markets still could not take its heights. The further improvement of this market is crucial.

History indicates that there are two basic theories of stock price behavior: the Technical Analysis theory and Fundamental Analysis theory. Briefly, Technical analysis is a financial markets technique that claims the ability to forecast the future direction of security prices through the study of past market data, primarily price and volume. In its purest form, technical analysis considers only the actual price behavior of the market or instrument, on the assumption that price reflects all relevant factors before an investor becomes aware of them through other channels. The fundamental analysis evaluates the 'intrinsic value' of security. The fundamentalist maintains that at any point of time every share has an intrinsic value which should be in principle to be equal to the present value of the future stream of income from that share that discounted at the appropriate risk related rate of interest. The actual price of security therefore is considered a function of a set of anticipated capitalization rate. Investors can use both these different but somewhat complementary methods for stock picking. Many fundamental investors use technical for deciding entry and exit points. Many technical investors use fundamentals to limit their universe of possible stock to 'good' companies. .The choice of stock analysis is determined by the investor's belief in the different paradigms for "how the stock market works". Strangely, enough an organized stock market has emerged for some years ago in Nepal. The present study represents an effort to improve on shortcomings of the past studies in the hope that the "Behavior of Stock price" can easily be understood.

1.2 Statement of the Problem

After the establishment of the Nepal Stock Exchange Limited (NEPSE), has emerged and grown rapidly within the short span of time period. The shares of commercial banks play a vital role in the overall index of NEPSE. The Efficient Market Hypothesis (EMH) states that three forms of stock market prevail in the theory;

) Strong

The strong form of efficient market hypothesis states that current market prices reflect all the relevant information in security prices. The market price reflects the true or intrinsic value of the share based on underlying future cash flow and no one can beat such market.

- **Semi Strong**

The semi-strong form of efficient market hypothesis states that current market price also reflects all the publicly available information besides all price movements.

- **Weak**

The weak form of efficient market hypothesis states that the current share prices fully reflect the information contained in the past price movements. The stock price will fluctuate less and more randomly. Weak efficiency market are markets in which past prices provide no information about future prices that would allow a short-term trader to buy and hold strategy.

The theory of efficient market in stock market prices presents important challenges to both the chartist (technical analysis) and the proponent of fundamental analysis. For the chartist, the challenge is straight forward. If the efficient market theory is a valid description reality, the work of the chartists, like that of the astrologer, is of no real value in stock market analysis. The empirical evidence to data provides strong support for the efficient market theory. The only way the chartist can vindicate his position is to show that he can consistently use his techniques to make better than chance predictions of stock prices.

The challenge of the theory of efficient market to the proponent of fundamental analysis, however, is more involved. If the efficient market theory is valid and if security exchange are “efficient” markets, then stock prices at any point in time will represent good estimates of intrinsic or fundamental values. Thus, additional fundamental analysis is of value only when the analyst has new information, which was not fully considered in forming current market prices, or has new sights concerning the effects of generally available information which are not already implicit in current prices. If the analyst has neither better insights nor new information, he may as well forget about fundamental analysis and choose securities by some random selection procedure.

Behavior of stock prices shows the misevaluation of the stock price in the secondary market. The price earning information was not made available timely to the investors. The investors could not identify the good and bad stocks. So, the lack of value judgment to determine the stock price is the serious problem of the Nepalese stock market. This happens due to the inability of the regulatory bodies of the stock market. The problem can be solved only when the real determinants of stock price are diagnosed and identified.

The major causes of the deficiencies in Nepalese stock market appeared to be the profitability and the good governance of the company, government policy regarding investment, market operation system, investors' knowledge information disclosures and inefficiency of the market. Despite these facts, market makers involved in the securities market are unable to exhibit the well performance according to the expectations of the investors.

Some analyst doubts the concept of stock market efficiency in developing countries due to some reasons. These are as follows (Sharma and Kennedy 1977; 392)

- Difficulty in detecting and discriminating among investment opportunities
- Investment performance is given to physical assets rather than to financial assets
- A dichotomy exists in the financial activities between organized and unorganized money markets, etc.

Therefore, this study is carried out to analyze the market share prices of the Nepalese stock prices of the Nepalese stock market in relation to banking sector and to recommend for the improvement. To sum up the study, the study deals with follows:

- What is the stock price behavior in Nepal?
- Whether the other factors affects the share price or not?
- Is the Nepalese stock market efficient in pricing share?
- Does the RWH exist in Nepalese stock market?
- Is it possible to predict the price of the share of a company from past price series?

- Is there any specific relationship of MPS with fundamental financial indicators (EPS, DPS, NWPS and ROE)?
- What is the behavior of the Commercial bank index and NEPSE Index?

1.3 Objectives of the Study

NEPSE is an organized stock exchange for trading stock in secondary market. This aims to identify the behavior of stock price in NEPSE and other relationship with stock price, so that it will be easy to raise the scattered fund from small investors to foster the economic development of the nation. The specific objectives of the study are as follows:

- To study and analyze the stock price movement of the commercial banks.
- To analyze the stock volatility of the stock
- To analyze the co-movement of commercial bank and the NEPSE index.
- To study and analyze the relationship of NEPSE with independent variables(Amount of public issue; Paid up value and Total turnover)
- Analysis of Random walk hypothesis to know the market efficiency.
- To test whether the successive price changes are independent or dependant with the price of historical changes?
- To analyze correlation among various financial indicators (EPS; DPS; NWPS; ROE; MPS).

1.4 Significance of the Study

Investing in the stock is highly risky as being ownership capital. It represents only a final claim while in liquidation. Stock price is determined by a number of factors. Some factors are quantitative whose effect can be quantified by a number of factors. Some factors are qualitative whose effect on share price can't be quantified. The cause of price change may be signaling or informational effect, low/high return; high/low risk; lack of knowledge; low income of the investors and high price of the stock. Since the market price of the share is the function of the information, these studies will focus to the sensitivity of the stock price of NEPSE with focus to the commercial banks towards various factors.

This study provides the guidance to the investors of stock market which is very beneficial to all parties involved in the stock market.

- This study will contribute literature to further researcher in this area.
- This study is helpful to growing number of investors and individual institution, risk return character of the market growing investment bankers etc.
- This study is very useful to potential investors who are interested to know the effect of price trend, volume of stock traded, impact of signaling factors on NEPSE index.
- This study is extremely helpful to financial managers of corporate firms to know the behavior of their share price with respect to change in financial position of the firm.

1.5 Limitations of the Study

For the MBS program this study represents the partial fulfillment and this research has been conducted and submitted within a time constraint, this study will be limited by the following factors:

- Since the data covers only a certain period and only stock price of only some banks are studied, the findings may not be a complete picture of the Nepalese stock marker.
- The other limitations are time constraints, resource constraints, and lack of research experience.
- The regression equations are based on only five years data whereas the various tests are done on the basis of daily stock price.
- The major portions of analysis and interpretation have been done on the basis of the available data and information. So the consistency of findings and conclusion is strictly dependent upon the reliability of secondary data and information.
- The data has been collected from NEPSE for its official records and data are not verified.

1.6 Organization of the Study

Entire thesis has been organized into five parts, each devoted to some aspects of the study of the market price efficiency.

The titles of each part are as follows:

Chapter -I: Introduction

This chapter introduction describes background of the study, statement of the problem, the major issues to be investigated along with the objectives and scope of the study, limitation of the study and ends with the organization of the study.

Chapter –II: Review of Literature

This chapter is devoted to theoretical analysis and brief review of related literature. It tries to define the concept of security market, and conceptual theories of stock price. This chapter also reviews the literature from foreign context, as well as the Nepalese context, highlighting the major contributions of different studies like international journals, Masters Dissertations and Nepalese journals.

Chapter- III: Research Methodology

This chapter, Research Methodology, is the most important part to the study which discusses the methodologies used in the study. It deals with research design, sources and nature of data, sampling and population, test model and method of analysis as test methodology and definition of key terms.

Chapter- IV: Data presentation and Empirical Analysis

This chapter, Data presentation and empirical analysis present the graphical and statistical analysis of stock behavior includes analysis of NEPSE and commercial Banks indices behavior and at the end of this chapter

Chapter-V: Summary, Conclusion and Recommendations.

This chapter of the study states summary and conclusion, findings, suggestion and recommendation. It includes summary of the study, findings, conclusion drawn from the findings and the recommendation to the concerned authorities, companies, investors and forthcoming researches for improving the future performance of the sample banks. Finally, an extensive, bibliography and appendices are also presented at the end of the thesis work.

CHAPTER - II

LITERATURE REVIEW

This chapter will make an effort to lay down certain decision rules that can be some value in assessing the stock price behavior. The first section of the chapter describes the conceptual review and second section is related with the review of journals and articles and the third section relating to the review of the thesis and the last part includes the review of preview of previous studies related to the share price behavior.

2.1 Conceptual Framework

This parts deal with the concept of securities, securities market with its classification and securities analysis or the theories of share price behavior.

2.1.1 Concept of Securities

Securities are the financial assets that form the part of the investors' wealth. They are the marketable interests represented by the certificate as a financial value. They include shares of corporate stock or mutual funds, bond issued by the corporations or governmental agencies, stock options or other options, other derivative securities, limited partnership units and various other formal investment instruments.

A corporation may conveniently issue each class of securities in the market. There is a class of investors for each class of securities because of their varying preferences of risk, income and control. There are various classes of buyers such as the stock holders, employers, customers and creditors of the corporation and traders in the capital market. The largest number of security buyers is that o individual investors who seek safety on their commitment and reasonable certainty of a moderate but regular income. The speculator seeks large profits, even though considerable risk may be involve in it.

In general, only a piece of paper represents the investor's right to certain prospects or property and the conditions under which she/he may exercise those rights. This piece of

paper, saving on evidence of property rights is called the security. It may be transferred to other investors and with it will go all its rights and conditions. Thus, everything from pawn ticket to a share of common stock is the security. Hence, the term of security can be understood as a legal representation of the right to receive prospective future benefits under conditions. The primary tasks of security analysis are to identify misplaced securities by determining these prospective future benefits, the conditions under which they will be received and the likelihood of such conditions.

Briefly, securities are the intangible assets, represented by legal claims to some future benefits or future cash. They give the holder an ownership interest in the assets of the company as well these have value in exchange. Securities are the term used interchangeably as financial assets or financial instruments.

2.1.2 Security Market

Securities markets are the board term, defined as a mechanism and the floor where financial assets are bought and sold. They facilitates trading, the demand for and availability of securities to be traded, and the willingness of buyers and sellers to reach agreements on sales. Securities markets discover the fair price for the securities, maintain the liquidity provision and minimize the trading cost.

The securities traded in the security market are share, bonds, debentures, bill, notes etc. Therefore, security market is a mechanism for raising required funds by selling and buying these securities. The development of the securities market enables the efficient transformation of savings from the hand of surplus spending units to those of deficit spending ones who can use them productively with lesser risk.

Security market interchangeably known as the integral part of the capital market is in fact basis of the economy. The most effective use of idle and surplus resources can be brought into pro-active purpose only by means of market mechanism. This indicates the structural network of the savers and user group of funds presumably garnered for the long term financing but the formation of network originates via conversion process of saving into

investment outlet. Thus the security market upholds the attempts particularly concerned with the collection and mobilization of savings.

"Saving meticulously diverted towards the regeneration activities, in essence of financialization and industrialization activities will result in the repercussion favorable to the economy as a whole" (*Khatiwada; 1998: 16*).

The security market can be defined as a mechanism for bringing together buyer and seller of financial assets to facilitate trading. Security market is classified into two: the market in which new securities are sold is called the primary market and the market in which the securities are resold is called secondary market. Brokers, dealers, and market makers create secondary market. Brokers bring buyer and seller together without themselves actually buying and selling does not take place; dealer sets 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; 1994: 457*).

(A) Primary Market

Primary market is the market place where instead of goods and services securities are sold to mobilize the savings for the establishment and operation of the businesses. It is also known as original sale of securities. But this is misleading to some extent. This market is also known as IPO market. In this market, the securities can be sold either at par or premium or at discount. But in case of Nepal, company Ordinance, 2005 has restricted to sell the securities in discount. It means the securities can be sold in premium only. In case of Nepal, NEPSE has issued license to the interested organizations to perform the job of issue managers by operating primary market. SEBO/N, in order to regulate the primary market has issued issue management guidelines.

Investment bankers generally hold the shares and paid the entrepreneurs and can be sold either through private placements or through secondary market or through primary market. The price of securities may differ even in the primary market. There is also no equal opportunity for all the investors. The investors who have contact with investment

bankers can get the shares. The investor's bankers generally provide three basic services. They are advice and counsel; underwriting and distribution.

(B) Secondary Market

Secondary market is the market place where second hand securities are traded. It means securities once purchased through primary market are traded in secondary market. Both the primary and secondary markets are complementary to each other. In the absence of one market another market cannot flourish. Secondary market comprises stock exchange and Over-The-Country market, popularly known as OTC market.

Unlisted securities are not traded in stock market. Exchanges generally do have their own listing rules. Stock exchanges are considered as an organized marker where as OTC market from the earlier days considered as unorganized market. But presently, this market is also as organized as the stock exchanges. Nepal does not have OTC market. NEPSE is only the secondary market in the country.

Secondary market is also known as economic barometer of the country of the country. This is because it reflects the economic policy of the country. All other things remain the same, the rising price of stock exchange shows the policy is favorable and the declining price indicates the opposite.

2.1.3 Theories of Stock Price Behavior

There are two approaches to explain share price fluctuations. Market efficiency is the basis for both approaches. Conventional approach has considered that market is inefficient, which includes technical analysis theory and fundamental analysis theory.

"Prior to the development of the efficient market theory, investors were generally divided in two group's fundamentalist and technician" (*Reilly; 1986: 347*).

Under efficient market theory there are three forms of efficient market theory hypothesis. Conventional theory assumes that the market is inefficient where as efficient market theory assume that the market is efficient i.e. market efficiency is the factor for both the approach.

2.1.3.1 Fundamental Analysis Theory

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

Fundamental analysis is also known as intrinsic value analysis. Its claims that at a point of time, an individual security has an intrinsic value which should be equal to the present value of the future cash flow from that security, discounted at appropriate risk related rate.

"The fundamentalist maintain that any point of time every stock has an intrinsic value which should be 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 set of anticipation. Price changes as anticipation changes which in turn change, as a result of new information.

"The value of common stock is simply the present value of all the future income which the owner of the share will receive" (*Francis; 1991: 398*).

Therefore, 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.

As with the most analysis, the goal is to derive a forecast and profit from future price movement. To forecast future stock prices, fundamental analysis combines economic, industry, and company analysis to derive a stock's current fair value and forecast future value. If fair value is not equal to the current stock price, fundamental analysis either believe that the stock is over or under valued and the market price will ultimately

gravitate towards fair value. Fundamentalist do not notice the advice of the random walkers and believe that markets are weak form efficient. By believing that prices do not accurately reflect all available information, fundamental analyst look to capitalize on perceived price discrepancies.

2.1.3.2 Technical Analysis Theory

The word "Technical" implies a study of the market itself and not of those external factors which are reflected in the market. The entire relevant factor's, whatever they may be, can be reduced to the volume of the stock exchange transactions and the level of share prices; or generally, to the sum of the statistical information produced by the market. In simple words, "Technical analysis" is a general term for a number of investing techniques that attempt to forecast securities prices by studying past prices and related statistics. The technician usually attempts to predict short term price movement and thus maker's recommendations concerning the timing of purchases and sales of either specific stock of group of stock or stock in general. It should be emphasized, however that a large part of the methodology of technical analysis lacks a strictly logical explanation.

"Technical analysis is based on the widely accepted premise that security prices are determined by the supply of and demand for securities. The tools of technical analysis are therefore designed to measure supply and demand" (*Francis; 1991:521-522*).

Many proofs of the ability of technical analysis to "beat the market" were offered, they believes that the forces of supply and demand are reflected in pattern of price and volume of trading. By examination of these patterns, he predicts whether prices are moving higher or lower, and even by how much. This reflects logical and emotional forces in the narrower sense.

In simplest form, technical analysis involves the study of stock market price in an attempt predict future price movements for the common stock of a particular stock and by identifying an emerging trend or pattern, the analyst hopes to predict accurately future price movement for the particular stock.

2.1.3.3 Efficient Market Theory

An efficient market is one where shares are correctly priced. In that market all investors have access to all relevant information and which news that affects stock prices is immediately available through market. "An efficient financial market exists when security prices reflect all available public information about the economic, about financial market's, and all about the specific company involved" (*Van Horne; 1998:51*).

An efficient market has a large numbers of rational and profit maximizes actively competing with each other and trying to predict future market values of individual securities. It is a market where current information is freely available to all. In an efficient market, competition leads to a situation where prices of securities reflect information based on both events that have already occurred and on expected events.

"An efficient capital market is one in which it is impossible to earn an abnormal return by trading on the basis of publicly available information" (*Brown; 1978:17*).

Efficient market theory contends that in free and perfect competitive market, stock price always reflects all the available information and adjust it according to the new information available.

(i) Random Walk Hypothesis

"The random walk hypothesis states that successive price changes are independent and hence produce a random walk in price levels" (*Kemp and Gavin; 1971:28*).

In its simplest form, it states that price changes cannot be predicted from historical changes in any meaningful manner.

"The history of past price movements and the history of stock trading volume do not contain any information that will allow investors to do consistently better than a buy-hold-strategy in managing a portfolio" (*Black; 1971:18*).

The RWH denies the existence of any kind of trends or patterns. Hence, past prices contain no meaningful information to predict future price behavior. “As Fama advices that the future path of the price level of a security is no more predictable than the path of a series of accumulated random numbers” (*Fama; 1965:36*).

This means that at a given point of time, the size and direction of the next price change is random. “The underlying theory of random walk in stock behavior statistically consist two main assumptions; (a) successive price changes are independent and (b) price changes conform to some probability distribution without specifying the particular shape or form of distribution” (*Fama; 1965:35*).

Independence is an important property of RWH. Proponents of random walk recognize that in general, strictly independence assumption does not exist in real world. So they argued that small degree of dependence does not refuse the practical usefulness of RWH as long as it may not be useful to predict above normal market returns. “The independence assumption of the random walk model is valid as long as knowledge of the past behavior of the series of price changes cannot be used to increase expected gains” (*Fama; 1965:56*).

“The weak form of efficient market says that the current price of stock fully reflect all the information continued in the historical sequences of prices. Therefore, there is no benefit as far as forecasting the future is concerned, in examine the historical sequences of prices. Therefore, this RWH is later popularly known as weak form of efficient market hypothesis” (*Fisher and Jordan; 1995:540*).

(ii) Efficient Market Hypothesis

“A market is said to be efficient if all currently available information is rapidly reflected in stock price” (*Fama; 1970:383-417*).

According to Fama, in an efficient market, share prices instantaneously and fully reflect all relevant available information, which is known as the EMH. The favorable

information results in an upward revision and unfavorable information push downward revision of security prices.

"The term market efficiency may be defined in the context of; (a) Allocation efficiency, (b) Operational efficiency and (c) Informational efficiency" (*Blake; 1998:243*).

The main assumption of market efficiency is;

- All investors have costless access to currently available information about the future.
- All investors are good analyst
- All investors pay close attention to market prices and adjust their holdings appropriately.

In such a market a securities price will be a good estimate of its investment value. Where investment value is a present of the securities future prospects, as estimated by well informed and capable analyst, and can be thought of as a securities fair value thus a efficient market is one in which every securities price equals its investment value at all times.

(A) Strong Efficient Market Hypothesis

Strong market is a market in which all information is reflected in security prices. The market prices reflects the true or intrinsic value of the share based on underlying future cash flows and no one can beat the market i.e. no one can earn abnormal profit in the market.

"Specially, no information that is available can be used to earn consistently superior investment return. It is well known that insiders have profited from inside information under this form. Those who acquire inside information act on it, buying and selling of stock. Their action affect the price of the stock, and the price quickly adjusts to reflect the inside information" (*Haugen; 1997: 645*).

This implies that not even security analyst and portfolio managers who have access to information more quickly than the general investing public are able to use this information to earn superior returns.

(B) Semi Strong Efficient Market Hypothesis

Semi strong efficient market is that market is that market in which all relevant publicly available information is fully reflected in security prices so that nothing will lead to trades can be gained profit from public resources. In other words, it says that current prices of stocks not only reflect all informational content of historical prices but also reflect all publicly available knowledge about the corporations being studied. Furthermore, the semi strong form says that efforts by analyst and investors acquire and analyze public information will not yield consistently superior returns the analyst.

"Under the semi strong form of efficient market hypothesis, publicly available information is presumed to be reflected in security price" (*Haugen; 1997: 643*).

In a free and a competitive market, price adjusts so that they equate supply and demand. When supply and demand does not change equilibrium price will emerged that represent an opinion. For securities, this equilibrium price should be intrinsic value. The equilibrium price will prevail until supply and demand will react and a new price will be formed. The faster the news is assimilated and the equilibrium price emerges, the more efficient is the market.

In order to be semi strong efficient, news must be completely disseminated to the market without delay. Prompt news dispersion is important if prices are to reflect all relevant information immediately.

(C) Weak Efficient Market Hypothesis

The weakly efficient market hypothesis says that historical price and volume data for securities contain no information that can be used to earn a trading profit above what could be attained with a naïve (it refers to the investment policy of randomly selecting

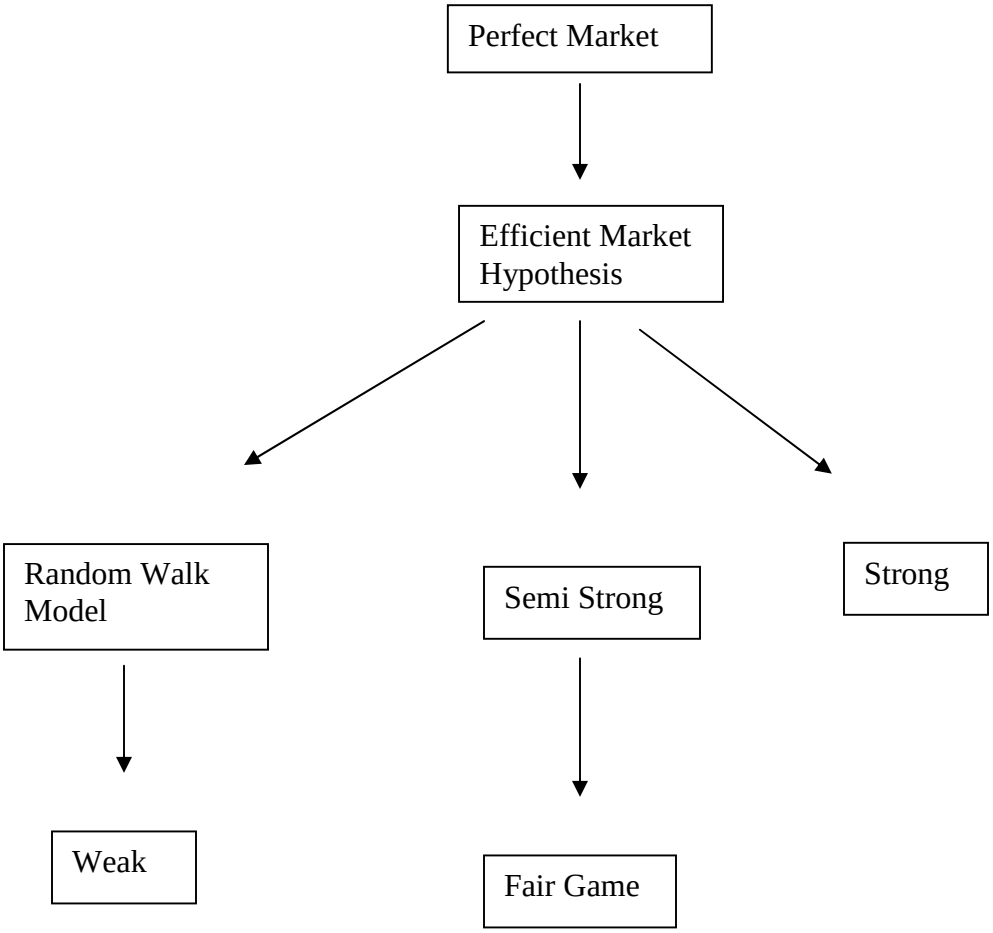
securities, buying them, and holding them over at least, one complete business cycle while reinvesting all dividends) buy and hold investment strategy.

"Under the weak form of the efficient market hypothesis, stock prices are assumed to reflect any information that may be contained in the past history of the stock price itself" (*Haugen; 1997: 641*).

This weak form of market efficiency is popularly known as the random walk theory. If this weak form of the efficient market is true, it is a direct repudiation of technical analysis.

Figure: 2.1

The Model of Share Price Behavior



(Source: Rutherford; 1994: 290)

The ability of the investors to pick winners and make excess return using new information. Thus the efficiency can be considered in term of the "fare game" concept. The fair game for investors is an outcome of market being efficient. If a market is efficient then investment is fair game. This fair game concept is useful in that it allows the different pieces of information, excess return can be made. The above model of share price behavior gives clear idea about the efficient market hypothesis and the random walk theory.

The above model help us to understand how market operates in practice and how closely it approx to theoretically perfect market. It is revealed from the above mentioned model that the original random walk theory is must closely related to but slightly stronger then, the weak form of the EMH. This is because the weak form implies that excess profit information whereas, the random walk theory whilst conforming the uselessness of studying past stock price movement. For example it requires successive share price change to be independent with zero serial correlation. The weak form of the EMH doesn't require any particular pattern of share price movement. So the random weak theory is stronger then the weak theory is stronger then the weak form of the EMH. In above model the perfect market has the most stringent requirement concerning market behavior. The attraction of the perfect market is that it is an assumption underlying the major security pricing model, such as the CAPM. However, the condition assumed in perfect market doesn't prevail in the real world.

2.2 Independent Studies

Timilsina, (2001), has conducted the study on "*Capital Market Development and Stock Price Behavior in Nepal*". The main objective of the studies was to find out the fair market prices of equities and test whether the present behavior of equity prices will remain stable. Coefficient of correlation between the EPS, corresponding market price on the one hand, and DPS and corresponding market price on the other are also computed. This helps to know which one EPS or DPS has a higher degree of relationship with the market price. Further, in order to test the degree of explanatory power of the two in

influencing the MPS, regression equations of market price on EPS as well as on DPS are drawn. Regression results are statistically tested to derive the conclusion.

Ojha, (2002), has conducted a study on "*Mini Research on Financial Performance and common Stock Pricing"*. The major findings of the research are: Nepalese stock market is in infant stage, dominant of banking sector is prevalent in the market in comparison to the other industries including finance, insurance and manufacturing companies. He also concluded that people have a misconception of about the issuance of the bonus share and right shares. Because it actually decreases the price and this makes them to increase their overall wealth. Further, he concluded that stock price in Nepal is determined more by other factors rather than the financial performance of the concerned company.

Pradhan, (2003), has carried out a *"Study on Stock Market Behavior in a Small Capital Market"*. The main purpose of the study was to address the stock market behavior in a small capital market. It attempts to examine relationship of market equity, market value to book value, price earning and dividend with liquidity, leverage, profitability, asset turnover, and interest coverage. The result from the study was that the larger stocks have larger price earning ratios, larger ratio of market value to book value of equity, lower liquidity, lower profitability and smaller dividend. Price earning ratios and dividend ratios are more variable for larger stocks. Larger stocks also have higher leverage, lower asset turnover, and lower interest coverage but these are more variable for smaller stocks. Stocks with larger market value to book value of equity have larger price earning ratios and lower dividend. These stocks also have lower liquidity, higher leverage, lower earnings, lower turnover and lower interest coverage. Stocks with higher price earnings ratios have lower liquidity, higher leverage, lower profitability, lower turnover and lower interest coverage.

Gurung, (December 2004), has conducted "*The study on Growth and Performance of Securities Market*". The variables such as number of listed and traded companies, their securities, number of transactions, trading turnovers, paid up value, market capitalization and NEPSE index. They are analyzed to know the growth trend and the performance of

Nepalese securities market. The study revealed the growth and performance of Nepalese securities market even after the introduction of new mechanism in 1993/1994 are not satisfactory though it is improving gradually.

Dorner, (2005), conducted "*A research by using a computer-based content analysis of qualitative data*". He took the data from a Swedish real estate firm during the period 1991-1996. The main objective was to examine the response of stock price to financial announcement. He found the positive correlation between the stock price and the following information categories: net assets value, occupancy rates, cash flow and overall capitalization rate. The main contribution of the study was to support the assumption that public financial information has an impact on stock market behavior.

Yao, Partington and Stevenson, (2006), conducted "A *Research on Run Length and the Predictability of Stock Price Reversals*." Survival analysis is used to estimate time-varying probabilities of price reversals using daily data for the Australian All Ordinaries Price Index. Lagged price changes lead to persistence (shortening) in a price run if they are of the same (opposite) sign as the run. An increase in the number of runs observed in the previous 30 days also increases the probability of price reversal. The predictive accuracy of the models is assessed using a probability scoring rule. Consistent with market efficiency, the estimated models are less accurate than the random walk model in predicting the length of individual price runs out-of-sample.

2.3 Review of Journals and Articles

This section discusses about the review of international journals and Nepalese Journals. The journals have been browsed through websites and the print media.

W. Faff and McKenzie, (2002), have conducted the study on "*The Impact of Stock Index Futures Trading on Daily Returns Seasonality: A Multicountry Study"*. In this article, the investigation was done on the impact of the introduction of stock index futures trading on the daily returns seasonality of the underlying index for seven national markets. It has been previously argued that the introduction of futures trading should lead to reduced

seasonality of mean returns, and generally our results support this conclusion. The impact of index futures introduction on return autocorrelations and volatility is also tested, and the evidence presented suggests that futures trading have no impact on the former, although a change in the seasonal for the latter was detected.

Ojha, (2002), had conducted a "*Mini Research on Financial Performances and Common* S*tock Pricing*". The major findings of the research are: Nepalese stock market is in infant stage, dominant of banking sector is prevalent in the market in comparison to the other industries including finance, insurance and manufacturing companies. He also concluded that people have a misconception of about the issuance of the bonus shares and right shares. Because it actually decreases the price and this makes them to increase their overall wealth. Further, he concluded that stock price in Nepal is determined more by other factors rather than the financial performance of the concerned company.

Pradhan, (2003), has carried out a "S*tudy on Stock Market Behavior in a Small Capital* M*arket*". The main purpose of the study was to address the stock market behavior in a small capital market. It attempts to examine relationship of market equity, market value to book value, price earning and dividend with liquidity, leverage, profitability, asset turnover, and interest coverage. The result from the study was that the larger stocks have larger price earning ratios, larger ratio of market value to book value of equity, lower liquidity, lower profitability and smaller dividend. Price earning ratios and dividend ratios are more variable for larger stocks. Larger stocks also have higher leverage, lower asset turnover, and lower interest coverage but these are more variable for smaller stocks. Stocks with larger market value to book value of equity have larger price earning ratios and lower dividend. These stocks also have lower liquidity, higher leverage, lower earnings, lower turnover and lower interest coverage. Stocks with higher price earnings ratios have lower liquidity, higher leverage, lower profitability, lower turnover and lower interest coverage.

Fuss, (2005), "*Financial Liberalization and Stock Price Behavior in Asian Emerging Market: Economic Change and Restructuring*". This paper exhibits tests of the random

walk hypothesis and market efficiency for seven Asian emerging markets as a result of the influence of financial market integration. Random walk properties of equity prices influence the return dynamic and determine the trade strategies of investors. To examine the stochastic properties of local index returns and to test the hypothesis that stock market prices follow a random walk, the single variance ratio tests of Lo and McKinley, as well as the multiple variance ratio test of Chow and Denning are employed. The multiple statistical comparisons of variance ratios is based on the Student zed Maximum Modulus distribution with control of the joint-test's size. The weak-form market efficiency is also tested directly, using a nonparametric runs test. These tests are particularly useful for investigating stock prices the returns of which are frequently not distributed normally. Documented evidence shows that, from the perspective of local investors, weekly stock prices in major Asian emerging markets do not follow a random walk in the pre-liberalization period. However, in the post-liberalization period the weak-form efficiency hypothesis is generally adopted at the 5% level except for the smaller stock markets of Indonesia and Thailand. These empirical findings suggest that financial integration affects the return predictability in such a way that domestic investors might not be able to develop trading strategies allowing them to earn abnormal returns.

Rasheed, (2007), studied on "*Stock Market Prediction with Multiple Classifiers is the* S*tock Market Prediction is Attractive and Challenging*". According to the efficient market hypothesis, stock prices should follow a random walk pattern and thus should not be predictable with more than about 50 percent accuracy. In this paper, we investigated the predictability of the Dow Jones Industrial Average index to show that not all periods are equally random. We used the Hurst exponent to select a period with great predictability. Parameters for generating training patterns were determined heuristically by auto-mutual information and false nearest neighbor methods. Some inductive machine-learning classifiers—artificial neural network, decision tree, and *k*-nearest neighbor were then trained with these generated patterns. Through appropriate collaboration of these models, we achieved prediction accuracy up to 65 percent.

Spada, Farmer and Lillo, (2008), "*Investigate the Random Walk of Prices*" by developing a simple model relating the properties of the signs and absolute values of individual price

changes to the diffusion rate (volatility) of prices at longer time scales. We show that this benchmark model is unable to reproduce the diffusion properties of real prices. Specifically, we find that for one hour intervals this model consistently over-predicts the volatility of real price series by about 70%, and that this effect becomes stronger as the length of the intervals increases. By selectively shuffling some components of the data while preserving others we are able to show that this discrepancy is caused by a subtle but long-range non-contemporaneous correlation between the signs and sizes of individual returns. We conjecture that this is related to the long-memory of transaction signs and the need to enforce market efficiency.

2.4 Review of Thesis

Poudel (2001), studied on "*Share Price Movement of Joint Venture Commercial Banks*"

Objective of the Study

- To find the market efficiency hypothesis and
- The factors that affect the share market and
- To know whether the successive price affects the share price or not.

Analysis and Findings of the study

By using various financial and statistical tools like standard deviation, correlation, beta, and t-test concluded that Nepal stock exchange operates in a weak form of efficient market hypothesis, indicating that the market price moves randomly. The findings show that market value per share does not accommodate all the available historical information. The shares of joint venture commercial banks emerge as a blue chip in the Nepalese stock market. The beta coefficient, which measures the risky ness of individual security in relative term, suggests that none of the share of eight sampled banks were risky.

Poudel (2002), carried study on "*Share Price Behavior of Joint Venture Banks in Nepal*".

Objectives of the Study

The prime objective of the study was:

- To analyze the price movement of joint venture bank through RWH model
- To know the market efficiency of the stock listed in the NEPSE index.

Analysis and Findings

He concluded that the growth rate analysis as a stand-alone may not be adequate for the analysis of share prices behavior and may not represent the banks performance in the secondary market. The ordinary least square equation of the book value per share on market value per share reveals that the independent variable does not fully explain the dependent variable. Nepal Stock Exchange operated in the weak form of EMH, including the market price move randomly. The market value per share does not accommodate all the available historical information. Having good record of accomplishment of the financial position, the market potential investors buy the shares of the joint venture commercial banks. Thus the shares of these banks emerge as a blue chip in the Nepalese Stock Market (NSM).

Shrestha (2003), conducted a study on "*Behavior of stock market price*".

Objective of the Study

- To examine and analyze the fluctuation of security price in the stock market,
- To examine the efficiency in the stock market in Nepal.
- To know the investors view regarding the decision in the stock investment,
- To analyze the NEPSE index
- To study and examine the factors that impact in share price with the help of NEPSE index.

Analysis and Findings

In her study she finds that there is significant difference between the market price of the stock of banking sector and insurance sector. She further adds in her study that there is gap between theory and practice of investment in Nepal security market. It is very useful

if analyze properly done for the development of stock market. From the research analysis she has given some recommendations which are listed below. The stock exchange should carry out periodic research and analysis and make public the findings which they believed would help them to make better awareness about the stocks and its market importance in the role of market players in the stock.

Gautam (2004), carried a study on "*Stock Market Behavior*".

Objectives of the Study

- To analyze the stock price behavior of the commercial bank in NEPSE;
- To find the variable factor that affects the share price and
- To outline the possible implication for the betterment of the stock price.

Analysis and Findings

The study concluded that political instability and other laws related issues are the prominent factors for the underdevelopment of security market in Nepal. She further concluded that the stockbrokers and the stock market are not being much active to create investment environment in the stock market. Information deficiency in the capital market is one of the reasons for determination of share price by excessive speculation. The available information is of low quality and people have very little knowledge of the trading procedure and price formation mechanism in the NEPSE. Lack of effective laws and implication of the existing laws are the contributing factors for the less development of capital market. She also highlighted some of the major problems experienced by stock market and the poor regulatory controls and supervisions by SEBON & NEPSE.

Neupane (2008), "S*tock Price Behavior of Commercial Bank in Nepal"*

Objective of the Study

- To analyze the stock price behavior of commercial bank in Nepal
- To analyze the behavior of those commercial banks index and NEPSE Index
- To determine whether the present Nepalese stock market is efficient in pricing shares.

- To outline the possible implications and also recommend for the betterment of stock market

Analysis and Findings of the Study

The sampled stock had the mild serial dependence; it is hardly used for predicting their price due to this it is enough to increase their expected profit to some extend. The selected companies do not follow the random walk hypothesis. The historical information is reflected in the security prices and supports the technical analysis of the study. The commercial bank stock price is in the upward moving trends. The series of commercial bank and NEPSE Index had the same volatility and the NEPSE index is dependant up to the certain level of dependency and the information of past price changes have little role to predict changes for longer days.

Prajapate (2009), studied on "*A Stock Market Behavior of Listed Companies in Nepal"*.

Objectives of the Study

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

Analysis and Findings

The analysis of the study concludes is as: The number of transactions traded amount and market capitalization suggests that the bank and finance companies as compared to other are in better position. Market performance of NEPSE Index shows the decreasing trend and no any sign of improvement in NEPSE Index. The manufacturing and processing and financing sector is less risky according to standard deviation. If investors are ready to assume more risky they might obtain a higher expected monetary value. So investors are encouraged to invest in manufacturing and processing and finance companies too. Most of the companies are not following the capital market as an alternative source of fund raising up. 142 companies are only listed in NEPSE up to 2007/08. It proves that the size

of Nepalese stock market is very small. The numbers of listed companies are in increasing trend. The number of companies in the initial year 2001/02 it was 96 and from 2001/02to 2007/08 it was 142. A listed company was increasing by 46 companies. The annual turnover is fluctuating. It is more than double in 2006/07 but market sharp incline in 2007/08 and reaching turnover Rs.21987.784The market capitalization is in erratic trend in each group in each year. The proportion of market capitalization of commercial bank is the highest among the eight sectors. In the term of traded share quantity commercial bank captured the largest chunk for the total share trading. Trading sector has lowest share traded quantity comparison to other sector.

Bhandari (2009), had conducted a study on *"Trends of Stock Market Price in Nepalese Securities Market"*

Objective of the study

- To find out the trend of Nepalese stock market and economic growth of securities market.
- To study the volume of share traded in NEPSE and stock market situation
- To analyze the impact of the signaling factors on the stock market price with the help of NEPSE Index.
- Study the legal provisions relating to protection of investors interest
- To analyzed the investors view regarding the investment in Nepalese stock market
- To identify the trend and development of stock market and economy growth and to asses the relationship of stock market indicators with different macro economic indicators

Analysis and findings of the Study

From the study the price of a stock was volatile i.e. share price of banking sectors only is in increasing trend rather than other sectors and market seems loosing confidence of investors. The corporate sectors are still reluctant on disseminating information timely. The implication is that the benefits of a well functioning stock market are not being realized in the economy. The studies is based on the random selected sampled stocks and

shown that price of the stocks are mostly influenced by different related factors but some cases it is found that the facts deal there were not significant. Some of the findings indicate that the sampled companies during the fiscal year 2001/02 to 2006/07 has shows the fluctuation in the market price. The market price per share and leverage of the companies shows significant results. It means that the rise or fall in the financial variable fall or rise in the market price or vice versa. The analysis of expected return and required rate of return of companies have greater required return than expected rate of return. So the company's stock price is over priced. The beta coefficient indicates lower risk. The correlation coefficient analysis tests show both positive and negative results with relation to the financial indicators.

Research Gap

The studies done on the foreign context is not applicable in our underdeveloped country Nepal. The stock market is still in the stage of development process. The economic condition of Nepal and abroad doesn't comes in the closeness in any content. With frequent bands, hadtals, chaka jam and unstable government had lead to disaster in the economic development of the nation. With the existing of one and only stock exchange (NEPSE) in Nepal it had contributed to the development of secondary market in the nation. Through its establishment it had a system of cry out system but gradually with its development it had come to the automatic trading systems.

There had been no research done in together form of efficient market hypothesis and the factors affecting the market share price as MPS, EPS, DPS, ROE and NWPS in a combined form. The research relating to efficient market hypothesis will analyze the market on the basis of Random walk theory which will analyze the successive price change with the current trend of the stock price in the market. And the factors as MPS, EPS, DPS, ROE and NWPS and its correlation with MPS will determine the factors that are responsible to affect the price of the share in the NEPSE.

Since the studies done in developed security markets may not be entirely be relevant in the security markets of underdeveloped countries like Nepal. Their applicability in the stock market is not possible due to existence of different market economy. Therefore this research will be necessary to bridge the gap between the developed nation and the underdeveloped nation in the subject matter of stock price movement.

CHAPTER - III
RESEARCH METHODOLOGY

Research means to search or study about a phenomenon. Generally it is an effort to search new fact, knowledge and principle in scientific ways. Research may be defined as the systematic and objective analysis and recording of controlled observation that may lead to the development of generalization principles or theories resulting in prediction and possibility ultimate control of events. Research is the process of a systematic in depth study or search of any particular topic, subject or area of investigation backed by the collection, complication, presentation and interpretation of relevant details or data. So that research methodology is a systematic way of conducting the research in an effective and practical so that it can explain how the research is done.

This chapter refers to the research design, sample selection and size, data collection procedure, data processing, definition of variables and methodology for the analysis of data. This research tries to perform a well design descriptive and analytical research in a very clear way using both financial and statistical tools.

3.1 Research Design

The research design refers to the entire process of planning and carrying out a research study. It is the conceptual structure within which research is conducted. In other words, a plan of study or blue prints for study is called a research design or research strategy. This study is carried out to get the empirical result of the stock price behavior.

To conduct the study, analytical and descriptive research approach is adopted for the historical data and information. Descriptive design is adopted to analyze the behavior of daily stock price behavior of the sampled banks, NEPSE index and commercial bank index. At the same time, analytical design is applied to identify the independence and the randomness of the successive stock prices. Further, it interprets the empirical results.

3.2 Population and Sample

The total variable is simply called population. There are 26 commercial banks listed in NEPSE. For this purpose of the study, four out of the total listed commercial banks are taken which is called sample of the study. The process of selecting the sample out of population is called sampling. The sample of this study is four commercial banks, which are as follows:

1. Bank of Katmandu ltd
2. Everest Bank ltd
3. Himalayan Bank ltd
4. Nepal Investment Bank ltd

3.3 Source and Collection of Data

This research is fully based on secondary data. However, primary data are also necessary for the support of the study. The required data were collected from annual trading report of NEPSE, National dailies: Kantipur, The Himalayan Times, Gorkhaptra and The Rising Nepal and also the required data were downloaded from different website and official site of NEPSE. Previous studies and reports (Master's Dissertation), published and unpublished official records (concerned bank manual report & NEPSE annual reports) are also of great help while doing the research work.

3.4 Data Analysis Tools

In this study, Statistical as well as financial tools are used to analyze the data. Statistical tools are to function as a tool in designing research, analyzing its data and drawing conclusion. Statistics is the science, which deals with classification and tabulation of numerical facts as the basis of explanation description and comparison of phenomenon. The various statistical as well as financial tools are presented below:

3.4.1 Statistical Tools

- **Arithmetic Mean**

The most common method, generally referred to the average is the arithmetic mean. In descriptive statistics, the arithmetic mean is the average of set of values or distribution.

The most popular and widely used measure of representing the entire data by one value is what most laymen call an average and what the statisticians call the Arithmetic mean (Gupta, 2000) for a data set, the mean is just the sum of all the observations divided by the number of observations.

Symbolically,

$$\overline{X}\ X\frac{X}{N}$$

Where,

$\overline{X}$ = the population means variable 'X'

X = sum of all the observed value of 'X' variable

N = the total number of observations

) Standard Deviation

The standard deviation (SD) of a probability distribution, random variable or population or multiset of values is defined as the square root of the variance. The standard deviation measures the absolute dispersion, the greater the standard deviation the greater will be the magnitude of the deviation of the deviation means a high degree of uniformity of the observation as well as homogeneity of a series and a large standard deviation means just the opposite. Standard deviation is extremely useful in judging the representative ness of the means (Gupta, 2000).

Symbolically,

$$\pm = \sqrt{\frac{(X\ Z\overline{X})^2}{N}}$$

Where,

± = Standard deviation

X = Observation

$\overline{X}$ = population mean for observed value of 'X'

N = total number of observations

= sum of all values of $(X-«)^2$

⁾ Coefficient of Variation

The coefficient of variation (CV) is the measure of dispersion of a probability distribution in probability theory and statistics. It is defined as the ratio of the SD to mean. It is dimensionless number that allows comparison of the variation of populations that have significantly different mean values. The CV of the exponential distribution is often more important than the normal distribution. The CV of an exponential distribution is equal to its mean, so its CV is equal to 1. Distribution with CV<1 are considered low-variance, while those with CV>1 are considered high-variance.

Symbolically,

$$CV = \frac{\sigma}{\bar{X}} \mid 100\%$$

Where,

$\pm$ =SD of population

$\bar{X}$ =Population Mean

⁾ Regression

Analysis means the estimation or prediction of the unknown values of one variable. It is a mathematical measure of the average relationship between two or more variables in terms of the original units of data. In regression analysis, there are two types of variables. The variable whose value is influenced or is to be predicted is called dependent variable and the variable, which influences the values or is used for prediction is called the independent variable.

Simple Regression

The line of regression of X on Y is the line which gives the best estimates of X for any given amount of Y. the simple regression can be expressed as:

Y (dependent variable) = a (constant) + $b_1 \times X_1$ (independent variable) + E (error)

Where, b_1=Beta

Multiple Regressions

The multiple regressions can be expressed as:

Y (dependent variable) = a (constant) + b_1x_1 + b_2x_2 + b_3x_3 + E (error)

Where, X_1, X_2 and X_3 are independent variables

) Coefficient of Regression

The coefficient 'b' which is the slope of regression of Y on X is called the coefficient of regression of Y on X. it represents the increment in the value of the dependent variable Y for a unit change in the value of the independent variable X. in other words, it represents the rate of change. The convenient way to calculate the value of 'b' is as follows:

Symbolically,

$$'b'X\frac{n \quad xy\,Z \quad x \quad y}{n \quad x^2\,Z(\quad x)^2}$$

Where,

x = sum of all the observed value of 'X' variable

y = sum of all the observed value of 'X' variable

x y = sum of all the observed value of 'X' variable and 'Y' variable

(x)^2 = sum of the square of observed value of 'X' variable

n = number of the sampled variable.

) Standard Error of Estimates

A measure of the estimates so obtained from regression equation is provided by standard error (S.E.E) of the estimates. Standard error is a word analogous to standard deviation,

which is a measure of dispersion of observation about the mean of the distribution and gives us a measure of the scatter ness of the observations about the line of regression.

3.4.2 Test Model

The daily closing price of each stock has been selected for analysis of share price behavior. The actual tests of autocorrelation were not performed on the daily prices themselves but on the first differences of their natural logarithms. The variable of this study is:

$$R_{j,t}\, t\, X Ln \frac{P_{i,j}}{P_{j,(tZ1)}}$$

$$X Ln(P_{j,t})\, Z Ln[P_{j(tZ1)}] \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.1$$

Where;

$R_{j.t}$ = Price Changes in natural logarithm of stock j

$P_{j,t}$ = Price of stock j. observed at the end of day t.

$P_{j(tZ1)}$ =Price of Stock j observed at the end of day t-1

j =1, 2, 3, 4…n

t =1, 2, 3, 4…n

L_n = natural log

It is preferable to analyze the data on the difference of lag prices rather than the raw prices. Because the changes in the log prices is the yield with continuous compounding from holding the security for that day (t) and the variability of the simple price changes for the given stock is probably the function of the price level.

There are three main reasons for using changes in log price rather than simple price changes. First, the changes in the log price are the yield, with continuous compounding, from holding the security for that day. Second, it has shown that the variability of simple price changes for a given stock is an increasing function of the price level of the stock. Third, for changes less stock (±) 15 percent the changes in log price is very close to the percentage price changes. Similarly, it is suggested that it is wiser to analyze changes of logarithms or square root of level. However, the other non-parametric test i.e. run tests have been performed on the arithmetic first differences.

3.4.3 Test Methodology

The method of analysis employed in this study includes the use of:

- Autocorrelation
- Run Tests

- **Serial Correlation/ Autocorrelation**

Serial correlation is one of the statistical tools used to measure dependence of successive number in series. It has been widely used to measure the possible dependence in successive share price change as well. In general, serial correlation coefficient measures the relationship between the values of a random variable in time (t) and its value of the (k) period earlier. It indicates whether the price change at time (t) is influenced by the price changes occurring (k) period earlier.

For the given time series, the auto correlation coefficient for lag k is;

$$r_k \; X \frac{\text{Covariance}(e_t e_{tZ1})}{\text{Variance}(e_t)} \ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

$$= \frac{\sum_{t X1}^{n} e_t . e_{t Z1}}{\sum_{t X1}^{n} e_t^{\,2}}$$

[…variance($e_t . e_{tZ1}$)]

Where,

r_k =Auto correlation coefficient

e_t =Price changes in natural logarithm of given stock from the end of day (t Z1) to the end of day (t)

k=lagged variables (1, 2, 3……..n)

t= time variable (1, 2, 3……n)

The result of autocorrelation always ranges between +1 and -1. If the computed coefficient of autocorrelation is near to zero, then it is an indication of independence, i.e. today's price is an unbiased outcome of yesterday's price. But if the computed value departs significantly from zero, in positive and negative direction causes dependence among the time series data accordingly either direction.

If the distribution of e_t has finite variance, then in very large samples the standard error of r_t is given by;

$$S.E(r_k) X \sqrt{\frac{1}{(N Z k)}} \quad \ldots\ldots\ldots\ldots\ldots\ldots 3.3$$

Where,

$S.E.(r_k)$ = Standard Error of Auto correlation coefficient

N=Sample size

k= lag period

J The Run Test Analysis

Statistical tests based on the theory of runs ignore absolute values in the time series and observe only their signs. That is, they are essentially concerned with the direction of changes in a given time series. Thus for the present purpose, a run can be defined as a

sequence of price changes of the same sign preceded and followed by price change of different sign. In a given share price change series, there are three types of price change in a series i.e. positive, negative, and no change, thus implying three types of runs. Therefore, a plus run of length I may be defined as the sequence of positive price changes preceded and succeeded by either negative or positive or zero price change (Fama, 1965). Likewise, a run of length I of minus and no-change sign can be defined as a sequence of I consecutive price changes of the same sign followed and preceded by negative and no-change sign of price changes. A run test is performed by comparing the actual number of runs with the expected number of runs on the assumptions that price changes are independent. If the actual (observed) runs are not significantly different from the expected number of runs then it is concluded that the successive price changes are independent. In contrast, if these differences were significant, the price changes would be dependent. Run test is the non- parametric test that ignores the magnitude of price changes and observes only direction of changes in a given time series. The difference between the expected and actual number of runs will be analyzed by the total number of runs.

J Total Number of Runs

Under the hypothesis of independence and on assumption that sample proportions of positive, negative and no-change are unbiased estimate of the population proportions, the population proportions, the expected number of runs of all types can be computed as follows:

Symbolically,

$$M\ X\ \frac{N(N\ \Gamma 1)\ Z^{3}\ n_i^{2}}{N} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.4$$

Where,

M : Expected number of runs.

N : Total number of runs.

n_i : Number of price changes of each sign.

The standard error of M is;

$$\sigma_m \; X \; \frac{\overset{3}{\underset{iX1}{n_i^{\,2}}} \quad \overset{3}{\underset{iX1}{n_i^{\,2}}} \; \Gamma \, N(N \, \Gamma 1) \quad Z2N \overset{3}{\underset{iX1}{n_i^{\,3}}}}{N^2(N \, Z1)} \qquad \text{.....3.5}$$

For large N, the sampling distribution of the expected number of runs of all types is approximately normal with mean M and standard error (σm) as given by (3.4) and (3.5) respectively. Thus, the difference between the actual number of runs and the expected number of runs can be expressed by means of the usual standardized variable.

Symbolically,

$$Z \; X \frac{R \, \Gamma \frac{1}{2} \quad ZM}{\sigma_m} \qquad \text{.....3.6}$$

Where,

R =Total actual no of runs of all signs.

$\frac{1}{2}$ =Numerator of a discontinuity adjustment.

M =Mean (Expected number of runs).

$\pm_m$ =Standard error of sampling distribution of runs

For large sample, Z will be approximately normal with mean 0 and Variance 1. Therefore, for testing significance of the difference between actual and expected number of runs, the test statistic employed would be standardized to normal variate Z. the null hypothesis (i.e., randomness hypothesis) will be rejected or accepted at 5 percent and 1

percent level of significance in favor of (or against) the alternative hypothesis (non-random hypothesis) depending on observed values of Z. In addition, for comparison of actual and expected number of runs, the percentage of K will be employed as;
Symbolically,

$$K= \frac{(R\ ZM)}{M} \ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.7$$

Here, the term K, is defined as proportionate difference between actual and expected number of runs.

3.4.4 Hypothesis of the Study

The following hypothesis is set up in this study;

H_0 **:** The successive or lagged price changes are independent.

H_1 **:** The successive or lagged price changes are dependent.

Where,

H_0 =Null hypothesis

H_1 =Alternative hypothesis

Decision:

Decision can be made by comparing the calculated vale of Z with tabulated value of Z. if the calculated value of Z is less than equal to tabulated value of Z, it is not significant and H_0 is accepted. Otherwise, it is rejected.

3.4.5 Financial tools

The analysis of the study is based on following financial tools.

- **Market price per share(MPS)**

Market price per share is the current price at which the stock is traded. It is calculated dividing the total market capitalization by the number of share outstanding.

Mathematically,

MPS= (Total market capitalization)/ (Number of share outstanding)

- **Earnings per share(EPS)**

The amount earned during the accounting period on each outstanding share of common stock. It is calculated by dividing the period's total earnings available for the firm's common stockholders by the number of common stock outstanding.

Mathematically,

EPS= (Earning available to common stockholders)/ (Number of common stock outstanding)

- **Dividend per share(DPS)**

The percentage of earnings the firm pays in cash to its shareholders is known as dividend. And dividend per share is the rupee earning distributed to common stock holders per share held by them. It is computed dividing the total dividend distributed to equity shareholders by the total numbers of equity shares outstanding.

Mathematically,

DPS= (Total distributed dividend to equity shareholders)/ (Total number of equity share outstanding)

- **Net worth per share(NWPS)**

NWPS is calculated to know the actual worthiness of the shares. It gives the calculation regarding the actual amount to be invested in the price of the share. Total shareholders equity is also called net worth, it is calculated through ,ordinary share capital+ preference share capital+ reserve+ profit and loss a/c of retained earnings-debit balance of p/l a/c-preliminary expenses-discount and commission on issue of shares and debentures.

Mathematically,

NWPS= (Shareholders equity)/ (Number of shares issued)

- **Return on equity(ROE)**

The return on equity measures the book return to the owners of the firm. It is a "bottom line ratio in that sense.

Mathematically,

ROE= (Net profit after tax)/ (NET worth per share)

3.5 Limitation of the Methodology

Like other studies, this study has no exception regarding the limitations. Random sampling method itself is not free from bias. Only equity shares of commercial banks are studied, though NEPSE has listed others company too. This study has covered the short period due to time and economy constraints.

The frequent bands and hartals had led difficulty in data collection process. Political instability and whims has influenced the trading days of the stock market. Benefits of the study are limited to those who carry out the research work smoothly.

CHAPTER – IV

DATA PRESENTATION AND ANALYSIS

This chapter represents the graphs of stock price behavior and volatility analysis of sample stocks. Similarly, it presents the comparative analysis of the commercial banks Index and the NEPSE index based on the basic points and other aspect displays the graph of daily co-movement of commercial banks index and the NEPSE Index. Likewise, it imparts the details of serial correlation analysis and runs test analysis; with the calculation of regression and correlation analysis and the various financial indicators.

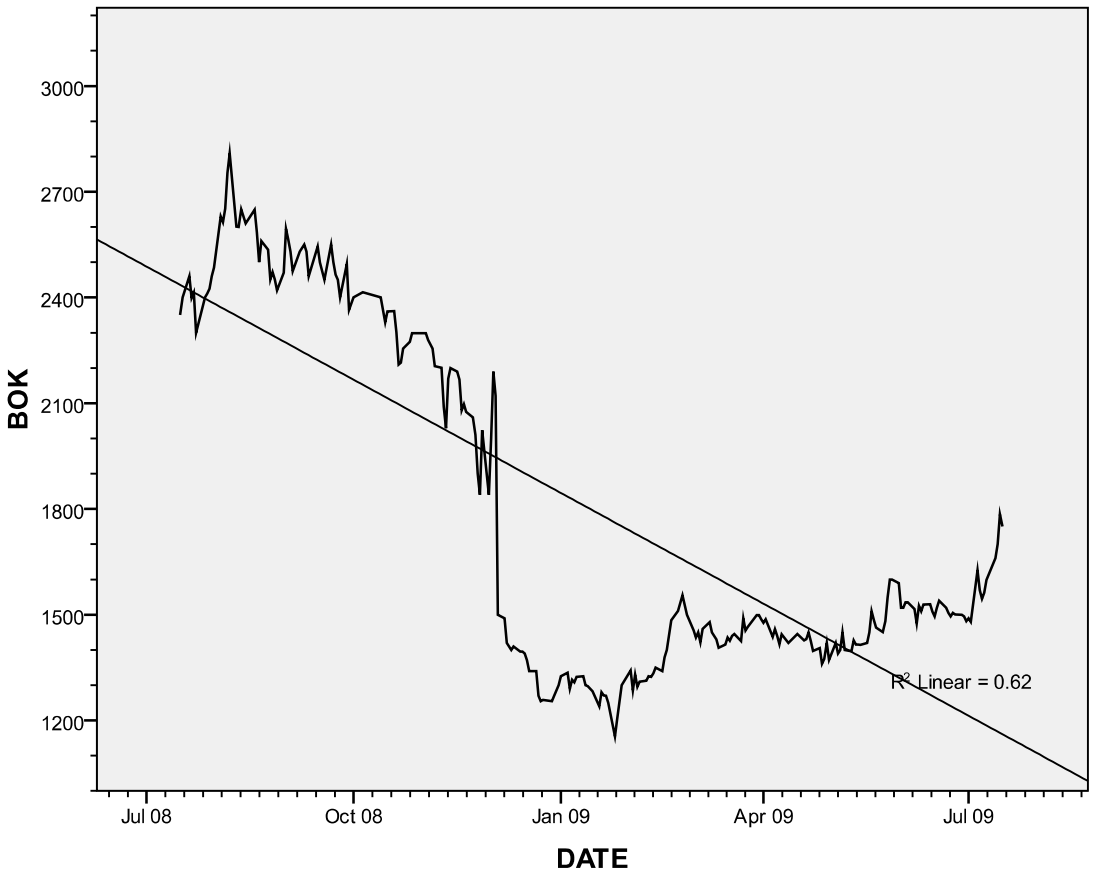
4.1 Data Presentation and Analysis

4.1.1 Stock price behavior of sample commercial banks

This part presents the individual graphs of samples commercial banks. Graphs clearly exhibit the series of stock price behavior based on the previously daily closing price of the stock. The series represents the daily data covering from July 17 2008 to July 17 2009.

Figure 4.1

Daily stock price behavior of BOK

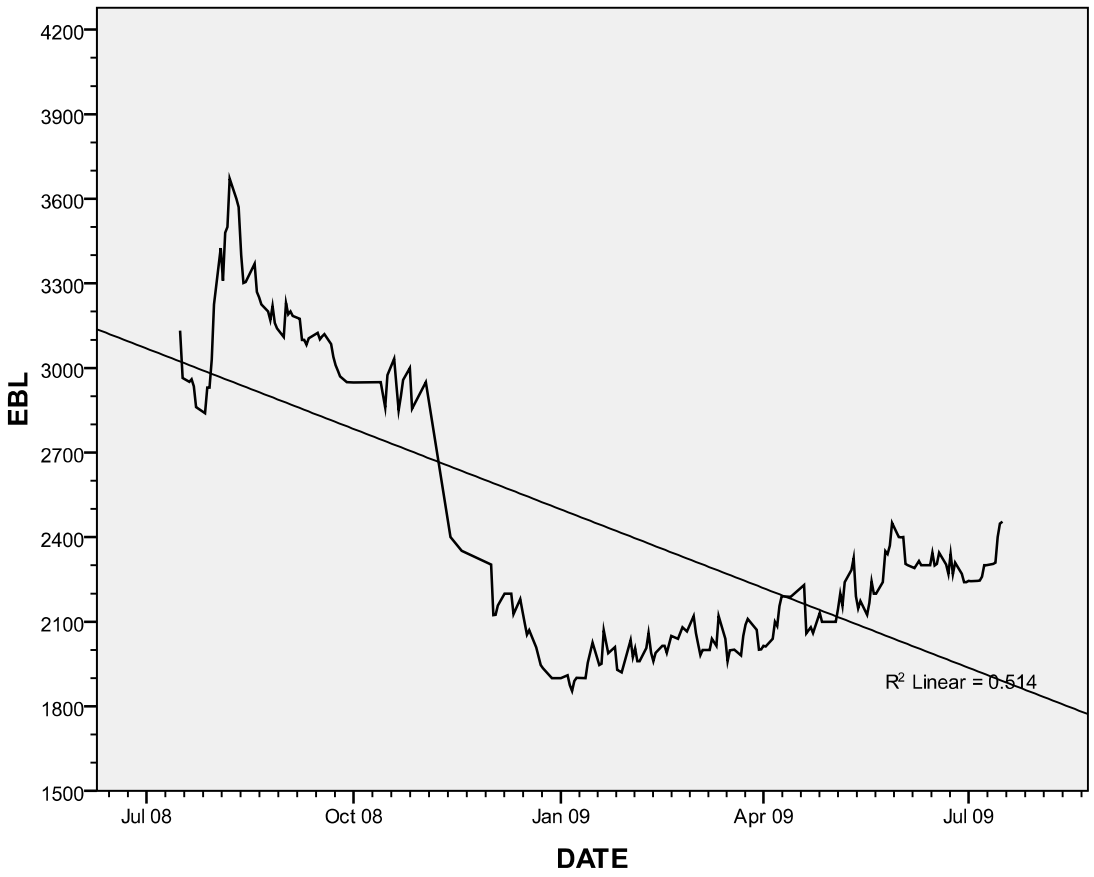


(Source: Appendix 1)

Figure 4.1 exhibits the daily stock price behavior of the Bank of Kathmandu. The maximum price is on the date of 08/07/08 as Rs.2809 and the minimum price is on date of 01/25/09 as Rs.1155.As per the graph the price trend movement is coverage of a period of one year. As being started from the middle of the month of July there has been a slightly increase in the price then there was a little fall in the price then again there was an increase at to the utmost level and afterwards there has been in the price and had been increase and decrease in the random form. Between the periods from January to April, the price is at of the lowest level and after the month there has been a positive increment in the price of the stock.

Figure 4.2

Daily stock price Behavior of EBL

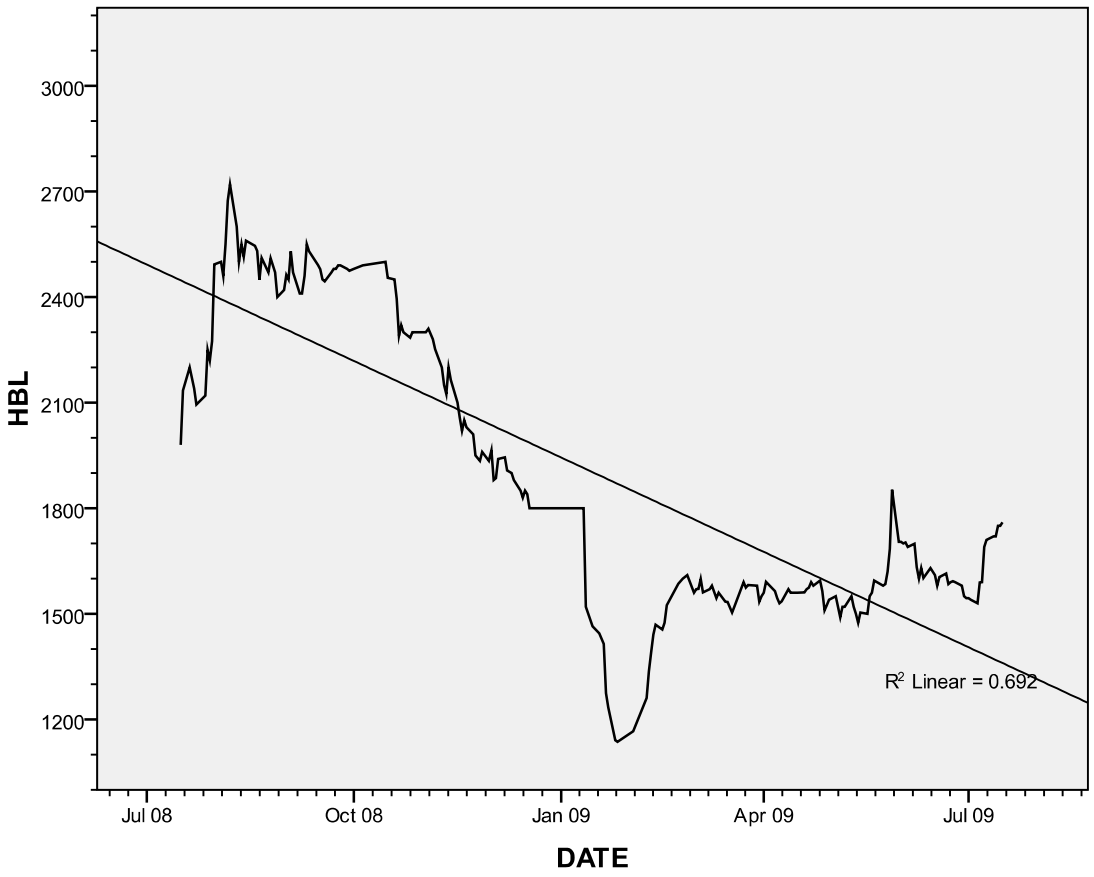


(Source: Appendix 1)

The figure 4.2 represents the daily stock price behavior of Everest Bank ltd. The maximum price is Rs.3672 as on date 08/07/08 and the minimum price is on date 01/06/09 as Rs.1855. As seen in the graph the price is at maximum between the month of July and October and after that there had been in the phase of the decreasing trend afterwards throughout the period. After the month of April there has been seen an improving trends in the price.

Figure 4.3

Daily Stock Price Behavior of HBL

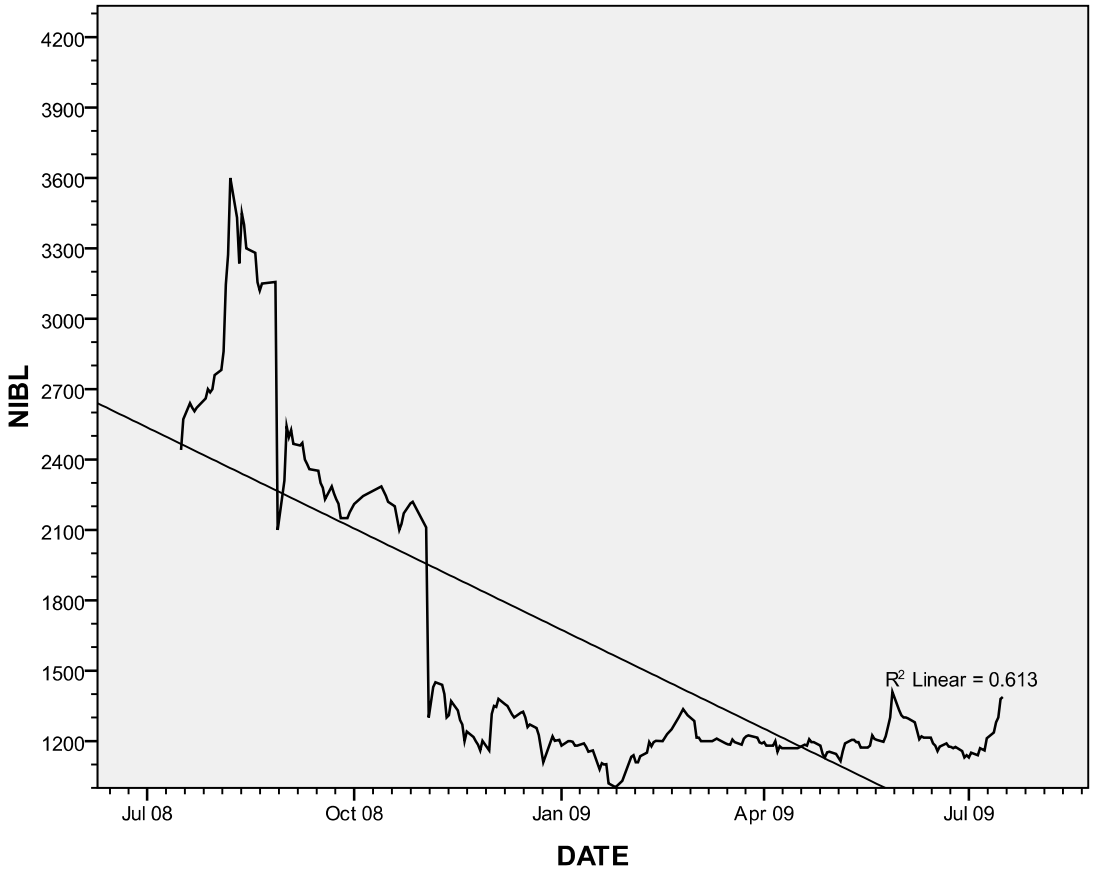


(Source: Appendix 1)

The figure 4.3 represents the daily price behavior of Himalayan bank ltd. The maximum is 2720 as on date 08/07/08 and the minimum price is 1137 as on date 01/26/09. The starting phase shows an increasing trend in the price and thereafter shows a decreasing trend in the price. The lowest price is between the month of January to April and between the price of 1000 to 1200 and after that there has been in the form of increasing trend and again in the decreasing trend and again increasing trend.

Figure 4.4

Daily Stock Price Behavior of NIBL



(Source: Appendix 1)

The figure 4.4 represents the daily price behavior of Nepal Investment Bank ltd. The maximum price is Rs.3599 as on date 08/07/08 and the minimum price is Rs.1003 as on date 01/25/09. The stock price of NIBL shows the amount up to the level between 3600 to 3800 and after thereafter there has been in the form of a decreasing trend and reached the lowest point up to the 1000 level in the month between January and April and thereafter in the increasing trend and then again in the decreasing trend and again in the increasing form.

4.1.2 Volatility of daily stock price

To gain the actual knowledge of the stock, it is important to know the movement of stock and due to this the volatility of stock comes to its analysis. The volatility is calculated through the calculation of arithmetic mean, standard deviation and coefficient of variance. The arithmetic mean calculate the average set of values of distribution,

Table 4.1

Computation of stock volatility

Banks	**N***	**Mean**	**Variance**	**Std.Deviation**	**C.V (%)**
BOK	234	1778.42	230400	480	26.99
EBL	209	2424.65	232709.76	482.4	19.9
HBL	205	1890.57	166553.77	408.11	21.59
NIBL	226	1582.1	416760.62	645.57	40.8

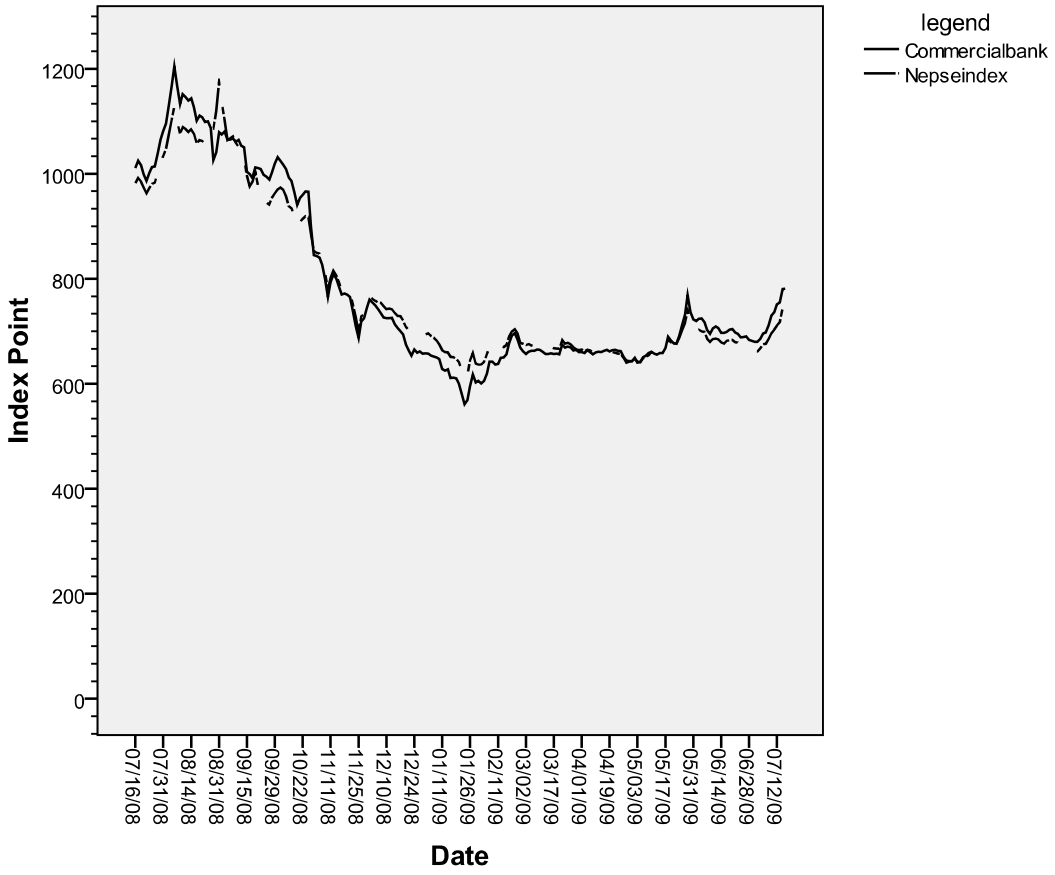
(Source: appendix 4 (Note: N means total number of observation))

The mean shows the average value for each stock price of the sampled banks. The highest average value is of EBL (2424.65) and then of HBL (1890.57) and then of BOK (1778.42) and at last is of NIB (1582.1) bank. The standard deviation indicates the amount of variability in stock. Among the calculated standard deviation NIB (645.57) had greater variability than EBL (482.4) than BOK (480) and then HBL (408.11). In other words it means that volatility comes in the sequence from NIBL to HBL. Only measuring the absolute variable is not sufficient to conclude the variation in the stock, if alternative need relative measures than comes to the calculation of coefficient of variation (C.V). As in the calculation of variance the NIBL shows a highest and then EBL and then BOK and at last comes the BOK. As in the form of the comparison between the standard deviation and coefficient of variation BOK std. deviation is higher and in case of C.V NIBL is higher. The computed value of C.V considered as an exponential distribution whereas, C.V with the distribution less than 1 is considered as low variance. Since all the calculated C.V is less than 1 therefore all are considered as low variance.

4.1.3 Analysis of Co Movement of Commercial Bank Index and NEPSE Index

Figure 4.5

Analysis of co Movement of Commercial Bank Index and NEPSE Index



(Source: Appendix 1)

In the figure 4.5 Index points describes the commercial index and NEPSE index. The index series of the commercial bank clearly exhibits that the fluctuation is higher than the NEPSE index. The maximum daily point of the commercial bank is Rs.1204.79 on 08/06/08 whereas the minimum point is Rs. 561.03 on 01/22/09. In case of the Index series of NEPSE the maximum daily point is Rs.1175.38 on 08/31/08 and the minimum daily point is Rs. 609.46 on 01/22/09. From the above figure we can see that the index point of commercial bank as well as NEPSE is in increasing trend had decreased in the starting phase and afterwards are in an increasing trend at the end of the period.

Table 4.1

Correlation of Commercial Bank Index and NEPSE Index

Variable	Correlation	Relation	Sig/Insig
Commercial bank & NEPSE Index	.988**	Positive	Sig

**.correlation is significant at 0.01 levels (2-tailed)

(Source: Appendix 1)

The calculation of correlation between the Commercial Bank Index and NEPSE Index shows the positive relation and it is significant at the level of 1%. It means that when the commercial Bank Index increases NEPSE Index also increases and vice versa.

4.2 Regression Equation

4.2.1 Simple regression equation

One of the aspects of the study is devoted to analyzing how NEPSE is related to Amount to public issue, Paid up value and Annual turnover. For the purpose, the average slopes were computed from the linear regressions of returns on NEPSE on various measures such as Amount to Public issue (PI); Paid up value (PV) and Annual turnover (AT). NEPSE has been specified as the dependent variable and the independent variables are specified as PI, PV and AT.

The results are based on time series data of four banks with the observations for the period of 2004/05 to 2008/09 by using simple regression equation.

The model is, NEPSE= a + B_1 (independent variable) + E. Results for various subsets of independent variables are presented as well.

Table 4.2

Estimated Relationship between NEPSE and Fundamental Variables

Independent Variable	Constant (a)	Regression Coefficient	R^2	SEE	F
Amt(PI)	437.647 (2.765)	.251 (1.514)	.433	239.677	2.292
Paid up(PV)	498.931 (3.495)	.006 (1.322)	.368	253.043	1.747
Turnover(AT)	561.211 (3.580)	.010 (.642)	.121	298.471	.412

Notes: Figures in parentheses are t- values

*The sign * denotes that the results are significant at 5 percent level of Significance*

(Source: Appendix 5)

With respect to the computed regression equations shows that all the beta coefficients have priori expected signs. Above table shows the simple regression analysis between NEPSE and other independent variables. Here, only few beta coefficients are found to be significant. The above result indicates that PV, PI and AT are positively related. The result of t-statistics indicates that PV, PI and AT all of them have higher explanatory power. Similarly, adjusted R square (R^2) is .433, .368 and .121 respectively. This indicate 43.3%, 36.8% and 12.1% variation in dependent variable NEPSE is explained by independent variable PI,PV and AT respectively.

4.2.2 Multiple regression equation

After examining the simple regression equation among the selected variables, the multiple regression analysis has been undertaken for the purpose of investigating the causality between dependent and independent variables. The multiple regressions open

up several additional options to enrich analysis and make modeling more realistic compared to the simple regression.

For the purpose, the average slopes were computed from linear regressions of NEPSE on various measures such as Amount to public issue (PI), Paid up value (PV) and Annual turnover (AT).this model is developed to unravel the separate influence of the various variables o NEPSE.

Table 4.3

Estimated Relationships between NEPSE and Fundamental Variables

Model	Constant (a)	Regression Coefficients of			R^2	SEE	F
		AMT(PI)	Paid Up(PV)	Turn Over(AT)			
1	43.217 (.086)	2.215 (.876)	-.045 (-.605)	-.019 (-.473)	.806	242.899	1.384

Notes: Figures in parentheses are t- values

(Source: Appendix 5)

With respect to the computed multiple regression equations shows that all the beta coefficients have priori expected sign. The positive regression coefficient indicates tat there is an increase in the amount to public issue (AMT). The regression constant in multiple regression NEPSE on PI, PV and AT is 43.217. The result of t statistics indicates that none of the selected variable is significant. However, adjusted R square is.806, this indicates about 80.6% variation is dependent variable NEPSE is explained by independent variable amount on Public issue (PI), Paid up value (PV) and Annual turnover (AT). The values of r square range from 0 to 1. Here R square being 0.806 indicates that the independent variables do explain the dependent variable NEPSE. The result of multiple regression analysis presented that, the relationship between NEPSE (the dependent variable) is negative with PV and AT and positive with PI.

4.3 Test of Random walk hypothesis

As stated in methodology, independence of successive price is tested using the serial correlation and run test. In this section, first, result of serial correlation is analyzed and then of run test.

4.3.1 Analysis of the result of serial correlation autocorrelation

Autocorrelation technique measures the correlation coefficient among a series of stock prices with lagged numbers in the time series data. Autocorrelation coefficient for each day in the sample was computed to test the hypothesis that successive share price changes independently. It is computed under 1 natural log difference price for lags 1 to 10. If the observed autocorrelation coefficients among price changes be zero, the hypothesis would be accepted. It means past prices contain no predictive value regarding the future price changes which leads that above normal returns cannot be earned by exploiting a sequence of historical prices. In that situation, the stock market generally described as weak efficient. In other words, the price changes is said to be independent when each of coefficient are found to be zero or close to zero. If the observed autocorrelation coefficient is departed from zero, it would imply that the successive price changes are dependant. In this situation the hypothesis will be rejected. It means the market is inefficient in pricing of shares. Moreover, larger the value of coefficient (both negative and positive) i.e. departed from zero, greater the dependence in the services of price changes.

The result of autocorrelation coefficient for daily price series has been computed for lag 1 to 10. The order coefficient shows small serial dependence. It means that if the order shifted in increasing order, the serial dependence also increased. According to appendix 7, three out of four of the first order coefficient are negative. Likewise, again three out of four are negative in 2 lag days, two out of four in 3 lag days, one out of four in 4 lag

days, two out of four in 5 lag days and rest from 7 to 10 lag days. The low number of one of negative coefficient in the 4 lag number and highest up to three in 1 and 2 lag number are of negative coefficient present.

However the agreement in the sign among the coefficient for the different securities is not necessary evidence for consistent patterns of dependence. The price changes for different securities are related to some extent to the behavior of a market component common to all securities. The auto correlation coefficient of a given securities are partly determined by the serial behavior of the market component and partly by the serial behavior of factors pertaining to that securities. Therefore it is desirable to measure the dependence. Both the judgment of coefficient magnitude and statistical significance test of autocorrelation coefficients are required to be performed.

Table 4.4

Series having significant values of first order to Tenth order Autocorrelation coefficient

Lag days	Series having coefficient<2std error	Series having coefficient>2std error	Total Series
1	1,2,3,4	-	4
2	1,2,3,4	-	4
3	1,2,3,4	-	4
4	2,3,4	1	4
5	1,2,3,4	-	4
6	1,2,4	3	4
7	1,2,3,4	-	4
8	1,2,3,4	-	4
9	1,2,3,4	-	4
10	1,2,3,4	-	4
Total	**38**	**2**	**40**

(Source: Appendix 5)

The above table is derived from the appendix 7 for the distribution of the statistically coefficient series. The first column indicates the various log days. Out of the total series, coefficient having less than two or more than two times standard error is given in the second column which was considered as statistically non significant. In the end, last column shows the total number of series covered by the study.

The result based on the table4.4 and the appendix 7 presents a different picture. Only 2 out of 40 coefficients are dispersed from the expected value zero. It means these 2 coefficients were statistically significant. It indicates that the day to day fluctuations are serially dependent in most of the cases. The remaining 38 correlation coefficients had value less than two times greater than its computed standard error which was considered as not statistically significant. Those 2 deviated coefficient and other negative values give hint that high degree of autocorrelation exists. These coefficients are also significantly deviated from zero and not statistically significant. It implies that the successive price changes are dependent. Thus, H0 stated in methodology has been rejected and HA been accepted. Therefore, it can be said that price changes are not independent and historical price of the stock provide important information in predicting tomorrows price change.

The result of autocorrelation showed that the observed first order coefficients are found to be relatively larger and statistically significant for most of the stocks. As the coefficient which shows the predominance of negative signs means that most of the observed coefficient are departed from zero. Thus we can say that few stocks had mild serial dependence. It can hardly used for predicting their future course in a meaningful manner. From the view point of investors, such low order dependence may be enough to increase their expected profit to some extent. All above evidence related traded stocks indicate small auto dependence among day to day price changes. This evidence support that random walk hypothesis model is not appropriate to describe the price behavior.

4.3.2 Analysis of the Result of Run Test

A run is defined as the sequence of price changes in the same sign. For the stock price behavior, there are three types of price change pattern namely, positive, negative and zero. This test is non parametric in nature and is used to examine independence assumption that the price changes are independent. Testing the hypothesis of independence, the deviation between the total, actual and the total expected number of runs are analyzed. There should not be significant difference between the actual and the expected number of runs to support the hypothesis of the study. The total number of actual and expected run value of standard error, value of normal variant Z and K are presented.

Table 4.5

Computation of Run Test

S.NO	Banks	No of Observations	Actual Runs(R)	Expected Runs(M)	Standard Error($\pm_m$)	Standard variate(Z)	R-M/M (K)
1	BOK	234	114	126.22	159.56	-0.07	-0.1
2	EBL	209	94	126.16	83.84	-0.38	-0.25
3	HBL	205	84	124.53	114	-0.35	-0.33
4	NIBL	226	95	132.51	134.17	-0.28	-0.28
	Total	874	387	509.42	491.57	-1.08	-0.96
	Average	218.5	96.75	127.36	122.89	-0.27	-0.24

(Source: Calculation of its recorded number based on official record of previous daily closing price of share transaction in NEPSE (Appendix-1))

As presented in above table, the expected number of runs(M) was higher than the actual number of runs(R) .the value of Z and K of all companies were also negative. The average values were -0.27 and -0.24 respectively. It indicates that the actual number of runs fall short of total expected number of runs. However, the absolute amount of dependence in the price change is more important than whether the dependence is

positive or negative. Therefore, it is desirable to test the values of standard normal variate Z for significance.

Table 4.6

Names of Companies Having Significant Value of Standard Normal Variate Z at 5% & 1% Level of Significance

S.NO	Name of bank	Level of significance	
		5%	1%
1	BOK	A	A
2	EBL	A	A
3	HBL	A	A
4	NIBL	A	A
Total		4	4

(Note: A indicates that the hypothesis of independence is accepted)

(Source: Appendix 5)

The above table is based on table 4.5. Inspecting the above table, which gives the information regarding the composition of standardized variable, it can be seen that the standard normal variate Z is significant (at 5% and 1%) in respect of four sampled banks. At 5% and 1%level of significance, hypothesis of BOK, EBL, HBL, and NIBL of null hypothesis are accepted. It is notable that this would imply a positive serial dependence among the price change. The serial correlation analysis carried out in earlier section and if the values of autocorrelation is near to zero it is the indication of independence. But if the value departs significantly from zero, in positive and negative direction it causes dependence among the time series data accordingly either direction.

The value of standard normal variate Z is presented in second last column of table. The average value of Z is /0.27/. The value of percentage difference between actual and expected run are given in last column of a table. Most of the results are quite large due to the values of actual runs over expected runs values. All values of Z as well as K are in

negative sign. The percentage difference varied from lowest 10% to highest 33%. However mean absolute value of K is /0.24/.

Table 4.7

Result of Percentage Difference between the Actual and Expected Number of Runs as Proportion of Expected Number of Runs

Percentage of inequalities and Equalities of K	Number of K
K having percent difference <= 10	1
K having percent difference <=28	2
K having percent difference > 30	1
Total	4

(Source: Appendix -1)

This table indicates that the percentage difference between actual and expected number of runs are quite higher. Out of four stocks, only one stock is less than or equal to 10%. Three out of five stocks are less than 28%. One stock out of four stocks is greater than 30%. In conclusion, there is significance difference between expected and actual number of runs in the daily price change series. These evidences suggest that the random or weak efficient market hypothesis does not support the daily closing stock of NEPSE. In general, the result shows that there is a significant difference between actual and expected number or runs in the series of price change. Based on these findings, these companies do not follow random walk model, but support the result based on autocorrelation analysis.

4.4 Analysis of the financial indicators

To gain the actual knowledge regarding the movement of the shares some financial and statistical tools are used to analyze the stock price behavior. Therefore this part presents the computation of mean, standard deviation and coefficient of variation of EPS, MPS, DPS, NWPS and ROE of sampled commercial banks.

Table 4.8

Calculation of financial indicators of BOK

Year	EPS(RS)	MPS(RS)	DPS(RS)	NWPS(RS)	ROE (%)
2004/05	30.1	1825	10	213.6	14.09
2005/06	43.67	2350	15	230.67	18.93
2006/07	43.5	1375	18	164.68	26.41
2007/08	59.94	850	20	222.51	26.94
2008/09	54.68	430	2.11	206.25	26.51
Mean	46.38	1366	13.02	207.54	22.58
S.D	11.55	761.82	7.17	25.66	5.8
C.V	0.25	0.56	0.55	0.12	0.26

(Source: Annual Report of BOK)

The average EPS earned by this bank during the study period is 46.38. The standard deviation is 11.55 and the coefficient of variation is 0.25. The 25% of EPS explains that there is light risk involved in earning capacity of the BOK. During the study period, the mean MPS of 5 years analysis period is Rs 1366. The standard deviation, which measures the total risk of the particular observation, is 761.82. The coefficient of variation indicates per unit's risk of return that is 0.56. The 56% of EPS explains that there is more than light fluctuation in MPS of BOK in the study period. The average DPS is 13.02 and the total risk involved in DPS to the shareholder is 7.17 which is measured by standard deviation. The coefficient of variation is 0.55 which indicates that there is 55% is fluctuation in DPS of BOK during the study period. The average of NWPS is 207.54 with a standard deviation of 25.66. The coefficient of variation is 12% which indicates that there is no more risk involved in NWPS of the BOK. Its means there is light fluctuation in NWPS of BOK during the study period. The average ROE is 22.58 and the standard deviation is 5.8. The coefficient of variation is 0.26 i.e. 26% which indicates that there is fluctuation in ROE.

Table 4.9

Calculation of financial indicators of EBL

Year	EPS(RS)	MPS(Rs)	DPS (%)	NWPS(RS)	ROE (%)
2004/05	54.22	870	0	219.87	24.66
2005/06	62.78	1379	25	217.67	28.84
2006/07	78.42	2430	10	280.82	27.93
2007/08	91.82	3132	20	321.77	28.54
2008/09	99.99	2455	30	313.64	31.88
Mean	77.45	2053.2	17	270.75	28.37
S.D	19.17	911.28	12.04	49.88	2.58
C.V	0.25	0.44	0.71	0.18	0.09

(Source: Annual Report of EBL)

The average EPS of EBL is Rs. 77.45 earned by this bank during the study period. The standard deviation is 19.17 and the coefficient of variation is 25% this explains that there is low risk involved in earning capacity of EBL. During the study period of EBL, the mean MPS of five years analysis period is Rs. 2053.2 with the standard deviation of 911.28. The coefficient of variation is 0.44 i.e. 44% which shows that there is low risk involved in market price of share for the investors and the shareholder of the bank. The mean DPS is Rs. 17 with the standard deviation of 12.04. The coefficient of variation is 71% which indicates that there is very high fluctuation in DPS of this bank. The average NWPS of this bank is Rs. 270.75 with the standard deviation of 49.88. The coefficient of variation is 18% which indicates that there is low risk involved in NWPS of this bank. The average of ROE and the standard deviation are 28.37 and 2.58 respectively. The coefficient of variation is 9% which explains that there is low risk involved in ROE of this bank.

Table 4.10

Calculation of financial indicators of HBL

Year	EPS(RS)	MPS(Rs)	DPS (RS)	NWPS(RS)	ROE (%)
2004/05	47.91	920	11.58	239.59	20
2005/06	59.24	1100	30	228.72	25.9
2006/07	60.66	1740	15	264.74	22.91
2007/08	62.74	1980	25	247.95	25.3
2008/09	61.9	1760	12	256.52	24.13
Mean	58.49	1500	18.72	247.5	23.65
S.D	6.06	461.52	8.32	14.09	2.34
C.V	0.1	0.31	0.44	0.06	0.1

(Source: Annual Report of HBL)

The average EPS earned by the bank is Rs. 58.49 during the study period. The standard deviation of the EPS is 6.06 and the coefficient of variation of this bank is 0.1 i.e. 10%. The 10% of EPS explains that there is very low risk involved in earning capacity of HBL. During the study period of HBL, the mean MPS of five years analysis period is Rs. 1500. The standard deviation is 461.52 and the coefficient of variation is and the coefficient of variation is 31%. The 31% CV indicates that there is low risk involved in market price of the share for the investors and shareholders of the bank. The average DPS is Rs.18.72 with the standard deviation of 8.32. The coefficient of variation is 44% which indicates there is a more than little bit of fluctuation in DPS during the study period. The average NWPS is 247.5 with standard deviation is 14.09. The coefficient of variation is 0.06 i.e. 6% which indicates that there is very low fluctuation in NWPS during the study period. The average ROE is 23.65 with a standard deviation 2.34. The coefficient of variation is 0.1 that is 10% which indicates there is low degree of fluctuation in ROE.

Table 4.11

Calculation of financial indicators of NIBL

Year	EPS(RS)	MPS(Rs)	DPS (RS)	NWPS(RS)	ROE (%)
2004/05	39.5	800	12.5	200.8	19.67
2005/06	59.35	1260	20	239.67	24.76
2006/07	62.57	1729	5	234.37	26.7
2007/08	57.87	2450	7.5	223.17	25.93
2008/09	37.42	1388	20	162.35	23.05
Mean	51.34	1525.4	13	212.07	24.02
S.D	11.9	614.79	6.94	31.55	2.79
C.V	0.23	0.4	0.53	0.15	0.12

(Source: Annual Report of NIBL)

The average EPS earned by this bank during this study period is 51.34. The standard deviation is 11.9 and the coefficient of deviation is 23%. The 23% of EPS shows the there is light risk involved in earning capacity of the NIBL. During the study period of NIBL, the mean MPS of five years analysis period is 1525.4 that mean average MPS is Rs.1525.5. the standard deviation is 614.79 and the coefficient of variation is 40% which indicates that there is a risk involved in market price of share for the investors and the shareholder of the bank. The average DPS of this bank is Rs.13. the standard deviation measures the total risk involved in dividend is 6.94. The coefficient of variation is 53% which indicates that there is larger fluctuation in DPS. The average of NWPS is Rest. 212.07 And standard deviation is 31.55. The coefficient of variation is 15% which indicates that there is less fluctuation in NWPS. The average of ROE is 24.02 and the standard deviation is 2.79. The coefficient of variation is 12% which indicates there is little fluctuation in ROE of the bank during the study period.

4.4.1 Correlation analysis

The correlation analysis is generally used to describe the degree to which one variable is related to another. In statistics, it is used to order to depict the co-variation between two or more variable. It also measures the extent to which one variable affects the other one. It also indicates the relationship is significant or insignificant.

Table 4.12

Correlation Analysis of BOK

Variables	Correlation(r)	Relation	Coefficient of determination(r^2)	Sig/Insig
MPS&EPS	0.101	Positive	0.0102	Insignificant
MPS&DPS	0.330	Positive	0.1089	Insignificant
MPS&NWPS	-0.092	Negative	0.0085	Insignificant
MPS&ROE	0.151	Positive	0.0228	Insignificant

(Source: Calculation based through the Annual Trading Report)

The correlation of MPS with EPS and DPS is 0.101 and 0.330 respectively during the study period of BOK. It means there is a positive correlation between them. The coefficient of variation of MPS with EPS and DPS is 0.0102 and 0.1089 respectively which indicates that the MPS of BOK is not deeply affected by EPS and DPS. In other words nearly 1% and 11% of total changed in MPS is due to the effect of EPS and DPS. The higher portion of total changed on MPS is due to the effect of other factor. The variable MPS is uncorrelated with the variable EPS and DPS that means the correlation of MPS with EPS and DPS are insignificant. The correlation between MPS and NWPS is -0.092 that means that there is an inverse relationship. It means that when NWPS increases MPS decreases and voice versa. The coefficient of determination is 0.0085 which indicates that 0.85% change in MPS is explained by NWPS and remaining change in MPS is due to other factors. The correlation between the MPS and ROE is 0.151 which shows the positive relation. It shows that MPS is insignificantly correlated with ROE and the coefficient of determination is 0.0228 which means 2.28% variation MPS is explained by variation in ROE.

Table 4.13

Correlation Analysis of EBL

Variables	Correlation(r)	Relation	Coefficient of determination(r^2)	Sig/Insig
MPS&EPS	0.657	Positive	0.43	Insignificant
MPS&DPS	0.468	Positive	0.22	Insignificant
MPS&NWPS	0.450	Positive	0.2	Insignificant
MPS&ROE	0.936	Positive	0.88	Significant at 0.05 level (2 tailed)

(Source: Calculation based through the Annual Trading Report)

During the study period, the correlation between MPS and EPS of EBL is positive which is 0.657 and the determination which shows nearly 43% variation in MPs which is explained due to the variation of EPS. The correlation between MPS and EPS is insignificant. The association between MPS and DPS is positive (0.468) and that means that 46.8% variation in MPS is explained due to change in DPS. The correlation of MPS and NWPS is 0.2 or 20% which represents the positive relationship. The correlation between MPS and ROE is 0.936 which shows higher degree of positive relationship and also significant at 5% level of significance (2 tailed). The coefficient of determination is 0.88 which means 88% variation is explained by variation in ROE ratio.

Table 4.14

Correlation Analysis of HBL

Variables	Correlation(r)	Relation	Coefficient of determination(r^2)	Sig/Insig
MPS&EPS	0.395	Positive	0.1560	Insignificant
MPS&DPS	0.000	Positive	0.0000	Insignificant
MPS&NWPS	-0.592	Negative	0.3505	Insignificant
MPS&ROE	0.788	Positive	0.6209	Insignificant

(Source: Calculation based through the Annual Trading Report)

The correlation between MPS and EPS is positive with 0.395 and the coefficient of determination is 0.156 that means 15.6% of the total changed on MPs is due to the effect of MPS. So that we can say the MPS is not highly affected by EPS and remaining change in MPS is due to other related factors. The correlation between MPS and EPS is insignificant. The correlation between MPS and DPS shows that there is no correlation between them and the total change is due to the other factors that mean they are inversely related. The correlation between MPS with NWPS is -0.592 it shows there is very low degree of negative relationship. The coefficient of determination is 0.3505 that means 35.05% change in MPS is explained by inverse change in DPS. The correlation between MPS with ROE is 0.788 which shows that there is high degree of positive relationship between them. The coefficient of determination between MPS and ROE is 0.6209 that means 62.09% variation in MPS is explained by variation in ROE.

Table 4.15

Correlation Analysis of NIBL

Variables	Correlation(r)	Relation	Coefficient of determination(r^2)	Sig/Insig
MPS&EPS	-0.488	Negative	0.2381	Insignificant
MPS&DPS	-0.538	Negative	0.2894	Insignificant
MPS&NWPS	-0.444	Negative	0.1971	Insignificant
MPS&ROE	-0.405	Negative	0.1640	Insignificant

(Source: Calculation based through the Annual Trading Report)

During the study period the correlation of MPS with EPS, DPS, NWPS and ROE are negative respectively .these all shows the low degree of negative relationship. The coefficient of determination of MPS with EPS and DPS are 0.2381 and 0.2894 which indicates that nearly 23.81% and 28.94% variation in MPS is explained by variation in EPS and DPS respectively. The correlation of MPS with NWPS and ROE are -0.444 and -0.405. These all shows the low degree of negative relationship. The coefficient of determination is also 0.1971 and 0.1640 which indicates that nearly 19.71% and 16.4% in

MPS is explained by variation in NWPS and ROE and all of the correlation are insignificant.

4.5 Major Findings of the Study

The major findings of the study are as follows:

1. The graph of all the sampled commercial banks shows the downward movement of the trend line and this exhibits the increasing trend in the price of the stock.
2. The computed value of SD and CV indicates the variability and volatility of the stock. The CV of the share price indicates that all the stocks are low variance as the computed CV is less than 1. The mean shows that the average value for each stock price. The highest average value is of EBL whereas the lowest average value is of NIBL. The standard deviation indicates the amount of variability in stock. Among the computed standard deviation of the sampled banks, the standard deviation the highest is of EBL i.e.994.95 and is of lowest is of HBL i.e.492.33 and comes in between is of BOK i.e.812 and is of NIBL i.e.667.97.it conveys the results that the most volatile stock is of EBL and least volatile is of HBL.
3. The daily co movement of the series of indices has exhibited the fluctuation of Commercial bank Index and NEPSE Index. The correlation between them shows the significance. That's why they have the same volatility. The correlation shows that they are positive correlated and they are significant at the 0.01level.
4. Simple Regression as well as Multiple Regressions has been calculated between NEPSE, Amount on Public Issue (PI), Paid up Value (PV) and Annual Turnover (AT). The regression coefficient is as 0.251, 0.006 and 0.010 respectively and they all are positive coefficient which indicates that one rupee increase/decrease in the independent variable affects the dependant variable NEPSE. The coefficient of determination indicates the total variation in the variation in the variables and the higher t-value also shows the relationship is statistically not significant.
5. The result of t-statistic under simple regression indicates that the variable PI and AT have higher explanatory power. Similarly, adjusted R square is 0.433, 0.368 and 0.121 respectively. This indicates that 43.3%, 36.8% and 12.1% variation in

dependant variable NEPSE is explained by independent variables PI, PV and AT respectively. Whereas, the results of t statistics on multiple regression indicate that none of the selected variable is significant. However, adjusted R square is .806, this indicates about 80.6 variation is dependant variable NEPSE is explained by independent variable Amount on Public Issue (PI), Paid up (PV), and Annual Turnover (AT) respectively.

6. The first order autocorrelation coefficient, for most of the equity shares is statistically significant from expected value zero. The evidence pertaining to most of the shares indicates serial dependence. Thus, this evidence suggests that the Nepalese market does not accept random walk hypothesis and some price changes can even predict some valuable information in predicting future price changes. Therefore, opportunities for speculation exist for sophisticated investors in Nepalese stock market.
7. The total numbers of actual and expected runs are statistically significant for most of the shares, which implies that price changes are significantly different from random series. Results of run test also support the result of autocorrelation. Therefore, today's price change is dependant on the information of yesterday's price.
8. The mean absolute values of the correlation are lower when lag days are increased. This means the information of past price change have little role to predict changes for longer days.
9. There include low order serial dependence, which helps in certain extent to increase investors expected profit.
10. Due to the reason that the persistence hypothesis has been supported by the result of autocorrelation and the run test, professional investor's either individual or institutional can beat the market. Therefore, to make greater profit than 'naïve buy and hold strategy', acute fundamental or other analysis are required which accurately predicts the appearance of the new information in the market that affects the price of shares.
11. The study shows that the CV of BOK Index is high among the selected banks Index. This implies that there is high risk associated in the sample bank Index, which indicates that this bank is very sensitive in the Nepalese stock market and then comes EBL & NIBL, whereas the CV of HBL is low, which means that there involves low risk and its stock is strong in the Nepalese stock market.

12. With the comparison between the Commercial Bank Index and the NEPSE Bank Index, the study shows that Commercial Bank Index is highly fluctuated than the NEPSE Index and is highly sensitive in the Nepal stock exchange and both the Index are interrelated with each other in the positive form.
13. The CV of the banks indicates that the MPS of the selected banks are not stable. The CV ranges from 31% to 56%.The HBL bank has the lowest CV and which involves low risk and BOK bank has the highest risk which involves the highest risk. EBL and NIBL are considered to be at the moderate risk.
14. The CV of EPS of the HBL banks involves low risk and BOK and EBL are as consistent high risk and NIBL is at moderate risk.
15. The DPS of HBL has the lowest CV and BOK has the highest. This means that HBL has higher fluctuation and indicates that these banks common stocks are riskier. And least CV of HBL indicates that this bank has highest consistency in paying the dividend.
16. The fluctuation in NWPS of EBL is quite high and of HBL bank is quite low. This means that EBL has high fluctuation and HBL has maintained consistency than other selected banks.
17. The CV of ROE is higher of BOK and that of lowest of HBL bank. It means that there is more variability in ROE as it ranges from 10% to 26%.
18. The MPS of BOK is positively related with EPS, DPS, MPS and ROE whereas it is negatively correlated with NWPS. All the correlation is insignificant. This indicates that MPS largely does not depend on these variables.
19. The MPS of EBL is positively related with the other financial indicators and it is significantly related with the ROE. It means that MPS has effect on the financial factor of ROE.
20. For HBL, the MPS is positively related with EPS, DPS and ROE and negatively related with the NWPS. And the relation between all these factors is insignificant with the MPS correlation.
21. The MPS of NIBL is negatively correlated with EPS, DPS, NWPS and ROE. All these correlation are not significant. So, the MPS is not largely depends on these variables.

CHAPTER V
SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Summary

This study is concluded to reveal the current status of stock price behavior in Nepal stock exchange. This study mainly aims at examining the stock price behavior of commercial banks in Nepal and to test whether successive price changes are dependent or not and to analyze the different financial indicators.

The specific objectives of the study are as:

- To study and analyze the stock price movement of the commercial banks.
- To analyze the stock volatility of the stock
- To analyze the co-movement of commercial bank and the NEPSE index.
- To study and analyze the relationship of NEPSE with independent variables(Amount of public issue; Paid up value and Total turnover)
- Analysis of Random walk hypothesis to know the market efficiency.
- To analyze correlation among various financial indicators (EPS; DPS; NWPS; ROE; MPS).

The required data are taken from the website of the Nepal stock exchange, its annual report and the financial report of the four different banks, various publications of securities board of Nepal. To make the study more effective Review of national and international journals, books as well as masters dissertations are studied.

Both the analytical and descriptive research designs are adopted to carry out this study. The stock market performance is examined by analyzing the number of listed companies in NEPSE. Statistical tools as well as the model are used to analyze the behavior of share price of the sampled banks. Run test is used to know whether the movement of market

price of stock is random is not. Autocorrelation test is done to find the dependence of the price changes. In short, it analyzes whether the price changes are linearly correlated or not. To this end, the independent assumption examines the successive prices in natural logarithm of shares of four commercial banks listed in NEPSE. The regression, autocorrelation and the run test were adopted as test methodology.

To test the independent assumption, the serial (auto) correlation coefficient was estimated among the first difference of log prices for different lags. The estimated autocorrelation were found significantly deviated from the expected value zero. It means that the log price series of shares were serially dependent. Therefore, the random walk model was not accepted for most of the cases. The run test was also conducted to test the hypothesis of randomness. For this purpose, percentage difference between actual and expected number of runs were observed. So, the series was found to be non random and the evidence did not support the assumption of independence.

The result of serial correlation test and run test did not support the hypothesis of independence. The result however demonstrated that the successive price changes are dependent with historical price series. Thus, the hypothesis of randomness was also rejected. It is also important to note here that in some cases two tests have different conclusions. Such differences may arise from two ways. Firstly, the autocorrelation was only claim to investigate whether or not the price changes are linearly correlated. Secondly, the run tests help to find out whether the price changes follow some trend, not necessarily linear.

Regarding the analysis of the correlation between the commercial bank index and the NEPSE Index the result indicates that it is significant at 0.01 levels. Comparison between NEPSE and commercial bank index, it is found that commercial bank is highly fluctuated than the NEPSE index. But both NESE and commercial bank index move together and also shows well performance in the long run in the Nepalese stock market.

There is no consistence performance in the relationship of MPS with EPS, DPS, NWPS and ROE for the sampled banks. The calculated part of mean, standard deviations and coefficient of variation differs accordingly with the calculation.

The correlation analysis of BOK indicates that of MPS with EPS, DPS, NWPS and ROE is insignificant and it is negative with the NWPS. So, it means that MPS is not largely dependent on this variable. The MPS of EBL has high correlation with ROE and is significant at 0.05 levels. MPS depends on ROE. The correlation of MPS with EPS, DPS and ROE is non significant which indicates that MPS does not depend on it. The MPS of HBL is negatively correlated with NWPS and is insignificant and MPS with EPS, DPS, ROE is also insignificant with others indicators. The MPS of NIBL with EPS, DPS, ROE and NWPS is negatively correlated and it indicates that MPS does not depend in these indicators.

The risk per unit of return and total risk for the investors are different in different sample banks which have been shown by the coefficient of variation and standard deviation.

From the data analysis, investor's views regarding the decision on stock investment and the factors that impact on stock price are identified. The investors in Nepal invest in securities without analyzing the position of the company. Factors that impact on stock price are earnings, dividends, market price of the share increase with the information on future prospects, share price and banking sector have higher share price than other sector. Similarly, there are the other environmental factors that impact on share price. Such factors are political instability, uncertainty, strike, bands, demonstration and demand and supply of the share rumors, change in management of the share of a bank, government policy affects the share price.

5.2 Conclusions

This thesis paper addressed stock price behavior of commercial bank in Nepal. This is based on the study of four commercial banks whose stock are listed and traded in stock

market. The random walk hypothesis or weak efficient market hypothesis of share price behavior has been tested to get answer whether successive daily price changes of commercial banks shares were dependant or not. This independent assumption of the study has been tested by the autocorrelation and run tests. The dependence in the series of price changes implies that the price changes in the future will be dependant with the historical price. Thus, the information of historical price is helpful to predict future price of the shares. Therefore, sufficient opportunities are available to individuals or institutional investors to make higher expected profits in future based on those past price series. The analysis of the financial indicator's gives the advantages to the investors to analyze the share price and its return in the investment part to take the maximum advantage by investing in the appropriate share for maximization of return.

From the study it shows that in the early phase of the study, the stock price has drastically decreased but with the passage of time it indicates movement in the positive but slowly rising form. As with the comparison between NEPSE and Commercial Bank Index, it indicates that commercial Bank Index is highly fluctuated with the NEPSE Index but is positively correlated with the significant at the level of 0.01.

The risk per units of return and total risk for the investors are different in different sample a bank which has been shown by the coefficient of variation and standard deviation. As the profitability ratio should be carefully kept in mind by the bank so that the investors can be attracted in the long run of investment.

5.3 Recommendation

The findings of this study provide important information for those who are directly or indirectly concerned with the stock market activities. Thus, major recommendation is as follows:

1. Political stability should be maintained by the government for the development of securities of securities market. As there have been seen strikes, bands and chakka

jam, which affects the market in the negative term (as been the closure or less transaction in these days); so these kinds of things should be abolished.

2. Observation of volatility indicates that sample stocks exhibit large variation in their prices. They are not doing well. Therefore the stock of the concerned bank should analyze and monitor the causes of the variation.
3. As there had been seen the rapid change in the stock price of the share, the actual cause should be analyzed and keep it for the future reference.
4. Since the movement of the share price is affected by so many factors, the investors should analyze the previous prices listed in the stock market and the performance of the concerned bank to make decision in regarding of the investment in the share.
5. The computed SD and CV have decided that the Index of commercial sectors fluctuates more than NEPSE Index. The perfect positive correlation between them is observed. This implies the prosperity in the stock market. The series of commercial bank Index indicates the dominance of its position.
6. Nepalese stock market is not fully efficient in pricing shares. Both the tests serial correlation and run test have shown the results. Therefore it is suggested that the smart investors should take benefits of the short term speculation. It is also recommended that the stock market makers should carry out the research work to find out the causes of inefficiency.
7. The tests of both autocorrelation and run tests findings shows that the successive price changes are dependant with the price of the historical changes. So, it is recommended that the investors should consult with the fundamentalist and technical analyst before the investment is made in any share listed in stock market.
8. As the coefficient of variation is the major determination for the calculation of risk, so it is recommended that the entire bank should analyze periodically and try to minimize the risk by proper handling of the overall performance of the bank.
9. The banks had to be careful regarding the profitability ration. If these ratios are unduly low then it would negatively affect the share price movement in the stock exchange of the concerned bank.

BIBLIOGRAPHY

Books

Bhalla, V.K. (1993). *Investment Management, Security Analysis and Portfolio Management*. Bombay: S. Chandra Publishing Company.

Blake, D. (1998*). Financial Market Analysis.* New York: McGraw Hill Publication.

Cheney, J. & Edward, A.M.. *Fundamental of Investments*. *(10th Edition).* St Paul: West Publishing Company.

Cootner, P.H. (Ed). (1964). *The Random Character of Stock Market Prices*. Massachusetts: M.I.T. Press.

Francis, J.C. (1998*). Management of Investment*. *(2nd Edition).* Singapore: McGraw Hill Book Company

Francis, J.C. (1999). *Management of Investment. (6th Edition).* New York: City University.

Gitman, L.J. (1992) *Principle of Management Finance*, 5th edition. New York: Harper Collins Publisher.

Gupta, O.P. (1985). *Behavior of Share Prices in India:* A *Test of Market Efficiency*. New Delhi: National Publishing House.

Haugen, R.A. (1997). *Modern Investment Theory*. New Delhi: Prentice-Hall of India Pvt. Ltd.

Moore, A.B. (1962). *Some Characteristics of Changes in Common Stock Prices in*: P.H. Coother Ed. (14). 139-161.

Rao, N.K. (1979). *Random Walk Hypothesis: An Empirical Study. Arthanity* 14(1):53-59.

Rao, N.K. (1989). *Stock Market Efficiency and Price Behavior: The Indian Experience*. New Delhi: Prentice Hall of India.

Sharma, P.K., & Chaudhary, A.K. (2058). Statistical Methods. *(1st Edition)*. Kathmandu: Khanal Books Prakashan.

Sharpe, W.F,, Gordoon, J.A., & Jeffey, V. B. (1999). *Investments.* India: Prentice Hall.

Sharpe, W.F., Gordoon, J.A. & Jeffey, V.B. (1999). *Investments*. *(5th Edition)*. India: Prentice Hall.

Shrestha, M.K. & Bhandari, D.B. (2004). *Financial Markets and Institutions*. Kathmandu: Buddha Academic Publishers and Distributors.

Singh, P. (1991). *Investment Management*. *(2nd Edition)*. New Delhi: Himalayan Publishing House.

Teweles, R.J., Bradley, E.S., & Teweles, M. (1992). *The Stock Market. (6th Edition).* New York: John Wiley and Sons Inc.

Weston, J.F. & Copland, T.E. (2002). *Managerial Finance. (9th Edition)*. New York: The Dryden Press.

Independent Studies

Dornar, A.W. (2005). *Stock Market Reaction to Financial Information's*. Human Resource Costing & Accounting. 9(2):94-111

Gurung, J.B. (2004). *Growth and Performance of Securities Market in Nepal*. The Nepalese business studies1 :(85-92)

Ojha, K.P. (2002). *Financial Performance and Common Stock Pricing.* A Mini Research: Central Department of Management. Tribhuvan University.

Pradhan, R.S. (2003). *Research in Nepalese Finance, Stock Market Behavior in a Small Capital Market: A Case of Nepal.* Kathmandu: Buddha Academics Publishers and Distributors Pvt. Ltd., (106-135).

Timilsina, Y. (2001). "*Capital Market Development and Stock price behavior in Nepal"* economic review: Occasional Paper no.13

Yao, J., Paritington, G., & Stevenson, M. (2006). *Run Length and the Predictability of Stock Price Reversal.* Accounting and Finance 45:4,653-671.

Journal /Articles

Baral, K.J. & Shrestha, S.K. (2006). *Daily Stock Price Behavior of Commercial* B*ank in Nepal*. The Journal of Nepalese Business Studies Vol. III No.1

Bo Qian , K.R. (2007). *Stock market prediction with multiple classifiers- Applied Intelligence* (**26**:1, 25-33)

Pradhan, R.S. & Upaddhaya, B.D. (2004). "T*he Efficient Market Hypothesis and the* B*ehavior of Share Prices in Nepal*" The Nepalese Management Review 12 :(153-177)

Robert, W.F. & Michael, D.M. (2002). *The Impact of Stock Index Futures Trading on*

Daily Returns Seasonality: *A Multicountry Study -The Journal of Business* (75:1, 95-125)

Roland, F. (2005). *Financial Liberalization and Stock Price Behaviour in Asian Emerging Markets-Economic Change and Restructuring* (38:1, 37-62)

Spada, G., Farmer, J. D. & Lillo, F. (2008). *The Non-Random Walk of Stock Prices: the Long-Term Correlation between Signs and Sizes- The European Physical Journal B* (64:3-4, 607-614).

Yu Xin, Gongmeng, C. & Michael, F. (2006). *The Efficiency of the Chinese Commodity Futures Markets: Development and Empirical Evidence"China <html_ent glyph="@amp;" ascii="&"/> World Economy* 14:2, 79-92

Thesis

Bhandari, K. (2009). *Trends of Stock Market Price in Nepalese Securities Market.* Kathmandu: Shanker Dev Campus, Tribhuvan University.

Gautam, S. (2004). *A Study of Stock Market Behavior in Nepal*. Kathmandu:Shanker Dev Campus, Tribhuvan University.

Neupane, Roshani (2008), S*tock Price Behavior of Commercial Bank in Nepal.* Kathmandu: St Xavier College, Tribhuvan University.

Poudel, L. (2001). *A study on Share Price Movement of Joint Venture Commercial Banks in Nepal.* Kathmandu: Tribhuvan University.

Poudel, P.K. (2002). *Share Price Behavior of Joint Venture Banks in Nepal*. Tribhuvan University, Kathmandu.

Prajapati, R. (2009). *A Stock Market Behavior of Listed Companies in Nepal*. Kathmandu: Shanker Dev Campus, Tribhuvan University.

Shrestha, P. (2003). *Behavior of Stock Market Price*. Kathmandu: Shanker Dev Campus, Tribhuvan University.

APPENDIX-1

Daily Share Previously Closing Prices

DATE	BOK	EBL	HBL	NIBL
7/16/08	2350	3132	1980	2440
07/17/08	2400	2965	2135	2571
07/20/08	2460	2951	2200	2640
07/21/08	2399	2960	2170	2620
07/22/08	2414	2935	2140	2606
07/23/08	2300	2861	2095	2620
07/27/08	2400	2840	2120	2660
07/28/08	2411	2930	2250	2700
07/29/08	2425	2930	2220	2686
07/30/08	2460	3030	2275	2700
07/31/08	2485	3225	2493	2760
08/03/08	2630	3425	2500	2781
08/04/08	2614	3310	2460	2860
08/05/08	2652	3480	2550	3146
08/06/08	2754	3500	2674	3272
08/07/08	2809	3672	2720	3599
08/10/08	2601	3600	2600	3430
08/11/08	2600	3570	2500	3235
08/12/08	2650	3400	2550	3450
08/13/08	2630	3301	2515	3400
08/14/08	2610	3305	2560	3300
08/18/08	2649	3370	2546	3281
08/19/08	2585	3270	2531	3155
08/20/08	2500	3250	2449	3120
08/21/08	2560	3226	2511	3150
08/24/08	2536	3200	2470	****
08/25/08	2451	3170	2510	****
08/26/08	2472	3220	2490	****
08/27/08	2451	3160	2470	3156
08/28/08	2420	3140	2400	2100
08/31/08	2470	3110	2420	2310
09/01/08	2595	3230	2463	2541
09/02/08	2565	3190	2450	2495
09/03/08	2530	3200	2530	2525
09/04/08	2475	3185	2470	2466
09/07/08	2530	3175	2410	2460
09/08/08	2540	3100	2410	2470
09/09/08	2550	3100	2460	2400
09/10/08	2530	3083	2550	2380

09/11/08	2460	3105	2530	2358
09/15/08	2545	3125	2491	2352
09/16/08	2499	3102	2479	2300
09/17/08	2475	3112	2450	2280
09/18/08	2450	3120	2445	2230
09/21/08	2550	3085	2470	2285
09/22/08	2500	3039	2480	2255
09/23/08	2465	3010	2480	2230
09/24/08	2450	2991	2490	2211
09/25/08	2400	2970	2490	2150
09/28/08	2495	2950	2480	2150
09/29/08	2365	****	2475	2175
10/01/08	2400	2949	2480	2210
10/05/08	2415	****	2490	2244
10/13/08	2400	2950	****	2285
10/15/08	2330	2860	2500	2245
10/16/08	2360	2975	2455	2220
10/19/08	2361	3033	2450	2200
10/20/08	2301	2940	2395	2150
10/21/08	2210	2850	2290	2100
10/22/08	2215	2900	2320	2125
10/23/08	2255	2958	2300	2170
10/26/08	2274	3000	2285	2213
10/27/08	2299	2856	2300	2220
11/02/08	2299	2950	2300	2110
11/03/08	2280	****	2310	1300
11/05/08	2255	****	2280	1430
11/06/08	2205	****	2252	1450
11/09/08	2201	****	2200	1440
11/10/08	2090	****	2150	1400
11/11/08	2029	****	2125	1300
11/12/08	2170	****	2200	1310
11/13/08	2200	2400	2165	1370
11/16/08	2190	****	2100	1331
11/17/08	2167	****	2058	1290
11/18/08	2080	2352	2020	1270
11/19/08	2097	****	2050	1200
11/20/08	2075	****	2030	1240
11/23/08	2060	****	2010	1218
11/24/08	2010	****	1950	1200
11/25/08	1901	****	****	1185
11/26/08	1840	****	1935	1160
11/27/08	2024	****	1960	1201
11/30/08	1840	****	1935	1160
12/01/08	1999	2303	1965	1315

12/02/08	2190	2123	1880	1350
12/03/08	2121	2125	1886	1345
12/04/08	1500	2157	1940	1380
12/07/08	1490	2200	1945	1357
12/08/08	1420	2200	1908	1350
12/10/08	1400	2200	1900	1314
12/11/08	1410	2127	1880	1300
12/14/08	1395	2180	1850	1321
12/15/08	1395	2137	1830	1325
12/16/08	1390	2095	1850	1300
12/17/08	1371	2054	1840	1260
12/18/08	1340	2070	1800	1271
12/21/08	1340	2009	****	1256
12/22/08	1270	****	****	1225
12/23/08	1255	1946	****	****
12/24/08	1258	1935	****	1110
12/28/08	1255	1900	****	1220
12/29/08	1270	1900	****	1201
12/31/08	1300	1900	****	1205
01/01/09	1325	1900	****	1181
01/04/09	1335	1910	****	1200
01/05/09	1290	1875	****	1200
01/06/09	1315	1855	****	1197
01/07/09	1308	1890	****	1180
01/08/09	1324	1901	****	1180
01/11/09	1325	****	1800	1190
01/12/09	1300	1900	1520	1175
01/13/09	1297	1954	****	1155
01/15/09	1283	2026	1465	1160
01/18/09	1240	1947	1445	1080
01/19/09	1280	1951	****	1105
01/20/09	1271	2069	1415	1100
01/21/09	1270	2028	1275	1101
01/22/09	1250	1988	1235	1020
01/25/09	1155	2010	1141	1003
01/26/09	1205	1930	1137	****
01/28/09	1300	1920	****	1030
02/01/09	1342	2035	****	1133
02/02/09	1285	1975	1167	1140
02/03/09	1330	2005	****	1110
02/04/09	1295	1960	****	1110
02/05/09	1310	1960	****	1135
02/08/09	1313	2007	1261	1150
02/09/09	1325	2060	1337	1195
02/10/09	1324	1990	1390	1178

02/11/09	1334	1960	1441	1195
02/12/09	1350	1990	1469	1201
02/15/09	1340	2015	1456	1200
02/16/09	1379	2015	1475	1215
02/17/09	1400	1990	1525	1230
02/19/09	1484	2050	****	1250
02/22/09	1511	2040	1586	1300
02/24/09	1555	2080	1600	1336
02/26/09	1500	2066	1610	1310
03/01/09	1455	2120	1560	1285
03/02/09	1435	2060	1570	1215
03/03/09	1450	2020	1571	1215
03/04/09	1422	1982	1599	1200
03/05/09	1460	2000	1561	1200
03/08/09	1479	2000	1570	1200
03/09/09	1450	2040	1580	1200
03/11/09	1430	2015	1545	1210
03/12/09	1406	2120	1560	1205
03/15/09	1415	2040	1535	1190
03/16/09	1435	1960	1534	1186
03/17/09	1426	1999	****	1185
03/18/09	1440	2000	1504	1206
03/19/09	1445	2001	1520	1195
03/22/09	1425	1981	****	1185
03/23/09	1490	2050	1590	1210
03/24/09	1455	2090	1575	1220
03/25/09	1465	2110	1582	1224
03/29/09	1499	2071	1580	1215
03/30/09	1499	2001	1535	1194
03/31/09	1487	2002	1550	1190
04/01/09	1477	2015	1560	1195
04/02/09	1487	2012	1591	1180
04/05/09	1437	2040	****	1180
04/06/09	1459	2100	1565	1200
04/07/09	1440	2085	1545	1155
04/08/09	1416	2155	1530	1178
04/09/09	1444	2190	1536	1170
04/12/09	1420	****	1570	1170
04/13/09	1426	2188	1560	****
04/16/09	1445	****	1560	1170
04/19/09	1427	2230	1561	1185
04/20/09	1431	2059	1570	1180
04/21/09	1450	****	1575	1208
04/22/09	1425	2080	1590	1195
04/23/09	1397	2060	1580	1195

04/26/09	1405	2131	1595	1180
04/27/09	1361	2100	1565	1145
04/28/09	1374	2100	1510	1130
04/29/09	1420	2100	1525	1152
04/30/09	1372	2100	1540	1155
05/03/09	1420	2100	1550	1145
05/04/09	1390	2145	****	****
05/05/09	1400	2199	1490	1115
05/06/09	1450	2156	1520	1157
05/07/09	1400	2240	1520	1190
05/10/09	1396	2284	1550	1205
05/11/09	1427	2325	1520	1205
05/12/09	1415	2190	1500	1195
05/13/09	1415	2147	1475	1195
05/14/09	1414	2174	1504	1172
05/17/09	1420	2125	1500	1172
05/18/09	1450	2167	1550	1180
05/19/09	1510	2243	1560	1224
05/20/09	1485	2200	1595	1209
05/21/09	1463	2200	****	1205
05/24/09	1451	2240	1580	1197
05/25/09	1482	2350	1585	1220
05/26/09	1549	2340	1620	1260
05/27/09	1600	2370	1685	1300
05/28/09	1600	2450	1853	1410
05/31/09	1590	2400	1705	1332
06/01/09	1520	2399	1705	1310
06/02/09	1520	2400	1700	1301
06/03/09	1535	2305	1703	1300
06/04/09	1535	2300	1690	1297
06/07/09	1516	2290	1699	1280
06/08/09	1475	****	1633	1245
06/09/09	1525	2315	1600	1208
06/10/09	1510	2300	1630	1220
06/11/09	1529	2300	1602	1215
06/14/09	1530	2300	1630	1215
06/15/09	1509	2345	****	1190
06/16/09	1495	2299	1610	1180
06/17/09	1520	2305	1580	1157
06/18/09	1540	2345	1605	1177
06/21/09	1520	2303	1615	1190
06/22/09	1505	2270	1585	1176
06/23/09	1495	2340	1590	1175
06/24/09	1505	2269	1593	1170
06/25/09	1501	2310	1590	1175

06/28/09	1500	2270	1580	1157
06/29/09	1495	2240	1550	1130
06/30/09	1482	2240	1545	1140
07/01/09	1490	2245	1545	1130
07/02/09	1480	2244	1540	1150
07/05/09	1626	2245	1530	1140
07/06/09	1570	2246	1589	1170
07/07/09	1545	2260	1590	****
07/08/09	1562	2300	1690	1160
07/09/09	1599	2300	1710	1212
07/12/09	1645	2305	1720	1236
07/13/09	1660	2310	1720	1280
07/14/09	1700	2400	1750	1300
07/15/09	1785	2448	1750	1379
07/16/09	1750	2455	1760	1388

(Source: www.nepalnews.com)

APPENDIX-2

Daily Indices of Commercial Banks and NEPSE

Date	Commercial Banks	NEPSE
07/16/08	1011.09	982.12
07/17/08	1024.9	991.91
07/20/08	1016.16	985.24
07/21/08	999.44	973.3
07/22/08	986.39	962.78
07/23/08	1001.81	972.47
07/27/08	1012.61	980.81
07/28/08	1014.07	983.07
07/29/08	1038.18	1001.99
07/30/08	1065.14	1020.05
07/31/08	1081.05	1034.02
08/03/08	1095.64	1047.67
08/04/08	1131.15	1075.34
08/05/08	1168.28	1102.1
08/06/08	1204.79	1128.13
08/07/08	1166.98	1101.36
08/10/08	1132.95	1075.51
08/11/08	1151.82	1088.91
08/12/08	1145.88	1085.03
08/13/08	1139.59	1079.58
08/14/08	1143.62	1084.76
08/18/08	1127.14	1075.87
08/19/08	1101.18	1057.53
08/20/08	1111.07	1064.28
08/21/08	1107.65	1062.24
08/24/08	1098.52	1057.36
08/25/08	1099.88	1068.17
08/26/08	1086.88	1087.8
08/27/08	1026.05	1086.19
08/28/08	1040.91	1119.65
08/31/08	1079.38	1175.38
09/01/08	1074.72	1134.39
09/02/08	1080.42	1102.39
09/03/08	1065.81	1064.01
09/04/08	1065.13	1067.2
09/07/08	1067.26	1071.08
09/08/08	1060.91	1058.64
09/09/08	1064.72	1051.2
09/10/08	1053.27	1029.85

09/11/08	1050.34	1028.5
09/15/08	1003.31	996.09
09/16/08	999.13	976.01
09/17/08	991.93	985.16
09/18/08	1011.8	1004.28
09/21/08	1010.81	976.81
09/22/08	1009.07	952.64
09/23/08	997.99	951.28
09/24/08	994.68	945.07
09/25/08	988.94	941.12
09/28/08	1002.44	954.6
09/29/08	1019.15	962.55
10/01/08	1031.82	970.23
10/05/08	1024.33	973.65
10/12/08	1017.61	969.56
10/13/08	1008.94	957.33
10/15/08	992.37	938.31
10/16/08	986.45	933.97
10/19/08	965.29	918.62
10/20/08	940.96	899.99
10/21/08	954.06	907.73
10/22/08	959.62	914
10/23/08	966.4	919.33
10/26/08	965.86	918.15
10/27/08	899.06	881.86
11/02/08	845.05	853.16
11/03/08	843.18	849.44
11/05/08	840.22	848.18
11/06/08	826.56	832.59
11/09/08	800.18	810.81
11/10/08	765.24	779.78
11/11/08	792.56	802.11
11/12/08	808.66	815.63
11/13/08	800.35	806.9
11/16/08	784.19	793.86
11/17/08	770.3	774.18
11/18/08	771.77	775.99
11/19/08	769.75	776.58
11/20/08	764.94	770.37
11/23/08	738.17	750.51
11/24/08	709.44	726.47
11/25/08	686.91	698.81
11/26/08	718.4	728.57
11/27/08	725.1	732.18
11/30/08	745.06	750.71

12/01/08	760.42	765.76
12/02/08	754.86	761.67
12/03/08	749.07	758.08
12/04/08	741.85	754.91
12/07/08	734.9	754.29
12/08/08	726.13	747.72
12/10/08	725.07	742.36
12/11/08	725.2	743.25
12/14/08	725.47	742.04
12/15/08	713.19	734.85
12/16/08	706.17	729.24
12/17/08	700.73	728.88
12/18/08	694.17	720.52
12/21/08	674.57	708.12
12/22/08	662.67	701.64
12/23/08	653.86	701.85
12/24/08	665.07	705.21
12/28/08	658.86	699.2
12/29/08	661.63	700.57
12/31/08	657.1	695.5
01/01/09	657.93	693.81
01/04/09	657.3	696.21
01/05/09	653.64	690.97
01/06/09	651.56	687.63
01/07/09	650.23	682.29
01/08/09	646.94	674.32
01/11/09	628.24	664.02
01/12/09	624.99	660.4
01/13/09	627.39	659.81
01/15/09	611.17	651.22
01/18/09	611.55	650.73
01/19/09	610.15	647.29
01/20/09	600.5	641.05
01/21/09	580.89	625.79
01/22/09	561.03	609.46
01/25/09	568.7	616.15
01/26/09	594.84	645.32
01/28/09	617.46	658.83
02/01/09	602.41	638.51
02/02/09	605.76	636.31
02/03/09	600.57	636.7
02/04/09	605.18	641.64
02/05/09	619.49	656.06
02/08/09	641.76	671.71
02/09/09	641.84	668.82

02/10/09	636.33	665.15
02/11/09	637.98	663.52
02/12/09	649.62	671.49
02/15/09	649.86	669.75
02/16/09	656.15	673.51
02/17/09	677.03	690.25
02/19/09	692.16	699.6
02/22/09	696.47	704.1
02/24/09	683.77	695.92
02/26/09	668.61	677.52
03/01/09	661.34	676.3
03/02/09	656.74	673.7
03/03/09	660.87	675.77
03/04/09	662.94	672.99
03/05/09	662.75	670.68
03/08/09	665.43	671.35
03/09/09	664.81	671.44
03/11/09	661.02	670.23
03/12/09	656.85	667.2
03/15/09	656.47	669.23
03/16/09	657.69	670.86
03/17/09	656.57	667.66
03/18/09	657.23	667.13
03/19/09	656.36	666.59
03/22/09	674.29	683.5
03/23/09	668.9	676.31
03/24/09	670.73	678
03/25/09	669.71	675.3
03/29/09	663.68	669.74
03/30/09	664.68	665.66
03/31/09	660.39	664.13
04/01/09	660.11	665.04
04/02/09	658.4	661.96
04/05/09	664.18	664.73
04/06/09	660.38	663.46
04/07/09	656.09	659.54
04/08/09	659.74	661.28
04/09/09	660.86	660.36
04/12/09	660.26	660.15
04/13/09	662.71	661.27
04/16/09	664.72	662.71
04/19/09	661.33	659.95
04/20/09	664.14	660.01
04/21/09	664.4	659.06
04/22/09	662.52	657.33

04/23/09	662.38	657.02
04/26/09	651.39	649.04
04/27/09	643.85	640.16
04/28/09	643.15	641.64
04/29/09	642.66	643.44
04/30/09	649.56	647.78
05/03/09	640.06	642.04
05/04/09	641.59	640.89
05/05/09	650.37	648.57
05/06/09	653.41	651.16
05/07/09	658.49	654.05
05/10/09	660.83	660.42
05/11/09	657.15	659.17
05/12/09	655.48	660.05
05/13/09	658.4	661.55
05/14/09	658.53	660.96
05/17/09	668.02	665.7
05/18/09	689.87	683.92
05/19/09	682.44	678.61
05/20/09	676.64	677.2
05/21/09	676.11	676.64
05/24/09	691.52	688.07
05/25/09	712.14	701.51
05/26/09	731.78	714.72
05/27/09	768.92	739.89
05/28/09	736.55	718.62
05/31/09	722.72	707.89
06/01/09	719.6	699.95
06/02/09	723.55	703.01
06/03/09	724.19	699.62
06/04/09	717.11	698.88
06/07/09	702.53	685.61
06/08/09	695.06	679.73
06/09/09	705.6	684.88
06/10/09	709.36	686.07
06/11/09	706.12	684.39
06/14/09	696.78	678.74
06/15/09	697.01	676.41
06/16/09	698.82	681.83
06/17/09	703.05	682.8
06/18/09	704.35	683.71
06/21/09	697.28	679.23
06/22/09	695.08	678.52
06/23/09	688.66	671.47
06/24/09	689.15	670.25

06/25/09	690.21	670.61
06/28/09	683.37	666.35
06/29/09	681.71	663.96
06/30/09	679.64	662.63
07/01/09	680.1	661.78
07/02/09	685.03	667.43
07/05/09	695.77	675.16
07/06/09	697.42	676.14
07/07/09	711.03	685.55
07/08/09	729.87	696.16
07/09/09	736.57	702.88
07/12/09	750.96	711.06
07/13/09	754.67	717.46
07/14/09	780.24	743.69
07/15/09	780.87	749.1

(Source: www.nepalnews.com)

APPENDIX-3

Names and Number of Observations of the Sampled Company (From July 16, 2008 to July 16, 2009)

S.NO	Name of the Company	No. of Observation
1	Bank of Kathmandu ltd.	234
2	Everest Bank ltd.	209
3	Himalayan Bank ltd.	205
4	Nepal Investment Bank ltd.	226
	Total	**874**

(Source: Based on Official Record of Daily Previously Closing Price of Share Transaction in NEPSE)

APPENDIX-4

Frequencies

Particulars\Bank Name	BOK	EBL	HBL	NIBL
No. of Observation	234	209	205	226
Mean	1778.42	2424.65	1890.57	1582.09
Std.Deviation	480.00	482.4	408.11	645.57
Variance	230400	232709.76	166553.77	416760.62
Minimum Share Price	1155	1855	1137	1003
Maximum Share Price	2809	3672	2720	3599

APPENDIX-5

Simple Regression

Amount on Public Issue

Model Summary

	Model
	1
R	.658(a)
R Square	.433
Adjusted R Square	.244
Std. Error of the Estimate	239.66728
F	2.292

Predictors: (Constant), AMT

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	437.647	158.294		2.765	.070
	AMT	.251	.166	.658	1.514	.227

Dependent Variable: NEPSE

Paid up Value

Model Summary

	Model
	1
R	.607(a)
R Square	.368
Adjusted R Square	.157
Std. Error of the Estimate	253.04370
F Change	1.747

Predictors: (Constant), PAIDUP

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	498.931	142.771		3.495	.040
	PAIDUP	.006	.005	.607	1.322	.278

Dependent Variable: NEPSE

Annual Turnover

Model Summary

	Model 1
R	.347(a)
R Square	.121
Adjusted R Square	-.172
Std. Error of the Estimate	298.47170
F Change	.412

Predictors: (Constant), TURNOVER

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	561.211	156.774		3.580	.037
	TURNOVER	.010	.016	.347	.642	.567

Dependent Variable: NEPSE

APPENDIX-6

Multiple Regressions

Model Summary

	Model
	1
R	.898(a)
R Square	.806
Adjusted R Square	.224
Std. Error of the Estimate	242.89970
F	1.384

Predictors: (Constant), TURNOVER, AMT, PAIDUP

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	43.217	504.705		.086	.946
	AMT	2.125	2.427	5.581	.876	.542
	PAIDUP	-.045	.074	-4.349	-.605	.654
	TURNOVER	-.019	.041	-.657	-.473	.719

Dependent Variable: NEPSE

APPENDIX-7

Daily Autocorrelation coefficient for Lag 1 to 10, having natural log difference 1

Name of the company	Lag days									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
BOK	-.033	-.111	-.043	0.38	-.120	.079	.055	.039	.049	-.030
EBL	-.068	-.062	.035	.093	-.1	.020	-.102	-.055	-.096	.017
HBL	.086	.038	.014	.057	.041	.238	.044	.102	-.046	-.063
NIBL	-.069	-.076	-.009	-.036	.101	.038	-.009	-.005	.044	.004

A. The underlying process assumed is independence (white noise).
B. Based on the asymptotic chi-square approximation.

APPENDIX-8

Distribution of Signs of Coefficients

Lag	Number of +sign	Number of -sign	Total
1	1	3	4
2	1	3	4
3	2	2	4
4	3	1	4
5	2	2	4
6	4	0	4
7	2	2	4
8	2	2	4
9	2	2	4
10	2	2	4
TOTAL	21	19	40

APPENDIX-9

Standard Error (S.E.) of the Stocks

Name of the company	Lag days									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
BOK	.065	.065	.065	.065	.065	.064	.064	.064	.064	.064
EBL	.069	.068	.068	.067	.066	.066	.065	.065	.064	.064
HBL	.069	.067	.067	.066	.066	.065	.065	.065	.065	.065
NIBL	.066	.065	.065	.064	.064	.064	.064	.064	.064	.064

a. The underlying process assumed is independence(white noise)

b. Based on the asymptotic chi-square approximation.