CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Due to globalization of economies and the market, the present world of economy has been more competitive and complicated. Every sort of change occurring in one sector of world affects the other. A healthy economy is dependent on efficient transfers of funds form people who are net savers to firms and individuals who need capital. Without efficient transfer the economy simply could not function. And economic efficiency is simply impossible without a good system for allocating capital within the economy. Nepal is one of the least developed countries in the world. It has predominantly a subsistence agricultural economy, which contributes about 40% of GDP and provides employment to more than 80% of the economically active population.

The Nepalese economy is in developing phase. It has been adopting planned economic development since four decades. Now, it has introduced liberal policy for the better improvement of the economy. However, any type of strategy or policy for development requires a steady supply of capital funds. So in orders to speed up the pace of development, financial sectors have crucial roles, as they pools scattered savings for capital formation. Financial markets and institutions are the key to the development of any economy, whether developed or developing. Developed economies usually already have a highly sophisticated financial market in place whereas developing economies usually have no or rudimentary institutions in place. During the turn of the century a lot of countries gave up the moribund communist style economy towards a modern capitalist economy. In this process a large number of financial markets have developed across the world, including in my home country Nepal. Capital formation is possible through capital market. It plays major role in the development of country.

Any types of capital requirements like long-term, medium-term or short-term etc, for organizational activities. Among such funds long-term funds are highly significant for future growth and prosperity. Capital requirements for the organization are mostly

managed through financial or capital market. Capital formation is the ultimate function of capital market. It transfers funds from those having surplus fund to those who need funds to invest in tangible assets (Fabizzu: 1992, 12). Capital market helps economic development by mobilizing long term capital needed for productive sector. The main objective of capital market is to create opportunity for maximum number of people to get benefits from the return obtained by directing the economy towards productive sector by mobilizing long term capital (Ojha, 2000: 1). Capital market plays crucial role in mobilization of a constant flow of saving and changing these financial resources for expanding productive capacity of the country and there by accelerating the pace of economic development. The growth of economy is tied with the growth of capital market in the country. It provides the best investment opportunities. “Further many profitable projects require long term venture capital to finance. Most investors tempt to provide risk and are reluctant to tie their saving into the long term commitment. Liquid stock market encourages savers to invest in the long-term projects because they can sell securities quickly and easily, if they want to get back their saving before the project matures. At the same time, companies receive easy access to capital through new issuance of shares” (Shrestha, 1996: 3).

Financial sector reforms in Nepal over the past ten years including the liberalization of interest rates, creation of the basic regulatory framework and development of long-term governmental securities markets have led to some significant improvements in the financial sector. In order to enhance the role of this sector, it is essential to flow the financial resources easily accessible and in a simple manner which would, in turn, help to achieve the desired results through various economic activities.

The paucity of capital has been one of the main causes for underdevelopment because any strategy for development requires a steady supply of medium to long-term capital funds. The supply of capital fund is possible through capital market. It is the capital market which is engaged in mobilization of idle saving in productive opportunity. For the mobilization of inevitable resources, capital market is an important means through which effective bridging of the deficit units and surplus units can be bridged. The expansion of any kind of business is almost impossible if there is insufficient capital. Thus, capital is one of the ingredients in the process of production. It is required to run any productive operation of the business. In this way, with the globalization and

increasing access to information a corporate business firm can not relay on its own resources only. Increasingly, it has to relay on innovative financing scheme with ample use of the capital market.

Development and expansion of capital market are essential for the rapid economic growth of the country. Capital market helps economic development by mobilizing long term capital needed for productive sector. The main objective of the capital market is to create opportunity for maximum number of people to get benefit from the return obtained by directing the economy towards the productive sector by mobilizing the long term capital (Ojha, 2000: 1).

In order to speed up the pace of development, financial markets have crucial roles, as they can pool the scattered savings for the capital formation. They are the intermediary link in facilitating the flow of funds from savers to investors. By providing an institutional mechanism for mobilizing domestic savings and efficiently channeling them into productive investments, they lower the cost of capital to investors and accelerate economic growth of the country. Financial intermediation between borrowers and savers is done by commercial banks. This credit market enables debt financing for investments. An alternative method of intermediation is through equity financing. This is only possible through the development of capital markets. Financial markets collect the scattered savings of the public and also provide the funds for the investors as in the form of loan to invest in the various productive sectors.

Every business enterprise requires short-term, intermediate term and long-term capital funds for the smooth operation and expansion of organizational activities. Among such funds, long-term funds are highly significant for future growth and prosperity. Most of the organizations generate these types of funds from financial market.
Financial markets are the centers that provide facilities for buying and selling of financial claims and services. It facilitates the transfer of funds from savers to those who with to invest in capital goods. In other words, money is channeled through financial markets from savers to borrowers. In doing so, the financial market provides a link between saving and investment. As a consequence, savers can earn higher returns from their savings instead of hoarding them, borrowers can execute their

investment plans to earn future profits, and both are better off. Financial market therefore facilitates real investments by acting as the source of information.

Financial markets perform four important economic functions. Firstly, they enable individuals to choose between current and future consumption more effectively. Borrowing enables individual to consume more, whereas leasing enable them to postpone consumption. This provides capital to companies in excess of those generated out to business income.

Second, the interaction between buyers and sellers, or, the return demanded by the investors in a financial market determines the price of the assets. Firms can raise further capital if the return of their investments exceeds the return demanded by investors.

Third, financial markets provide liquidity to investors. That is, the owner of the financial asset can sell off the asset in the market place to realize cash whenever required. The degree of liquidity may vary from asset to asset and market to market.
Fourth, financial markets can discipline under-performing managements. The prevailing stock price of a company reflects the opinion of all market participants regarding the outlook for the company under the current management. Financial market chiefly refers to money market and capital market.

Financial market consists of three principal participants. They are:-

i. Operating Sectors
ii. Financial Intermediaries
iii. Specialized Institutions

Operating sectors refer to the users and providers of the fund in the financial market. Individuals, organizations, government sector etc. are the major participants. We cannot imagine the financial market in their absence.

Financial intermediaries are the organizations that channel the savings of government, business, and individuals into loans/investments. Thus, they position themselves between investors and users of the fund. Their role is to accumulate funds from

various savers and lend to borrowers and they can actively participate in the money and capital market. They collect funds, analyze the risk and perform various legal and administrative functions required for lending and borrowing procedure. The participants under the financial intermediaries are Commercial Banks, Savings and Loan Associations, Co-operative Societies, Insurance Companies, Finance Companies, Provident Fund and Mutual Fund.

Special institutions facilitate the financial intermediaries for obtaining the funds. It also helps the final operating sectors (lender and borrower) for better and effective transfer of the funds. Such institutions may be Investment Bank. Development Bank, Organized Stock Exchange, Share Brokers and Dealers.

Financial market can be mainly divided into money market and capital market:
Money market may be defined as short-term financial markets, which facilitates liquidity and marketability of the securities. It is the market for the short-term marketable instruments having less than a year maturity period, even lower risk in comparison to other securities.

The development of an efficient money market requires the development of institutions, instruments, and operating procedures that facilitate widening and deepening of the market and allocation of short-term resources with minimum transaction costs and minimum delays (Pandey, 1970: 878). Thus, the money markets are the markets for short-term, highly liquid debt securities.

Capital market refers to the financial market in which long-term securities are traded. Securities having more than one year are traded in the capital market. Specifically, long term financial instruments such as stocks issued by corporation are traded in the capital market. It plays vital role in national economy. It renders very valuable services to the community by increasing the productive capacity of the country and there by accelerating the ace of economic development. In short, the growth of economy is tied with the growth of capital market in the country. Capital market facilitates the allocation of funds between saver and borrowers.

Capital markets, which deal with securities such as stocks and bonds, are associated with financial resource mobilization on a long term basis. Capital markets also allow for wider ownership among the public, thereby distributing risks and wealth amongst smaller investors. As such, capital markets help the economy to generate more savings and productive investments. A basic feature of an efficient capital market is constant liquidity, i.e., an easy mechanism for entry and exit by investors.

As the capital market is concerned with long-term finance, it consists of series of channels through which the savings of the community are made available for industrial and commercial enterprises and public authorities. It is mainly concerned with those private savings, individuals as well as corporate, those are turned into investments through new capital issues and also new public loans floated by the government and semi government bodies. In the capital market, demand comes from the agriculture, industry, trade, and government sector while supply comes from the individual or corporate savings, institutional investors and surplus of the government. Banks, investment companies, specialized financial corporations and stock exchanges are the some of the major participants of the capital market.

Securities prices play an important role by providing signals in allocating the scarce resources and investors can choose among the securities that represent ownership of the firm's activities under the assumption that securities prices at any time 'fully reflect' all available information. A market in which prices always 'full reflect' is called ‘efficient market’ (Fama: 383). If the capital market is efficient, the current market prices of companies fully reflect available information and there is no question of share price being under-priced and over-priced. The phenomenon of under over-valuation of shares is possible only in an inefficient capital market. An efficient capital market is an essential pre-requisite for the economic development of the country. But the development of the efficient capital market depends upon the availability of the savings, proper organization of the investors and regulation of investment etc.

In an efficient capital market, liquid asset will channel quickly and accurately where it will do the community most good. Such efficient market provides ready financing for worthwhile business venture and drain capital away from corporations which are

poorly managed or producing obsolete (no longer used) products. It is essential that a country should have efficient capital markets if that country is to enjoy highest possible level of wealth, welfare and education for its population (Bhalla, 1997:393). Thus, the efficient capital market always seeks for the available savings of the individuals and institutions and always looks for the investment in the new business ventures.

1.1.1 Securities Market

A security market can be defined as the place where securities (financial instruments are bought and sold. Alternatively, it is a mechanism bringing together buyers and sellers and financial assets in order to facilitate trading. Financial instruments may be in the form of government bonds, corporate bonds or debentures, ordinary shares, preference shares etc.

It is an important constitute of capital market. It has a wide term embracing the seller of securities and all the agencies and institutions that assist the sale of corporate securities (Rugh, 1966:50). Security market is the place where shares of listed companies are traded or transferred from one hand to another at a fair price through the organized brokerage system. In order to keep the price of the shares fair, there is a need of allocating capital efficiently and to maintain higher degree of liquidity in securities. Efficient stock market refers to the reflection over the price of the stock through all the available information. In other words, an efficient market is the one where the current price of the share gives the true worth of the share. Efficiency in the stock market implies that all available information regarding a given stock is instantly reflected in its price.

The heart of a strong economy lies in the stock market of the country. It is the medium through which scattered saving and scarce resource transferred into productive areas that ultimately help in economic development and industrialization of the nation. Stock market provides capital through the issuance of the shares. So even beyond providing capital for business firms, the stock market is a venue for the active circulation of money, and it gives people the opportunity to invest money and make gains. This provides the means for making interest rate gains or the extremely high long term profits that can be used for any purposes for individuals or institutions.

Liquidity of the stock market helps to make the investment less risky and more attractive, which encourages the savers to invest in the long-term projects. In such projects they can easily sell the securities quickly and easily, and companies also can have easy access to the capital through issue of new shares.

Securities market can be further divided into the primary market and the secondary market.

a) Primary Market

Primary market is the market in which securities are sold at the time of their first issue. Hence, the transaction of securities issued for the first time takes place in the primary market. The corporation selling the newly issued securities receives the proceeds from the sale in the primary market. The main function of the primary market is to provide financial capital available to make new investments in building, machinery, equipment, and stock of the goods. Primary market transfers the funds from the savers to the issuers of the stock. Such issuances of the new shares are made through the help of investment bankers. The volume of the new issue in the primary market, particularly of common stock, is directly related to market condition. When the market is rising, the number of new issues being offered to public and when the market is falling, the number declines (Shrestha, 1999: 2).

All the securities whether in the money or capital markets, are initially issued in the primary market. This is the only market in which the corporate or government issuer is directly involved in the transaction and receives direct benefit from the issue. That is, the company actually receives the proceeds from the sale of securities (Gitman, 2000: 33).

Securities available for the first time are offered through the primary securities market. The issuer may be a brand new company or one that has been in business for many years. The securities offered might be a new type for the issuer or additional amounts of a security used frequently in the past. The key is that these securities absorb new funds for the coffers (store of money, funds) of the issuer (Donald, 2000:19).

b) Secondary Market

Secondary market is the place where the existing securities are traded. Secondary market deals with previously issued shares mainly traded through stock exchange, over-the-counter market or direct dealing. It provides liquidity to the purchase of the securities. It is the center to convert stock, bonds, and other securities into cash immediately.

Secondary market simply, is market in which existing, already outstanding securities are traded between investors. It is the market that creates the price and allow for liquidity. If secondary market did not exist, the investors would have no place to sell their assets. Without liquidity many people would not invest at all. The corporations whose securities are being traded are not involved in secondary market transactions, and, thus, do not receive any funds from such a sale. (Brigham, 2001: 115).

The brokers perform major role in the secondary market while trading the security. They facilitate between the buyers and the sellers of the securities. The transactions are more in the secondary market than in the primary market. Buying securities in the secondary market is less risky.

1.1.2 Development of Securities Market in Nepal

Milestones in Nepalese Stock Market

1936	Introduction of Company Act.
1937	Floatation of shares by Biratnagar Juit Mills and Nepal Bank ltd.
1964	Issuance of government bond
1976	Establishment of Security Board
1984	Security Exchange Act became introduced
1992	First amendment of Securities Exchange Act
1993	Publication of Securities Exchange Regulations. Establishment of Securities Board of Nepal. Conversion of Securities Exchange Centre into Nepal Stock Exchange Ltd (NEPSE)
1995	First amendment in the Securities Exchange Regulations Guidelines for Registration and Issue Approval of Securities
1997	Second amendment to Securities Exchange Act, Securities Investment Trust Act
1998	Second amendment to Securities Exchange Regulation Securities Board disclose strategic plan for five years
2006	Use of circuit breakers to stop the price of a share from rising or falling sharply

2007	Replacement of open-cry-out trading system with fully automated screen-based trading system (ATS)
2007	Implementation of index based circuit breaker system
2008	NEPSE made OTC (over the counter) Bylaws with the approval of Security Board of Nepal
2008	NEPSE started trading of promoters share of listed company

Source: Business Age (2001) & NEPSE Publication (2008)

The history of the development of securities market in Nepal is not very old. The remarkable event in the development of securities market can be observed only after the enactment of Company Act for the first time in 1936. In 1937, the ordinary shares of Biratnagar Jute Mills Ltd. and Nepal Bank Limited were issued under the Company Act, 1936. Similarly the first issuance of government bond was in 1964.

The Nepalese capital market has its beginning with the establishment of the Securities Marketing Center in 1976. It was the first institution established for the purpose of developing the security market in the country. Initially, it was assigned the job for promoting secondary market for the government securities.

In 1983, the Securities Exchange Act was enacted with the objective of developing a market for stocks. Later in 1984, Security Exchange Act was promulgated and this institution was converted into the Securities Exchange Center (SEC) under the ownership of the HMG of Nepal, Nepal Rastra Bank (NRB) and Nepal Industrial Development Corporation (NIDC). The main function of SEC was to assist in the development of a capital market by performing the role of a broker, underwriter, and share issue and to sell government bonds. After the inception of the SEC, shares of various manufacturing, trading and banking companies were listed.

The real boost into the capital market in the form of private sector led growth began with the financial sector liberalization. In the mid 80's, Nepal opened its door to foreign investors as joint venture partners in the banking sector, which revolutionized commercial banking services in Nepal. Since then, a variety of private sector based financial institutions are evolved. In 1992, the Finance Companies Act was amended. These enabled finance companies to be established to function in various areas such as leasing, housing finances and hire purchases. These institutions were also allowed

to perform capital market functions such as share issues, portfolio management, market making and custodial services. The establishment of the Nepal Stock Exchange (NEPSE) complemented the growth of these financial institutions. In 1993, the Securities Exchange Act was amended then the SEC was converted into the NEPSE for securities trading under a program initiated to develop a competitive and efficient security market.

The basic objective of NEPSE is to arrange marketability and provide liquidity to the government and corporate securities by facilitating transactions in its trading floor through market intermediaries such as brokers, market markers and others (Bhattarai, 2002:7).

Securities Board of Nepal (SEBON) was established by the Government of Nepal on June 7, 1993 as an apex regulator body of securities markets in Nepal. It has been regulating the market under the Securities Ordinance, 2006 issued on September 23, 2006. The major function of SEBON is to build a dynamic, competitive, credible, fair, efficient, transparent and responsive securities market. The objective of the SEBON is to promote and protect the interest of investors by regulating the securities market. To regulate the securities market SEBON has enacted various securities laws, like: securities act 2006, securities board regulation act 2006, securities businessperson (broker, dealer, market maker, merchant banker) regulation act 2006, and so forth.
The Governing Board of SEBON is composed of seven members including one full time chairman appointed by the Government for tenure of four years. Other members of the Board include joint secretary of Ministry of Finance, joint secretary of Ministry of Law, Justice and Parliamentary Affairs, representative from Nepal Rastra Bank, representative from Institute of Chartered Accountants of Nepal, representative from Federation of Nepalese Chambers of Commerce and Industries, and one member appointed by the Government of the recommendation of SEBON from amongst the experts pertaining to management of securities market, development of capital market, financial or economic sector.

Stock Market is a recent phenomenon in Nepal. In the beginning of the organized open-out-cry system, there was a risk in stock market activities. The stock market probably has the greatest glamour and is perhaps, least understood. The sudden

market collapse in 1994 emphasized the need to correct several deficiencies in our financial system. Financial sector is comprised of the banks and other depository as well as non-depository financial institutions, money market and capital market.

The development of capital market is closely related with the modernization and development of financial system. The stock market had lost momentum reflecting concern that more fundamental measures were needed to put the economy and financial system on a path to recovery. HMG of Nepal initiated the policy of economic liberalization in 1985 and in the first phase, measures to reform financial sector were adopted. Joint investment in the banking sector was invited, interest rate was deregulated and various provisions as to the maintenance of capital adequacy ratio. Open market operation and exchange marketing intervention, loan loss provision and credit ceiling (limitation of credit) were made. Now, financial sector restructuring is broadly on tack (technique of securing) and the policy for corporate restructuring is largely in place. A strong financial development is underway. All these, along with privatization, the government have prompted further development of capital market in Nepal.

1.1.3 A Glimpse of Nepal Stock Exchange (NEPSE)

Nepal Stock Exchange, in short NEPSE, is established under the company act, operating under Securities Exchange Act, 1983. The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transactions in its trading floor through member, market intermediaries, such as broker, market makers etc. NEPSE opened its trading floor on 13th January 1994. Government of Nepal, Nepal Rastra Bank, Nepal Industrial Development corporation and members are the shareholders of NEPSE.

NEPSE has its own Board of Director (BOD) to direct, control and monitor. It consists of 9 directors in accordance with the Securities Exchange Act 1983. HMG of Nepal and different institutional investors nominate 6 directors and 2 form the licensed members. The General Manager of the NEPSE is the Ex-officio director of the board.

The authorized capital is 160 millions. It has increased its capital by May 2008. Similarly, subscribed/paid-up capital is 34.915 millions and issued capital is Rs. 50 million. HMG of Nepal, Nepal Rastra Bank, Nepal Industrial Development Corporation and licensed members subscribe Rs. 34.91 million. HMG of Nepal has contributed 58.67%, NRB 34.60 %, NIDC 6.13% and the licensed members 0.60% on its capital.

Members of NEPSE are permitted to act as intermediaries in buying and selling of government bonds and listed corporate securities. At present, there are 23 members brokers, who operate on the trading floor as per the Securities Exchange Act, 1983, rules and by-laws. Besides this, NEPSE has also granted membership to issue and sales manager securities trader (Dealer). Issue and sales manager works as manager to the issue and underwriter for public issue of securities whereas securities trader works as individual portfolio manager. At present there are 9 sales and issue managers and 2 dealers.

NEPSE had adopted an "open-out-cry" system. It means transactions of securities were conducted on the open auction principle on the trading floor. The buying broker with the highest bid will post the price and his code number on the buying column, while the selling broker with the lowest offer will post the price and code number on the selling column on the quotation board. The market maker quotes their bid and office price on their own board before the floor starts. Once the bid and offer price match, contacts between the buying and selling brokers or between the brokers and market markers are concluded on the floor. The rate of brokerage on equity transactions ranges from 1 percent to 1.5 percent depending on the traded amount.
NEPSE replaced the open-out-cry trading system with fully automated screen-based trading system (ATS) 24 August 2007, under the CFG project of the Nepal Government. The Asian Development Bank had provided US $ 300 thousand to automate the system. The system helps to eliminate all possible human errors of the open-out-cry system. Several international practices have been incorporated to make the system internationally applicable and modifications made to customize existing rules and regulations of the country.

Listing, which is one of the major functions of NEPSE, is a process of admitting different types of securities to be traded on the floor of the stock exchange. Listing is the first step towards the secondary market which provides liquidity and market ability to the scrip issued to he general public at the primary market. In 1994, NEPSE started its trading with 62 listed companies. From 2005 onwards government bonds are being listed and traded on NEPSE. At present there are 159 companies listed in NEPSE. Until now 47companies which didn't comply with the legal requirements have been de-listed from NEPSE.

The company which has to enlist the securities must have to furnish the documents along with listing and annual fees. The stock exchange goes through all these documents and if finds the listing is feasible and not against the interest of the nations make decisions to enlist. After making decisions, the proposal will be forwarded to the Board of Directors. Then they make through verification and if there is any enquiry the answers to such enquiries will be obtained from the concerned company. If the members of BOD are satisfied then only the company will be listed. The management of NEPSE must be satisfied that the issue has been made by satisfying all the rules and regulations and the terms and conditions, if any, give, by the concerned authorities. The structure of listing and annual fees is based on issued and paid up capital.

1.2 Focus of the Study

Business enterprises require tremendous amount of capital funds for smooth operation and regulation. Short-term, intermediate term and long term capital funds are essential for growth and expansions of organizational activities. Out of that, long-term funds are highly significant for future growth the prosperity of business organizations. Most of the organizations generate these funds from the financial market through issuing securities.

Securities market provides an effective way of procuring long-term funds by issuing shares and debentures/bonds for commercial enterprises and at the same time provides investment opportunity for individuals and institutions (Pradhan, 2004: 2).

In Nepal, there is a lack of wider investment opportunities that provide good return. Most of the public investors have not well enough knowledge about the real strength and weaknesses of the public companies in which they are going to invest or they are investing. In addition to it, they may not be able o analyze and interpret the real financial position of the firm on the basis of available data and information.

This study will be mainly focus on providing information to the individual, institution or potential investors about the movement of the stock prices or the behaviour of the share prices over the specific time period. This study may also show the efficiency of the stock market where they are going to make investment. On the basis of the findings of the study, investors can even restructure their investment portfolio for better return by taking timely correct investment decisions.

1.3 Statement of the Problem

Capital market investment in the present context of Nepal plays crucial role in the development of the country. The development of the capital market depends on the economic condition, savings, and investment opportunity etc.

Stock market is the backbone of the development of investment sector in the country. Promotion of the stock market facilitates the economic development by mobilizing funds into productive sectors through making appropriate investment. For analyzing investment environment, element like price trend, NEPSE index, volume of stock trend, rate of listing and signaling factors are crucial.

Although there are various institutions involved in the capital market, they are being unable to show better performance as expected by the investors. At the same time, the investors are making investments haphazardly without having proper and adequate knowledge about the securities of the certain companies. In the same way, most companies are found ignoring the investor's performance and not making transparency in information dissemination system and in its operation.

Economic imbalance, political instability influences the negative symbols in the economy. The prices of the securities especially common stock have been affects by political condition of the country. The very good example is, after the success of

recent historic Janandolan II, the stock markets shows the positive change, there was a brief rally upward in the market immediately after the restoration of the parliament (2063).

The problems of the Nepal stock market have not been well diagnosed and identified. The policy makers are not able to make the appropriate policy for the development of the stock market. Most of the government level efforts for the development of the stock market have poorly contributed. Political instability and interference, Maoist activity, Terai unrest, economic imbalances ineffective implementation of liberal economic policy are the main problems in the Nepalese stock market. The big challenges to international and domestic monetary policies is to separate the economies from the politics.

In Nepal, listing of securities in Stock Exchange Center (SEC) is recent phenomena. There are lots of problems in Nepalese stock market like: the basic problems of NEPSE market are centralized stock exchange located in Kathmandu valley, lack of motivation factors such as tax benefits special concessions to the investors, long clearing and settlement process, lack of professional investors, low trading volume of the stock, lack of proper information to the investors, high fluctuations in stock market prices, slow privatization process, lack of proper management in corporate level, government instability and policy, home war in the country, unavoidable circumstances like Nepal Banda, nakabandi in the country declared by the various parties like Maoists, political parties, poor corporate culture, unfair practices. There is a lack of co-ordination among concern authorities, market player and individuals. Due to such factors, there may be possibility for few individuals or institutions to manipulate the price of the securities and making undesirable practices.

Due to inadequate government policy, home war in the country, the prices of securities affects a lot. The low trading volume, absence of professional broker, early stage of growth, limited movement of shares price. Limited information to investors, price instability in the secondary market, lack of proper investment decision of the investors, price instability in the secondary market, etc are the burning issues in Nepalese stock market. Beside this the altitude of investors towards share investment in corporation to investment in other sectors such as buying land, house, gold and

other properties also affect the share investment decision of the investors. However, until the situation is improved and conducive environment is created, no market maker will be able to create and maintain stability in the stock market.

Regarding the share price behavior in the market and the market efficiency, there are various approaches available. According to the technical analysis, historical prices and trading of the stock provides clear picture of future price movement. However, fundamental analysis argues that selection of right stock is based on the intrinsic value of the stock.

On the other hand, efficient market theory argues that market is efficient in pricing the shares. In a situation, where stock price movement follows random walks and at every point in the time actual prices represent good estimate of its intrinsic values, general investors tend to select any security randomly to form his/her optimum portfolio (Fama, 1965: 40).

Thus, the study shall make an attempt to address the following issues:-

- What is the overall situation of the stock market in Nepal?
- Whether the price changes are random phenomenon or not?
- Whether the stock market is efficient or inefficient in pricing of shares?
- To what extent it is possible to predict future price movement based on the historical prices?
- What could be the reasonable price paid for a stock in the secondary market?
- Does the Random Walk Hypothesis exist in Nepalese stock market?

1.4 Objectives of the Study

The major objective of this study to analyze the stock market performance and the behavior of stock price of listed commercial banks in NEPSE (only the selected commercial banks for this study like:- Himalayan Bank, Nepal SBI Bank, Bank of Kathmandu, Nepal Industrial and Commercial Bank, Laxmi Bank, Kumari Bank, Lumbini Bank). However the other specific objectives of this study may be as follows:-

1. To analyze the behavior of stock price of listed commercial banks in NEPSE.

2. To analyze the efficiency of the stock market in pricing shares.
3. To determine whether the successive price changes of stocks are dependent or independent.
4. To examine whether the Random Walk Hypothesis exists in Nepalese stock market or not.
5. On the basis of the findings of this study, an attempt will be made to forward suggestions for the improvement of the Nepal Stock Exchange.

1.5 Significance/Importance of the Study

In the Nepalese context, there is a lack of wider investment opportunities that provides good rate of return. There has still been a huge amount of unutilized saving funds with the general public. The investors are attracted by the increasing trend of market price per share of public companies mainly of the joint venture commercial banks. They are investing their saving funds in the common stocks of the public companies with the expectation of high capital gain in the future.

The stock market efficiency is the major part in the investment management if the imperfections are prevailed in the stock markets then the investor can utilize them to achieve handsome return. So, there is a need of analysis, whether the stock market is efficient or not. For the purpose, this study attempts to apply the efficient market hypothesis approach. But most of the public investors, i.e. existing and potential investors don't process to get knowledge about real financial strengths and weaknesses of the public companies in which they are going to invest or investing their funds. Further they cannot well analyze and interpret the actual financial position of a company on the basis of available data and information to reach the right conclusion.

Lots of study has been conducted previously to measure the performance of the company listed in the security market. Separately some studies have also been conducted to study the stock price behavior. This study, no doubt, will have importance to all parties involved in the stock market. It will be helpful to the stock market in Nepalese context. Further, I will add little worth to those who want to conduct a research work in related topic. This study is assumed to be helpful to the

financial manager of corporate firms to know about the behavior of their share price with respect to the changes in financial position of the firm.

1.6 Limitation of the Study

This study attempts to analyze the efficiency of Nepalese stock market and determine the stock price behavior of sampled listed commercial banks in Nepal. Due the various difficulties, this study will be accompanied by some limitations.

Basic limitations of these studies are as follows:-

1. The major portion of analysis and interpretation is based on the available secondary data and information. So, the consistency of findings and conclusions will be strictly based on the reliability of the secondary data and information.
2. This study is concentrated on the banking sector, which is just a part of total capital market. The conclusion might not be generalized on the total market.
3. This study only deals with selected commercial banks.
4. For the purpose of study, only the common stocks or an ordinary stock is taken.
5. This study carries out only a period from year 2001/02 to year 2008/09 trend of commercial banks.
6. Time constraint and financial constraint will be the major limitations of the study.
7. This study has been done for the partial fulfillment for the requirements of M.B.S. Degree in Management.

1.7 Organization of the Study

This study has been organized into five chapters in order to make the study easy to understand.

Chapter - I: Introduction

This chapter deals with introduction part of the study. It includes background of the study, focus of the study, statement of the problem, objectives of the study, significance/importance of the study, limitation of the study and organization of the study.

Chapter - II: Review of Literature

This chapter reviews the available literature which is concerned with this study. It includes conceptual framework, review of previous studies both in foreign and Nepalese context, review of published articles in journals/books, review of unpublished master degree dissertation.

Chapter - III: Research Methodology

This chapter includes research design, population and sample, nature and sources of data, sample commercial banks, period covered in the study, hypothesis of the study, test methodology and data analysis tools (i.e. statistical tools).

Chapter - IV: Data Presentation and Analysis

This chapter deals with the presentation and analysis of the available data using various research methodologies. It includes number of listed companies in NEPSE, comparative analysis of NEPSE index and commercial banks index, group-wise annual turnover, trading performance of sample stocks, graphical analyses of stock price behavior of sample commercial banks, serial correlation analysis, runs test analysis and volatility of daily stock prices of sample stocks. At the end of the chapter, it covers the major findings of the study.

Chapter - V: Summary, Conclusions and Recommendations

This is the last chapter of the study. It deals with summary, conclusions and recommendations. It presents the overall summary and conclusions of the study with necessary suggestions and recommendations to the concerned authorities, companies, investors and forthcoming researches.

CHAPTER - II

REVIEW OF LITERATURE

During the Last three decades a number of studies have been conducted to examine and test the efficient market hypothesis (EMH) in its weak form and semi–strong form in developed stock markets and a few in India. Efficient market hypothesis cannot be directly tested. However, by postulating some security price behavior that is implied by market efficiency one can do so. Over the years, professionals and experts have been concerned with development and testing model of price behavior. The past price variation in general market of shares will or will not be meaningful information in forecasting the future behavior of price variation. Various theories were developed in the past to handle the above-mentioned problem.

The objective of this chapter is to review some of the basic literature on share price behavior concerning theories including review of empirical evidences of previous studies.

In this chapter, an attempt has made to analyze the theoretical literature relating to the topic. Specially, this chapter covers theories related with the stock market efficiency and share price behaviors. To make the review simple and systematic, this chapter has been divided into four sections.

The first sections of this chapter describe conceptually the security analysis and behaviors of share prices. It includes the classical approach (technical analysis and fundamental analysis) and efficient market theory approach. The second and third sections of this chapter is devoted to review those related literature carried out previously in the foreign context as well as in the Nepalese context respectively. And finally, the fourth sections identifies the research gap among the others researches.

2.1 Conceptual Framework

Security analysis is the major step of the investment process. It involves the function of examining several individual securities or group of securities within the broad

categories of various securities. The purpose behind the security analysis is to identify whether the particular security is miss priced or not. There are numerous reasons that cause the share price fluctuation. Among them are economic, non-economic and other factors. The prices of securities are typically very sensitive, responsive to all events, both real and imagined, that cast into the murky future (Cootner, 1964: 1). Though all factors give rise to the observed movement of share prices, it would be very hard to find a completely accepted price formation theory. Before describing the random walk-efficient market theory, it would be proper to explain the firs two conventional theories, viz. technical analysis theory and fundamental analysis theory.

a. Classical Approach
b. Efficient Market Theory Approach

Classical approach considers the market as inefficient whereas the efficient market theory approach considers the market as efficient.

2.1.1 Classical Approach

Classical approach regarding the share price behavior can also be classified into two groups. One is technical analysis and another is fundamental analysis.

2.1.1.1 Technical Analysis

The Technical Analysis theory of share price behavior is based on past market information. On the assumption that history tends to repeat itself, it is believed that knowledge of past patterns of share prices will help to predict future prices under similar circumstances. It involves the study of past market behavior with reference to various financial and economic variables to forecast the future. Financial and economic variables do change, but these variables are to be adjusted in the light of the present situation. Charles Dow is the greatest protagonist of this theory. Since the followers of this theory anticipate future share prices on the basis of charts and graphs of past movements in prices, this approach is popularly known as Chartist Approach. Thus, under this approach technicians are interested to interpret the past trend to predict the future prices of equity shares.

Technical analysis theory includes study of past price and volume data of stocks to forecast future price movements. Technical analysts practice a highly specialized

form of market analysis. They try to predict future stock prices just as we might predict that the pattern of wallpaper behind the mirror is the same as the pattern above the mirror (Malkiel, 1981: 129). The underlying philosophy of technical analysis is that the price of a stock depends on supply and demand in the market and has little relationship to intrinsic value, as fundamentalists believe it to be. Technical analysis tools are designed to measure supply and demand. The basic assumption of technicians is that history tends to repeat itself. In statistical terminology, the stock market technician relies upon the dependence of successive price changes (Levy, 1966: 83). That is, they assume that the historical behavior of a security price is rich in information concerning its future behavior.

Technical analysis is based on the widely accepted premise that security prices are determined by the supply of and the demand for securities. The tolls of technical analysis are therefore are designed to measure the certain aspects of supply and demand (Francis, 1991: 521).

The methodology of technical analysis rests upon the assumption that history tends to repeat itself in the stock exchange. If a certain pattern of activity in the past produced certain results nine times out of ten, one can assume a strongly likelihood of the same outcome whenever this patterns appears in the future. It should be emphasized, however that a large part of the methodology of technical analysis lacks a strictly logical explanation (William, 1975:297).

Technical analysis can be defined as the use of published market data for the analysis of both the aggregate stock market and individual stocks. It is sometimes called market or internal analysis (Jones, 1988: 296). Technically, technical analysis record historical financial data on charts, study these charts in search of patterns to predict future prices. Some charts are used to predict movement of market index and still others are used to predict the action of both individual assets and the market (Francis, 1991: 522). Thus, the technical analysis can tell whether the price of a share is on upswing or on the downswing in future (Palat, 1991: 172).

The most important part of technical analysis is based on charts and graphs. These are: bar point and figures charts, moving average and other trend lines, relative

strength measures, odd lot data and various other measurements (Heaton, 1977: 12). The existence of technical analysts in Nepal may be still doubtful.

With the applications of various technical analysis tools(The Dow Theory , Barron's Confidence Index, Odd Lot Theory, Charts, Breadth Of Market , and Moving Average), the technicians attempt to predict future stock prices by analyzing past behavior of stock price. Such tools are explained below:-

a) Dow Theory

This tool originated by Charles Dow, founder of the Dow Jones company, is one of oldest and most famous technical method of analyzing security prices. The aim of the Dow Theory is to identify long-term trends in stock market prices." According to this theory it is believed that the market is always considered as having three movements, all going at the same time. The first is narrow movement from day by day. The second is the short swing, running from the two weeks to a month or more; the third is the main movement, covering at least 4 years duration." (Francis. 1900). So, we can say that there are three forces simultaneously affecting the stock prices, basically called primary or major trend, secondary or intermediate trend, and finally minor trends. The primary price movements are held to constitute the bearish or bullish trends, whereas the secondary movements are regards as passing phases. Minor trend is daily price fluctuations to which Dow attributes to no significance or ignores the role of this trend.

The forecasting result of Dow Theory is less accurate. It might work only when a long, wide, upward or downward movement is registered in the market. It is mostly unsuitable as a market predictor when the market trend frequently reverses itself in the short or the intermediate –term. This theory also fails to explain a consistent pattern of the stock price movements.

b) Barron' Confidence Index

In literal sense, the confidence index is defined as the ratio of high-grade bond yield divided by low-grade bond yields. The ratio is supposed to reveal how willing investors are to take investment risks. Barron's confidence index is constructed by using Barron's index of yield on high-grade bonds and low-grade bonds.

The confidence index is usually, but not always, a leading indication. Like most of other technical indicators, the confidence index may sometimes issues erroneous signals and should therefore not be used without confirming evidence from other indicators (Francis, 1991: 531).

c) Odd Lot Theory

This theory concerns the purchase and sales of securities by small investors. These investors do transaction of less than 100 shares. Some technicians take the ratio of this odd lot purchase to odd lot sales as an indicator of the direction of future prices. An increase in the index suggests relatively more buying; a decrease indicators relatively more selling. During most of the market cycle, odd looters are selling the advance and buying the declines.

Odd looters try to do the right thing most of the time; that is, they tend to buy stocks as the market retreats and sell stocks as the market advances. However, technicians feel that odd looter is inclined to do the wrong thing at critical turns in the market (Ronald, 1995: 515).

d) Charts

It uses the three basic types of charts they are bar chart, point chart and figure charts. Line charts are used to connect successive day's closing price. Bar are used to spoon the distance from the day's highest price to the day's lowest price. A small cross on the bar makes the closing price. Point charts and figure charts are made on "X" s and "Y" s, which are more complex than line charts and bar charts. Point figure charts are used not only to detect reversal trends but also to make price forecasts, called price targets.

e) Breadth of Market

It tries to measure the strength of the market's upward or downward movement. Daily newspapers report the number of issues that advance and decline in price each day in the various exchanges. Technicians try to maintain the clear direction of the underlying market's movement by studying net advances; they try to determine the market's trend.

f) Moving Average

It is used by technicians who focus on the moving average of the price. It is used to provide a smooth stable reference point against which daily fluctuations can be gauged. Moving average analysis is used for individual securities and market indexes.

2.1.1.2 Fundamental Analysis

One very important theory on the investment management is that of Fundamental (intrinsic value) Analysis. Fundamental analysis is the method to evaluate the true worth of the stock by analyzing the financial data and information of the issuer. Fundamental analysis is mainly focused on the prospectus, annual and quarterly reports of the issuer as well as any available current news relating to the issuer. It also studies the issuer's income and expenses, assets and liabilities, management and position in its industry.

The fundamentalists are of the opinion that the value of a share depends upon the anticipated future stream of returns and corresponding capitalization rates. The capitalization rate is an appropriated risk related cost of equity. Therefore, value of share, under this model, is equal to the present value of future incomes from an equity discounted at risk adjusted capitalization factor. It requires full disclosure of financial and economic information. If the dissemination of information is not regular, reliable and complete, the market value of shares cannot be properly ascertained. Two models are popularly used under this theory e.g., Earnings Capitalization Model and Dividend Capitalization Model. The market price of share is based on its intrinsic value. The shareholder would like to maximize the return by buying shares of the under-valued company and selling shares of the over-valued company. Buying pressure would increase the price of under-valued company and selling pressure would decrease the price of over-valued company until the equilibrium price is restored.

Fundamental analysis is a stock valuation method that uses financial and economic analysis to predict the movement of stock prices. It is performed on historical and present data, but the objective is to predict future stock prices or business performance. It is based on determining the stock prices on the basis of the earnings made by the company and dividends declared by the company. It provides the intrinsic value of the stock and facilitates the investors whether to buy or sell the

stock. Such intrinsic value of the stock will be the true value after analysis of the financial performance of the company.

Fundamental analysis involves making investment decisions based on the examination of the economy, an industry and company variables that lead to an estimate of value for an investment, which is then compared to the prevailing market price of the investment (Frank, 2000: 869-870).

Fundamental analysis use public information to calculate a fundamental value for a share, and then offer investment advice by comparing the fundamental value with the current market price. Fundamental analysis is not possible if capital markets are semi-strong form efficient, since security prices will already fully and fairly reflect all publicly available information (Watson, 1998: 31).

In its simplest form, fundamental analysis begins with the assertion that the true value of any financial asset equals the present value of all cash flows the owner of the asset expects to forecast the timing and size of these cash flows and then converts the cash flows to their equivalent present value using an appropriate discount rate (Sharpe, 2000: 12).

Fundamental analysis approach involves study of various factors like economic influences, industry factors, firm's financial statement and company information like product demand, earning, dividends and management performances to calculate an intrinsic value of the security. Under this theory, the investor should only analyze such fundamental factors that may enable them to select the undervalued the future of the company.

When the investors estimate the true value of the stock after correct analysis, then it should be compared with the current market price of the stock to determine whether the stock is correctly priced or not. Stocks whose true value of estimated value is less than their current market price are known as overvalued and stocks whose true value or estimated value is more than their current market price are known as undervalued.
The assumption of the fundamental analysis approach is that at any point in time an individual security has an intrinsic value, which depends on the earning potential of

the security. The earning potential of the security depends in turn on such fundamental factors as quality of management, outlook for the industry and the economy etc. through a careful study of these fundamental factors the analyst should in principle, is able to determine whether the actual price of a security is above or below its intrinsic value. If actual prices tend to move toward intrinsic values, then attempting to determine the intrinsic value of a security is equivalent to making a prediction of its future price; and this is the essence of the predictive procedure implicit in fundamental analysis.

Fundamental analysis always seeks for new information before other investors. A fundamental analyst uses different models to estimate the true or estimated value of the stocks for making appropriate investment decision, such models are Top – Down versus Bottom-Up forecasting, probabilistic forecasting, econometric models, financial statement analysis etc.

The investor who uses Top-Down forecasting model, starts his analysis with global economic, including both international and national economic indicators, such as GDP growth rates, inflation, interest rates, exchange rates, productivity, and energy prices. He narrows his search down to regional \industry analysis of total sales, price levels, the effects of competing products, foreign competition, and entry or exit from the industry. Only then does he narrow his search to the best business in that area. The Bottom-Up investor starts with specific businesses, regardless of their industry/region. There are some limitations behind the fundamental analysis.

They are as follows: -

i. The analysis and information may be incorrect.
ii. There is a chance of disguising the real return of the company backed by various reasons and with the help of new/innovative accounting systems.
iii. The fundamental analyst may not be fully able to understand the economy of the industry due to the existence of other various external factors.
iv. The entire fundamental analysis is based on a rational scientific analysis of data that the market is rarely rational.

The available information relating to the price of the stock changes overtime. Due to that cause, the price of stock also changes. This means the fundamental analyst should always analyze the affecting factors and estimate the true value of stock in order to make correct investment decisions and get appropriate return. Therefore, fundamental analysis is the never-ending process.

2.1.2 Efficient Market Theory Approach

In a competitive market, the equilibrium price of any goods or services at a particular moment of time is that the available supply is equated to aggregate demand. This is the true worth of the goods or services, based on all publicly available information. The new equilibrium price will hold until another bit of information is available for analysis and interpretation.

When security prices at all times rationally reflect all available, relevant information, the market in which they are traded is said to be efficient. This implies that any new information is coming to light, which bears on a particular firm, will be incorporated into the market price of the security. An efficient capital market is one in which security prices adjust rapidly to the arrival of the new information and therefore the current prices of securities reflect all information about the security.

An efficient market is one where shares are always correctly priced and where it is not possible to outperform the market consistently except by luck (Richard, 1996: 41). In an efficient capital market, current market prices fully reflect available information. Therefore, if market is efficient, it uses all available information in setting price.

An efficient market is defined as the market where large numbers of rational investors actively compete with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants. In an efficient market, competition among any intelligent participants leads to situation that at any point of time; actual prices of individual securities reflect the effect of information based on both an events that have already occurred and events which the market expects to take place in the future. In other words, in an efficient market at any time the actual price of a security will be a good estimation of intrinsic values (Fama, 1970: 384).

There are several concepts and degrees of market efficiency depending on the market. Generally market is efficient when:

a. Prices adjust rapidly to new information;
b. There is a continuous market, in which each successive trade is made at a price close to the previous price (the faster that the price responds to new information and the smaller the difference in price changes, the more efficient the market);
c. The market can absorb large amounts of securities without destabilizing the prices (Geoffrey, 1998:420).

The requirements for efficient securities market are as follows:-

- A large numbers of rational, profit maximizing investors exist who actively participant in the market by analyzing, valuing and trading stocks. These investors are price takers: that is, one participant alone cannot affect the price of a security.
- Information is free of cost and widely available to market participants at approximately the same time.
- Information is generated in a random fashion such that announcements are basically independent of one another.
- Investors react quickly and accurately to the new information, causing stock prices to adjust accordingly (Charles, 1998: 425).

In an efficient market, all prices are correctly stated and there are no bargains in the stock market. “Efficiency” in this context means the ability of the capital markets to function so that prices of securities react rapidly to information. Such efficiency will product prices that are appropriate in terms of current knowledge and investors will be less likely to make unwise investments. A corollary is that investors will also be likely to discover great bargains and thereby earn extraordinary high rates of return (James, 1973: 3).

The degree of market efficiency has important implications for the economy and for investment decision makers. In an economic sense, it is important that security provide accurate signals that can be used to allocate capital resources correctly. Mispriced securities would result in incorrect allocations of capital (Edward, 1992:

746). Although efficient market may be vital and pleasing from an economic perspective; it presents complexity to investors in terms of an appropriate investment strategy.

An efficient market is an assumed perfect market where are many small investors, each having the same information and expectations with respect to securities; there are no restrictions on investment, no taxes and no transaction costs; and all investors are rational, view securities similarly, and are risk – averse, preferring higher return and lower risk (Gitman, 2000: 265).

In an efficient market, liquid capital will channel quickly and accurately where it will do the community the most good. Efficient market will provide ready financing for worth while business venture and drain capital away from corporations that are poorly managed or product obsolete product. One of the main reasons that some underdeveloped countries do not advance is that they have inefficient capital markets, where price may be fixed or manipulated rather than determined by supply and demand.

If new information becomes known about a particular company, how quickly do market participants find out about the information and buy or sell securities of the company on the basis of the information? How quickly do the prices of the securities adjust to reflect the new information? If prices respond to all relevant new information in a rapid fashion, we can say the market is relatively efficient. If, instead the information disseminates rather slowly throughout the market, and if investors take time in analyzing the information and reacting, and possibly overreacting to it, prices may deviate from values based on careful analysis of all available relevant information. Such a market could be characterized as being relatively inefficient (Robert, 2001: 573).

There are three forms of efficient market hypothesis based on type of information used in making market decisions. They are:

i. Weak-form efficiency,
ii. Semi-Strong form efficiency and
iii. Strong-form efficiency.

The difference between these forms relates to what extent information is reflected in the stock prices. Under the weak form, stock prices are assumed to reflect any information that may be contained in the past history of the stock price itself. This hypothesis holds that no investor can earn excess returns by developing trading rules based on historical prices or return information.

Weak-form efficiency suggests that at a minimum, the current price of a stock reflects the stock's own prices. In other works, studying past prices in an attempt to identify mispriced securities is useless if market is weak- form efficient. Although this form of efficiency might seem rather mild, it implies that searching for patterns in historical prices that will be useful in identifying mispriced stocks will not work (Stephen, 2003: 407).

Under the semi-strong form, all publicly available information is pre-assumed to be reflected in securities prices. This includes information in the stock price series as well as information in the firm's accounting reports. The reports of competing firms announced information relating to the state of the economy, and any other publicity available information relevant to the valuation of the firm (Haugen, 1999: 575).

This form of efficiency is the most controversial. The reason is, it implies that a security analyst who tries to identify mispriced stocks using financial statement information is wasting time because that information is already reflected in the current price (Ross, 2000: 407).

The strong-form takes the notion of market efficiency to the ultimate extreme. This form includes private information as well as publicly available information. Under this form, those who acquire private information buy or sell the stock. Their actions affect the price of the stock, and the price quickly adjusts to reflect the inside information. (Haugen, 1999: 573).

One obvious way to check the validity of the strongly efficient market hypothesis is to examine the profitability of traders in securities made by insiders to see if the insider's access to valuable information allows them to earn statistically significant trading profits (Francis, 1991: 558).

2.1.2.1 The Random Walk Theory

The Random Walk Theory assumes that all future streams of incomes from the equity investment are independent of preceding incomes. In other works, future prices cannot be predicted on the basis of past price behavior. The share prices fluctuate randomly, however, this does not mean that the market is irrational in the determination of prices. It operates through market mechanism. In a free and competitive market, the relative forces of demand and supply determine share prices. The so-called efficient market automatically adjusts the prices of shares since the market is very sensitive. Any discrepancies in the market are automatically corrected and actual prices fluctuate randomly about its intrinsic value. This is a free and most competitive market and the prices of shares in the market are assumed to reflect all relevant information.

Nepalese stock market is not efficient enough to evaluate the prices of stocks. Most of the investors are not very responsive to many financial and economic changes. But it has been felt that they invariably respond to the dividend incomes, earnings per share, capitalization of profits to issue bonus shares and issue of right shares. In such a situation, share prices of the company starts going up steadily. The leakage of secret information in the share market from inside the company called insider trading also sometimes raises share prices upwards. But this is a temporary phenomenon; when the company discloses the information, the price is automatically corrected in the market. There is no doubt that their demand and supply affect the price of shares in the stock market. When there is a tendency of rising prices in the market, the supply of shares will be increased; and in contrast, when the prices are falling, investors would demand more of the shares to buy, other things remaining the same. But because of the lack of reliable and regular disclosure of market information and lack of awareness and technical knowledge amongst the vast majority of investors to read and analyze the financial information, the market is non-competitive and inefficient.

Random walk theory describes whether past prices can predict future prices. “Random walk theory implies the future path of price level of security is no more predictable than the past of series of cumulated random numbers. The series of price series has no memory; i.e., the past cannot be used to predict the future in any meaningful way” (Fama, 1965: 34). It means that the current size and direction of price changes are independent and unbiased outcome of previous prices.

The underlying theory of random walk in stock price behaviour statistically consists of two separate assumptions;

a. Price changes are independent random variable,
b. Price changes conform to some probability distribution without specifying the particular shape or form of the distribution.

Of the two hypotheses independence is much more important assumption which means that the previous price changes following the current change will not be influenced by the sequence of preceding price changes. Mathematically, independence means that:

$$P_r\ X_t\ X\frac{X}{X_{tZ1}, X_{tZ2}, ..., X_{tZn}}\ XP_r fX_t\ XXA$$

Where, left hand side of the equation is the conditional probability - that the price will take the value of X conditional upon knowledge of previous changes, X_{t-1}, X_{t-2}, …….,X_{t-n}. The right hand side is the unconditional probability that price change in 't' will take the value of X.

Independence is of course an important property of random walk theory. However, this precise property must be satisfied in order to make the theory as a valid representation. But there lacks a perfect independence situation by the application of any statistical tools in general market. "Independence assumption of successive price change can be justified, if any outcomes produced by the tests that cannot allow the investor to beat the return provided by the market averages, then one can refer that the independence hypothesis of the random walk theory is accepted as law governing the behavior of price series."

The stock market is always subjected to a steady inflow of information, much of which will have an effect on the set of anticipations that constitutes price of a particular security. Some of the information has a whole market-wide impact such as change in monetary and fiscal policy on security prices. Some other information has influence upon a group of stock price i.e. industry -wide impact. And still some

information such as announcement of dividend, bonus shares may have an influence on the price of a particular security i.e. company-wide impact (Benjamin 1966: 136). There are some participants who estimate the intrinsic value of the individual securities from the received information. “The existence of intrinsic value for individual securities is not consistent with random walk hypothesis” (Fama,1965: 36). In the market, Securities are over or under valued because of inappropriate estimation of the incoming information by the investors. This means, there is gap between the actual price and the intrinsic value of a particular security and this can be used by the speculator to evaluate the influence to improve his prospects of gain.

Any distribution is consistent with the theory of random walk as it is correctly characterizes the process generating the price changes. The distribution of price changes provides descriptive information concerning the nature of the process generating price changes. The shape of the distribution provides help for the investor while committing his funds for particular security. Thus, by the careful analysis of distribution of price changes by the powerful statistical theory one can get important information either he may be investor, trader, market analyst or researcher.

The random walk theory says nothing more than that successive price changes are independent. This independence implies that prices at any time will on the average reflect the intrinsic value of the security. If a stock’s price deviates from its intrinsic value because, among other things, different investors evaluate the available information differently or have different insights into future prospects of the firm, professional investors and smart non professionals will seize upon the short term or random deviations from the intrinsic value, and though their active buying and selling of the stock in question will force the price back to its equilibrium position (Ronald, 1995: 539).

If the random walk hypothesis holds, the weak form of efficient market hypothesis must hold (though not vice-versa). Thus evidence supporting the random walk model is evidence supporting weak form of efficiency (Edwin, 1991: 404). If prices follow a random walk model, price changes overtime are random (independent). The price change for today is unrelated to the price change on previous days. Any new information arrived randomly in the market results in the random changes in the

prices. Random walk theory that involves random selection of securities is represented as the modern approach to investment decision.

2.2 Review of Previous Studies: A Foreign Context

Scholars have been studying the way security price fluctuate for over a century. “The empirical evidence in the random-walk literature existed before the theory was established. This is to say, empirical results were discovered first, and then an attempt was made to develop a theory that could possibly explain the results. After these initial occurrences, more results and more theory were uncovered. This has led then to a diversity of theories which are generically called random-walk theory (Ronald, 1995: 539).

The pioneer work in this field is hue to French mathematician **Louis Bachelier** (1900) who used the data of commodity price during the period of 1894-1898. He concluded that commodity speculation in France was “fair game” that has expected profits for buyers and sellers.

Additional evidence that security prices followed a random walk was found by:
Halbrook Working (1934), “*A Random Difference series for the use on analysis of time series*”, according to him, “It has several times been noted that time series commodity possess in many respects the characteristics of series of cumulated random numbers. The separate items in such time series are by no means random in character, but the changes between successive items tend to be largely random.”

Kendall (1953), “*The Analysis of Economic Time Series*”, examined the behaviour of weekly changes in nineteen indices of British Industrial share prices and spot prices for cotton (New York) and wheat (Chicago). He found no relationship between share price changes in the current week and previous week. After extensive analyses of serial correlations, he suggested that “the series looks like a wandering one, almost as if once a week the demon changes drew a random number from a population of fixed dispersion and added it to the current price to determine the next week’s price.”

H.V.Roberts (1959), “*Stock Market Patterns & Financial Analysis*”, compared Dow Jones Industrial Index with stipulated price index generated on the basis of series of

random numbers for 1956. He found considerable similarity in the graphs of these two series and it was difficult to distinguish between the series of random numbers and the stock market index. Thus, concluded that random movement of the past prices index cannot be used to forecast future share prices. His work was important in that he gave a number of methodological suggestions for testing what he calls the chance model. In particular, he suggested runs analysis for testing independence of price changes.

In another study of 1959, Osborne reported a very high degree of conformity between the movement of stock prices and the law governing "*Brownian Motion*" (Brownian motion explains the motion of particles in the solution where movements of different magnitudes may occur at any time, no dependent of any prior movements) which in fact, supports the RWH.

A.B. Moore examined weekly price changes of 29 randomly selected stocks for 1951-58 and found average serial correlation coefficient of -0.06. This value is extremely low, indicating that data on weekly changes are valueless in predicting future changes. The interpretation of his test is that a low coefficient estimate suggests that previous price changes do not provide any reliable information in estimating future price changes.

Samuclson (1965), "*Proof of Property Anticipated Prices Fluctuate Randomly*", though lacked theoretical discussions in his paper, but his findings supports the independence hypothesis of random walk theory in stock prices. He concluded that if a market has zero transition costs, if all available information is free to all interested parties and if all market participants either potential and existing have the same time horizons and expectations about prices, the market will be efficient prices will fluctuate randomly.

Fama (1965), "*Behaviour of Stock Market Prices*", his study on the random walk model is considered to be one of the most definitive studies. He analyzed the daily proportionate price changes of 30 blue chip stocks in the DJIA for the period of late 1957 to 26 September 1962. He followed standard statistical tools such as serial correlation and runs tests to examine whether any dependency exists in lagged price changes. He found that the serial correlation coefficient for daily price changes were

very small and average was 0.03, which s close to zero. But 11 correlation coefficients of stocks out of 30 stocks were more than twice their computed standard errors. He calculated serial correlation coefficient for differencing intervals stronger evidence of dependence. This lead Fama to conclude that the evidence produce by the autocorrelation model seems to indicate that dependence in successive price changes is either extremely slight or non-existent.

Fama further examined by runs analysis to testify whether price changes were likely to be followed by more price changes of the same sign. In fact, he found that the actual and expected runs are not significantly different. The largest difference exists for daily changes, but the difference was not significant. However, the difference for the 4-day, 9-day and 16-day intervals is very small. In any case, the departure from randomness was negligible. On the basis of these tests Fama concludes: 'there is little evidence, either from the serial correlation or from the various runs tests, of any large degree of dependence in the daily, four day, nine day and sixteen days price changes'.

King (1966), "Market & Industry Factors in Stock Price Behaviour", also examined the behaviour of 63 securities six industries of New York Stock Exchange, from 1927 to 1960. This study also concludes that there exists low degree of coefficient estimates of serial correlation, i.e.0.018 which is close to zero. This helped him in concluding that stock prices follows random walk model.

Niarchos (1971)**,** "Statistical Analysis of Transaction of The Athens Stock Exchange", studied price series of 15 individual stocks from Athens Stock Exchange for the period from 1957-1968. He found the serial correlation coefficients for individual stock as 0.036, close to zero. So, he concluded that the price fluctuations were random walk and past price has no meaningful information to predict future prices.

The empirical studies analyzed up till now have been related by testing whether lagged price changes are independent or dependent with each other. Many of the studies appear to support the thought that stock price changes are independent and that historical prices cannot be used to earn excess return.

The mechanical trading rules were developed to avoid the criticism of professional traders against the statistical technique used to test for independence among successive price changes. The argument was that standard statistical tools were not sensitive enough to measure the type of dependence that these traders see in their data. For instance, the simple linear-relationship postulated by serial correlation model is not sophisticated enough to discern the type of pattern that the chartist sees. Likewise, runs tests overlook the magnitude of price changes (Sprecher, 1975: 475). Some advocates of technical analysis argue that these tests do not prove that more complex strategies cannot be expressed systematically to use historical price data to earn above average return.

In an endeavor to meet these challenges of the chartists, Alexander (1961) invented "Filter Technique" based on price changes to see whether an above normal return could be obtained by using such rules. Filter rules generally include the following features.

i. A filter of z% is selected that will lead to a trading profit. The size of the filter is determined by the trader to maximize the trading profit.
ii. A position is taken, either long or short, in stocks that have increased or decreased by z%.
iii. Stop-loss orders may be used in conjunction with filters.

In 1961, Alexander reported empirical results of the filter technique to filter ranging in size from 5 to 50 percent. His tests covered different time periods from 1897 to 1959 and involved closing prices for two indices, the Dow Jones Industrial Average (DJIA) FROM 1887-1929 and Standard & Poor's Industrial Average (S&P) from 1929-1959. in general, he indicated that filter rules produced better results than those earned by a simple by and hold policy. This led him to conclude that the independence assumption of the random walk model was not up held by his data.

Dryden (1970), Statistical Study of UK Share Price", concludes that the share price movements were non-random. However in his later study, he used serial correlation and runs analysis to examine the daily closing prices of 14 individual stocks of U.K. market and supported that the independence hypothesis of successive price change.

While taking about Indian context, **Rao** (1988), Stock Market Efficiency & Share Price Behaviour", conducted the study on the weekend prices of the eight blue-chip stocks for five years from July 1982 to June 1987. He applied serial correlation analysis, runs test, and filter rule technique. The result from all the tests supported the random walk hypothesis.

Thus, on the basis of above mentioned review of previous research works, it can be concluded that stock market prices shows random movement and the security prices appear to be serially independent. So, investors cannot develop any profitable trading strategy using the information of past series.

2.3 Review of Previous Studies: A Nepalese Context

The following section briefly presents the review of different related studies published in different journals/books in Nepalese prospective.

2.3.1 Review of Published Articles in Journal/Book

Prof. Dr. Radhe Shyam Pradhan (1994), "*Financial Management Practice in Nepal*", had focused on price earning ratio of the stock. Large stock shave large P/E ratio, large ratio of MV to BV of equity and smaller dividends. P/E ratios and dividend ratios are more variable for smaller stocks whereas MV to BV of equity is more variable for larger stocks. Stock with large MV to BV of equity has large P/E ratio, and lower dividends. P/E ratio is more variable for stocks with large MV to BV ratios and dividend ratios are more variable for stocks with smaller MV to BV. Stocks paying higher dividends have higher liquidity, lower leverage, higher earning, and higher turnover and higher interest coverage. However, liquidity and leverage ratios are more variable for the stocks paying lower dividends while earning, assets turnover and interest coverage is more variable for the stock paying higher dividends.

Yogendra Timilsina (2001), "*Capital Market Development and Stock Price Behavior in Nepal*", had concluded that, there is highly positive correlation coefficient between EPS and MPS. Similarly, high degree of positive correlation was found between DPS and EPS. EPS is more relevant that DPS in evaluating the fair MPS. Investors are more sensitive towards the actual cash dividend.

Prof. Dr. R. S. & **Basudev Upadhyaya** (2004), "*The Efficient Market Hypothesis and the Behavior of Share Prices in Nepal*". The core objective of the study is to make a comprehensive investigation of 'weak' and slightly other form of EMH. In order to be conclusive about the efficiency of the stock market, primary sources of information about the share price is conducted for the first time in order to find out more subjective facts on share price behavior, which cannot be determined by the use of secondary sources of data. Statistical tools like serial correlation, the runs tests, weighted mean, median, chi-square test and spearman's rank correlation are used. The 23 stocks actively traded are examined as a sample for the study from mid-July 1997 to mid-July 2000.

The main conclusion determined from the study is that the Nepalese stock market might not be termed as 'Weakly Efficient' in pricing shares. The main factors affecting the share prices perceived by the respondents are dividends, retained earnings, bonus shares and right issues. The share price has been found more volatile than the expected dividends. Similarly, publicly available information is useful in identifying over or undervalued securities. Nepalese investors are indifferent toward making or non-makings of information public. The respondents slightly accepted the weak form of EMH. This study also found that the shareholders in high tax brackets do not prefer retained earnings instead of dividends.

Pramod Kumar Bhattarai (2004), "*The Trend Occurring in The Share Market of Nepal*", expressed his view that the trend which has occur can repeat but not with the same pattern. The securities analysis, who analyze securities presenting the past data on the charts, graphs, figures etc. and forecast whether the price will fall or rise, agree to this theory and say the share prices once turned bearish definitely turn to be bullish sometime in near future. Further, this article suggest that the market price is a function of demand and supply of stocks and the commanding forces behind the demand might be various factors like political, economic, financial, national, international events as well as the information disclosed by the companies. The various factors make the people either invests on the securities or sell.

2.3.2 A Review of Magazines

Investors were enlightened and they stated inquiring about companies' financial health and future prospect before buying or selling shares. People turned to price earning multiples; NEPSE indexes, informed trading became sort of a norm. When stock market entered 1995, many who could not cope with the system intelligent speculation, left the ground. As a result, the numbers of buyer's gradually came down and so did the price (The Kathmandu Post, May 18, 1996).

ADB experts have seen many obstacles to the growth of the capital market. This includes low level of investors' confidence, disclosure of poor and manipulated financial information, week enforcement of regulation, absence of instructional investors, lack of diversity in range of financial instruments and the scope of active participation for the various intermediaries limited by vertical barriers (The Rising Nepal, January 20, 2001).

Capital market is crucial element in the national economy. Its role in reinvigorating and boosting the economic activity in the country holds significant. The strategic plan released by security board can, to a great extent, energize the investors, dealers by increasing market experience both boom and boast soon after the beginning of securities trading through broker members in the stock exchange floor. Though the market started to function quickly boosting the price of share to an unexpected level, it could not sustained (Business Age, 1999).

Immediate measures lies in giving attention to shareholder's grievances like timely conduction of annual general meeting, improving the quality, standard and coverage of reporting, developing minimum return on investment strategy and index. In order the downtrend in share market, various reformative measures are urgently necessary to curb on unfair share market practices through the development of comprehensive and transparent stock exchange guidelines by the concerned authorities. The existing company management has to reorient its positive attitude towards investors and shareholders by improving the quality of timely reporting and providing the expected return to win the losing confidence of shareholders. Investors should be self-conscious in the selection of brokers for trading in securities and organize themselves to be

active to protect their rights. All these will help in the revival of share market to make it more active by attracting the investing public (The Rising Nepal, Feb. 22, 2002).

Lack of adequate and effective trading mechanism with NEPS, the only secondary market in the country for securities transaction, is virtually blocking an early issuance of newer financial instruments into the capital market. Even official at the securities board, the regulatory authority governing the stock market operations in the country conceded that lack of proper set up has prevented new entrants into the financial market and marked the development of capital markets (The Kathmandu Post, May 13: 2003).

Prices of stocks are determined with the simple interaction of the demand and supply sides. Buyers and sellers come to a mutual agreement on a trading price after both sides analyse their stakes and profits. Usually, theoretical value is determined by several factors like company management, competitive strengths, profitability and overall economic environment. Even technical factors like demand and supply have an impact on the stock price. But basically, the share market works like any other market, whereby there has to be a demand for stocks and supply to meet that demand, and the prices are set on the basis of their spread. In reality, the stock price is almost always different from the determined value of the share. If the stock market price is higher than the book value, a share is said to command a premium to its book value. If the stock price is lower than the book value, then it is said to be available at a discount to book value (The Boss; 15 Apr – 14 May 2006).

The current trend in share market is not so easy to recover unless strong regularly measures are not enforced. The honeymoon days of share market exist on more but there are still unlimited financial fortunes by sharp practices that went undetected during the period of share market boom among all, the regulation of share market to control on the unfair trade practice would be done of the strong measures to revive the share market in future. In order to curb the fraudulent practices and discourage the dissemination of misleading information in the current share market in Nepal, the regulating authorities must govern the activities in the share market. There should be immediate check on the unfair share trading practices. Wash sales should be discouraged by immediate action. Nepal Stock Exchange can from a watchdog team

to investigate on the real existence of a share transaction. The present practice of share trading by mutual consent is a kind of wash sales that should be discouraged as wit creates distortion in the price determined by the market forces. Such action helps in avoidant fictions name created by several different share brokers in share transaction and also to check on the creating an illusion of rising price. Moreover, the challenge for the regulating authority is to control on the hidden establishment of share market corners and pool by some market price manipulators. Surprise inspection and secret vigilance by a professional team (without known who are its members ad advisors) can check on the functioning of the office of such price manipulators interested to corner a share market in the hope of trapping or squeezing short sellers. If found dishonest in share market dealings, action should be taken against such price manipulators by imposing heavy penalties and punishment depending upon the nature of offence.

At the same time, the concerned authority has to discourage the practice of churning by the brokers since it helps brokers to generate sales commissions regardless of benefits of such transaction to the client. Moreover, it is a right time for the concerned authorities to develop transparent guidelines to have strict vigilance and control on misuse of insiders should be debarred from leaking price sensitive information by imposing heavy penalties and punishment for breach of legal provision. The revival of the share market requires minimum fulfillments of the responsibilities and accountabilities among company management to be shareholder focused. Time has come for company management to respond to shareholders expectation of return from their investment in shares of companies. Management should make it a habit to change attitude to think what is good for shareholders is good for company as a whole.

2.3.3 Review of Unpublished Master Degree Dissertation

Among other master degree thesis, written by previous researchers, some are found to be relevant for studies which are presented below:

Aryal (1995), "*General Behavior of Stock Market Prices*" with the objective to discuss the movement of stock market prices and to develop the empirical probability distribution of successive price change of an individual common stock and a stock

market as a whole. This study was based on secondary information obtained form NEPSE. This study covers almost 8 months period and the sample was 21 listed stocks. He applied serial correlation and runs test as statistical tools to analyze the data. Through the analysis he has concluded that the assumption of independence, as predicted by random walk model of security price behaviour has been refused at least for Nepalese context as the first approximation even in the rough way for early days of stock market operation. This rejection of hypothesis made clear that the knowledge of past and present becomes useful in predicting the future movements of stock market prices. The investors, on the floor of exchange, can make higher expected profits in future based on these historical price series. In other words, the dependence nature of price series produced by general market fluctuation statistically implied, today's change is positively depending upon yesterday's price changes. This implied that there is a sufficient lack of financial and market analysts who are sophisticated and superior in analyzing the general market fluctuations, predicting the occurrence of future potential and economic events that their eventual effects on price series.

Shrestha (1999), "*Stock Price Behavior in Nepal*", aims to examine the efficiency of the stock market Nepal. For this purpose he used there data constituting the daily closing price of 30 stocks out of the total listed companies in NEPSE. He applied serial correlation and runs test as statistical tools. The serial correlation coefficients of the daily price changes for 1 to 15 lag days, and runs of series of daily price changes lead him to conclude that the successive price changes are not independent random variable for the 30 sample stocks. Therefore, the random walk theory is not a suitable description for the stock market price behaviour in Nepal. The dependence in the series of price changes observed implies that the price changes in the future will not be independent from the price changes of the previous days. It also implies that the information of the past price changes is helpful in predicting future price changes in a way that the speculation through technical analysis can make higher expected profit than they would be under naïve buy-and-hold policy. Therefore, opportunities are available to sophisticated (both institutional and individual) investors to earn higher return in the market. The existence and participation of the sophisticated investors have not been realized from the findings of this study.

Kharel (2002), "*Stock Market Efficiency and Share Price Behavior in Nepal*", has conducted the study to find whether the future price of the stock is the result of past days performance or not. He used serial correlation test and runs test as statistical tools, further he used technical trading rule named filter rule for analyzing the data. He found that standard deviations of each and every individual stock's price changes are higher than the mean. Thus, the general shape of empirical frequency distribution is flatter than normal distribution's shape. Most of the results obtained from the serial correlation test from 30 stocks are absolutely large and significantly isolated from zero. The results obtained from the runs test are also consistent with the results of the serial correlation tests. When the runs test analyzed by lengths, it was found that actual number of runs are not normally changes series of Nepalese stock market. Similarly, the results obtained form the filter test showed that sophisticated mechanical trading rule can beat the average market return. As most of the filter's trading returned higher than buy-and-hold strategy, it supports the results of serial correlation and runs test. Thus, he concluded that today's price changes are not an unbiased outcome of yesterday's price changes.

Poudel (2005), "*Share Price Behavior of Listed Companies in Nepal*", with basic objectives to test the share price behavior of listed companies in Nepal or to test the random walk model in Nepalese context over the period 16th July 2003 to 16th July 2004 following a descriptive and analytical research design with the help of secondary data. The sample of the study comprises 21 companies representing from each sector listed in NEPSE. He has used serial correlation and runs test to compute the data. The overall study shows that the stock market performance is more or less stable position. The serial correlation analysis found that most of the coefficients of the sample are departed from the actual zero and runs test performed also suggests that there is significant difference between expected number of runs and actual numbers of runs. It concluded that the Nepalese stock market is not efficient in pricing shares or in Nepalese context random walk model does not hold true. It has also concluded that as serial coefficient and run test of successive price changes was dependant, it implies that the investors can predict the future price changes.

Suban (2007), "*Share Price Behavior in Nepal*". The major objective of the study is to assess equity share price behavior in Nepal. The specific objective of the study is to

test the random walk or weak form efficient market hypothesis. To examine whether successive price changes are independent or dependent of each other. To meet the objectives of this study there has been used the statistical tools like: serial correlation, rank correlation, run test, chi-square test. Both the primary and secondary data have been used to find the behavior of share price. The conclusion of the study is that both the tests- serial correlation and run test analysis don no support the independence assumption of random walk model. The non-random behavior of share prices is theat the Nepalese stock market may not be termed as "weakly efficient" in pricing shares where market efficiency is defined al all historical information is reflected in security. Share price movements are caused by flow of several kinds of information in the market.

Aruna (2008), *"A Study on Stock Price Behavior of Selected Companies Listed in Nepal"*, she tries her best effort on examining the movement of stock market price and sector wise behavior or NEPSE index. Study of stock market behavior is useful for proper analysis and development of stock market. She has used various statistical tools to meet her objectives. The conclusion of her study is the share market performance is poor because of small size market and low liquidity. The growth and performance of Nepalese capital market is not satisfactory though it is improving gradually.

Thus many studies have been conducted in the field of share price behavior in Nepalese context. Most of the research works done on the topic of share and stock price behavior have not applied the every aspect of their price behavior. Studies are based on secondary sources of information only. But research will try to show the findings through statistical tools and techniques like runs test, serial correlation etc. in connection with share price behavior. This study is attempted to update and validate the latest change in stock market in Nepal. This study is fruitful to government, Nepal stock Exchange ltd, scholars, forthcoming researchers academically as well as policy prospective.

CHAPTER - III

RESEARCH METHODOLOGY

This chapter describes the methodology employed in this study. The research methodology is the process of arriving to the solution of the problem through planned and systematic dealing with the collection, analysis and interpretation of fact and figure. It consists of research design, population and sample study, sources of data, data processing procedure and technique of analysis of data.

This study is more analytical and empirical. It covers quantitative methodology using financial and statistical tools. This study has been mainly based on secondary data gathered from respective annual reports of concerned banks especially from profit and loss account, balance sheet and other publications made by the banks.

3.1 Research Design

"The research design is one of the most important elements of the thesis. It is the out line of the logic of the study." The research design is the outline of a plan to test the hypothesis and should include all the procedures that follow (Wolff and Pant, 2005: 45).

Thus, the research design is plan structure and strategy of investigation conceived to obtain answer to research questions and to control variances. It is the arrangement of conditions for collection and analysis of data, to achieve the objective of this study, description and analytical research design has been used. The study aims to portraying accurately up on the working capital (current assets and current liabilities) and its impact on overall financial position of these two banks.

3.2 Populations and Sample

The time limit and unavailability of relevant data had forced the researcher met to make research on the few Commercial Banks even through there are altogether 26 commercial banks functioning all over the kingdom and most of their stocks are traded actively in the stock market. A daily record of Nepal Stock Exchange of the year 2007/08 has been taken as sample data for the comparative study of stock price behavior in Nepal.

3.3 Nature and Sources of Data

The data used in this study are basically secondary in nature. Published annual reports of the concerned banks are taken as basic source of data. The data relating to financial performance are directly obtained from the concerned banks. Similarly, related books magazines, journals, articles, report, data from Nepal Stock Exchange and Nepal Rastra Bank, Banking Directive and Financial Statistic, related website etc. as well as other supplementary data and various economic surveys are also used. Previous related studies to the subject are also counted as source of information.

The source of secondary data and information are:

- Annual trading reports of NEPSE
- Annual reports of sample commercial banks
- Websites of sample commercial banks
- Annual reports of Nepal Rastra bank
- Various reports and research studies
- Various journals and magazines
- Various articles and publication
- Daily newspapers
- http:// www. nepalstock.com
- http:// www. Sebonp.com
- http: // www.nrb.org.np

3.4 Sample Commercial Banks

In this study, 7 listed commercial banks were taken. They are as follows;

1. Himalayan Bank Limited (HBL)
2. Nepal SBI Bank Limited (SBI)
3. Bank of Kathmandu Limited (BOK)
4. Nepal Industrial & Commercial Bank Limited (NIC)
5. Laxmi Bank Limited
6. Kumari Bank Limited
7. Lumbini Bank Limited

3.5 Periods Covered

The period covered for the purpose of the study in each sample ranged from maximum of eight years to minimum of seven years from the fiscal year 2001/02 to 2008/09. For the study of stock price behavior, the time period of the data starts from 17th July 2007 to 16th July 2008.

3.6 Hypothesis of the Study

Following hypothesis has been set to conduct the study:

H_0: The successive price change of an individual stock is independent.

H_1: The successive price change of an individual stock is dependent.

3.7 Test Methodology

This study uses secondary data to test the random walk hypothesis by means of both parametric (serial correlation coefficient test for independence) and non- parametric test (run test for randomness). In order to test the riskiness of shares, the average price, the standard deviation and the coefficient of variation for individual stock is used.

The daily price of each stock has been selected for analysis of share price behavior. The actual tests are not carried out on the daily prices themselves but on the first different of their natural logarithms. The basic random variable of this study is,

$$U_{jt} = \ln \frac{P_{jt}}{P_{j(t-1)}}$$

Or, $U_{jt} = \ln P_{jt} - \ln P_{j(t-1)}$ ……..*(i)*

Where,

U_{jt} = the price change in natural logarithms of stock j.

P_{jt} = the price of security j, observed at the end of the day t.

$P_{J}(t-1)$ = the price of security j, observed at the end of the day t-1.

j = 1,2,3…….n.

t = 1,2,3 …….n.

In = natural log.

It is preferable to analyze the data on the difference of log prices rather than the raw prices. Because the change in log price is the yield with continuous compounding from holding the security data and the variability of the simple price changes for the given stock is probably the function of the price level (Fama, 1965: 45).

There may arise some special situation such as issues of the bonus shares or stock dividends, cash dividends, issue of right shares, which should be adjusted to reflect the reality in the long run. If any company exercise stock splits 2for 1 at the end of day t, its actual closing price of day t is doubled or divided by 1/2 the ratio of old shares to new. When company distributes dividends to shareholders, others things remaining the same, the value of the share should fall by about the amount of divided. To adjust it, the first difference between ex- dividend days preceding day is given by,

$$U_{jt} = \text{In}\,(P_{jt} + d) - \text{In}\,P_{j\,(t-1)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textit{(ii)}$$

Where,

d = the dividend per share

In case of right issue, the value of share should fall by the amount of theoretical value of right on ex-right date. In practice of right issue on day t, adjustments are made as follows:

$$U_{jt} = \text{In}\,(P_{jt} + R) - \text{In}\,P_{j\,(t-1)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textit{(iii)}$$

Where,

R = the theoretical right per share

In this study all necessary adjustment has been made in the data series of the entire related sample.

3.7.1 Serial Correlation

The term serial correlation is also called autocorrelation. It is defined as correlation between members of series of observation in time or space. It is widely used tool to measure dependence in successive share price changes as well. In general, serial correlation coefficient provides a measure of relationship between the value of a random variable in time (t) and its value of the (k) period earlier. It indicates whether the price a change at time (t) is influenced by the price changes occurring (k) period earlier. The serial correlation coefficient can compute as follows:

$$r_k \; X \frac{\text{Covariance}[U_{jt}, U_{j(tZ1)}]}{\text{Variance} U_{jt}} \; \ldots\ldots\ldots\ldots\ldots\ldots\ldots \; (iv)$$

Where,

r_k = Serial Correlation Coefficient.

U_{jt} = The price change in natural logarithms of stock j.

K = Lagged variables (1, 2, 3……)

T = Time interval (1, 2, 3…….)

The result of serial correlation is always range from +1 to –1, if the companies coefficient of serial coefficient is near to zero, then it is an indication independence, i. e. today's price change is an unbiased outcome of yesterday 's changes. But if this value departs significantly from zero, in either direction dependence among the time series data accordingly either positive or negative. If the distribution of Ujt has a finite variance, then in vary large samples the standard error of rk is given by:

3.7.2 The Runs Test

A run can be defined as a sequence of consecutive price change of the same sign followed and preceded by price changes of other sign. There exist three types of price changes in series i. e. positive, negative and zero. Runs test is a non – parametric test, which can also used to examine the independence of a series as a check of results generated by serial correlation tests. Runs test is performed to examine whether the actual number of runs confirmed to the expected number of runs under the independent Bernoulli process. If the observed runs and the expected runs are not significantly different from each other, then it is concluded that the independence assumption of the successive price changes is maintain.

Statistical tests based on the theory of runs ignore absolute values in a time series and observe only their sign. That is, they are essentially concerned with the direction of change in a given time series. Thus, for the present purpose, a run can be defined as sequence price changes of the same sign preceded and followed by price changes of different sign (Fama, 1965: 74).

The difference between expected and actual numbers of runs will be analyzed by the total expected numbers of runs.

Analysis by Total Expected Number of Runs

Under the hypothesis of independence and on the assumption that sample proportion of positive, negative and no – change are unbiased estimates of the population proportions, the expected number of runs of all types can be computed as follows (W.A. Wall and H.V. Roberts, 1956: 569-572).

$$m = \frac{N(N-1) - \sum_{i=1}^{3} n_i^2}{N}$$

Where,

m = total expected number of runs of all signs.

n_i = the number of price changes of each sign.

N = total number of observations.

The standard error of the "m" is: -

$$\sigma_m = \frac{\sum_{i=1}^{3} n_i^2 \sum_{i=1}^{3} n_i^2 (N-1) - 2N \sum_{i=1}^{3} n_i^2 + N^3}{N^2 (N-1)}$$

……*(viii)*

For large N, the sampling distribution of expected number of runs of all types approximately normal with mean m and standard error σ_m as given by equations *(vii)* and *(viii)* respectively. Thus, the difference between the actual numbers of runs and the expected numbers can be expressed by means of the usual standardized variable.

$$Z = \frac{(R - \frac{1}{2}) - m}{\delta_m} \text{ ……*(ix)*}$$

Where,

R = The total actual number of runs of all sign.

$\frac{1}{2}$ = The numerator for a discontinuity adjustment.

M = Total expected number of runs of all signs.

σ_m = Standard error of the 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 normal variant Z. the null hypothesis (i.e. randomness hypothesis) will be rejected or accepted at 5 percent and 1 percent level of significant in favor of (or against) the alternative hypothesis (non- randomness hypothesis) depending on observed values of Z.

If the expected number of runs and actual number of runs are not significantly different, then the independence assumption can be valid, otherwise not. Runs test can also be used in order to verify the results generated by serial- correlation test.

3.7.3 Standard Deviation (S.D.)

It is quantitative measure of total risk of assets. It provides more information about the risk of the asset. The standard deviation of a distribution is the square root of the variance of return around the mean. It measures the absolute dispersion. The following formula is applied to calculate the standard deviation, using historical returns.

$$\exists_j = \sqrt{\frac{(R_j - \bar{R}_j)^2}{n}} \quad \text{……(x)}$$

Where,

$\exists_j$ = Standard deviation of stock j.

R_j = Realized rate of return at a time of stock j.

n = Total no. of observation

Symbolically,

$$R_j = \frac{[P_t - P_{(t-1)}] + D_t}{P_{(t-1)}} \quad \text{……(xi)}$$

$$\bar{R}_j = \frac{\sum R_j}{n} \text{……...(xii)}$$

Where,

Rj = Expected realized rate of stock of stock j.

P_t = Current market price per share.

$P_{(t-1)}$ = Previous marked price of share.

D_t = Dividend in cash or stock (if any).

In case of dividend other than cash,

…Total dividend = Cash dividend + Stock dividend % × next years MPS

3.7.4 Coefficient of Variation (CV)

The risk per unit of expected return can be measured by coefficient of variation. It should be used to compare investment when both the standard deviation and the expected values differ. CV is computed as follows:

$$CV_j \; X \frac{\sigma_j}{\overline{R}_j} \quad \text{…….(xii)}$$

Where,

CV_j = Coefficient of Variation of Stock j.

$\exists_j$ = Standard Deviation of Stock j.

$\overline{R}_j$ = Expected Realized Rate of Return of Stock j.

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

This chapter deals with the main body of the study i.e. analysis and findings of the collected data. It includes number of listed companies in NEPSE, comparative analysis of NEPSE index and commercial banks index, group-wise annual turnover, trading performance of sampled stocks, graphical analyses of stock price behavior of sampled commercial banks, serial correlation analysis, runs test analysis and volatility of daily stock price of sampled stocks. And finally, the major findings of the analysis have been highlighted.

4.1 Number of Listed Companies

After the provision made by the law to list the companies in the board of security in order to issue their shares in the open market, several companies were registered. But the trend is very slow. Till now there are only 159 companies listed in the NEPSE though it is in increasing stage. The reasons behind the slow peak up may be of different, like: fulfillment of legal procedure. To do list in NEPSE the concerned company must have to fulfill the minimum criteria as prescribed by security By-law. Next reason is lack of knowledge about security market and its benefit to the general public. Still there are many people who don't have heard about the share. Lack of technology, rational investors who can analyze the benefits, risk and return etc, lack of appropriate laws, rules and regulations and its proper implementation, political disturbances and so forth.

Despite of those reasons, many companies are doing best effort to list their name in NEPSE. This trend is in increasing stage. The number of companies listed in different fiscal year is presented in the table 4.1.

Calculation of percentage change in listed companies =

$$\frac{\text{No. of Listed Company of Current Year} - \text{No of Listed Company of Last Year}}{\text{No. of listed company of last year}} \times 100$$

Example: $\frac{(96-115)}{115} \times 100 = -16.52\ \%$

Table 4.1

Listing Rate of Companies in NEPSE for Different Fiscal Years

Year	No. of De-listed Companies	No. of Listed Companies	Percentage Change
2000/01	-	115	*
2001/02	-	96	-16.52
2002/03	0	108	12.50
2003/04	1	114	5.56
2004/05	0	125	9.64
2005/06	0	135	11.57
2006/07	12	135	0.00
2007/08	6	142	5.19
2008/09	0	159	11.97

Source: NEPSE: Annual Trading Report: 2008/09

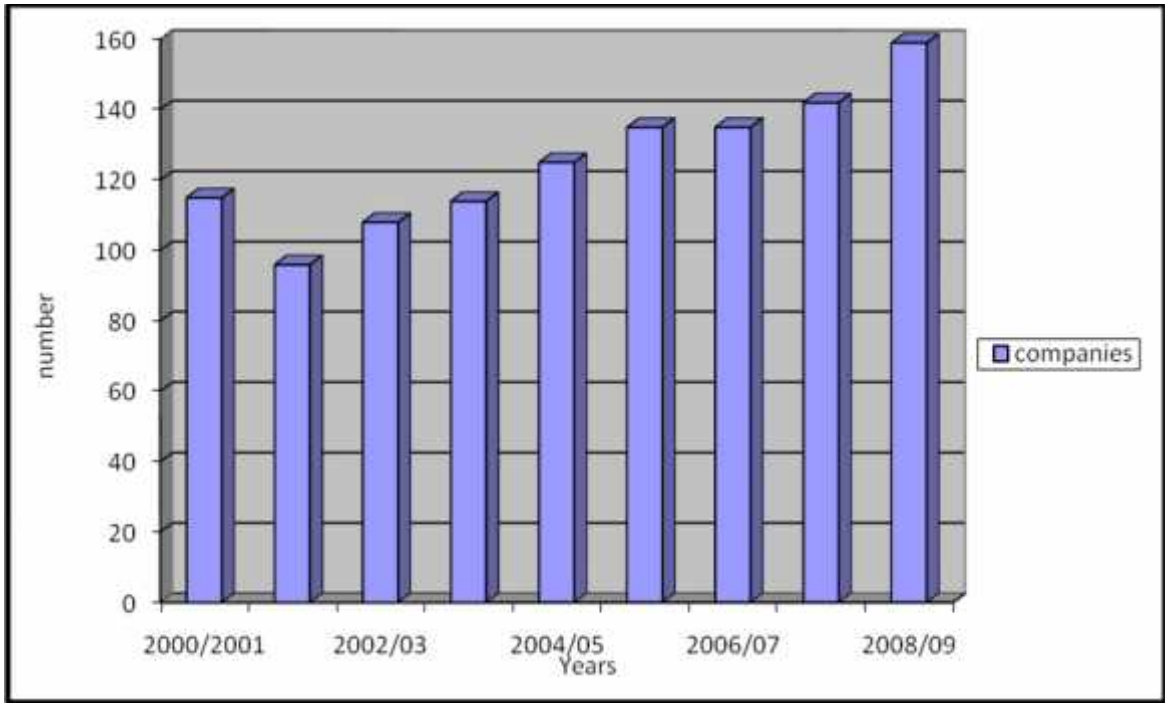
(Note:- point to be noted that form the 159 listed companies, all top ten companies on the basis of trading amount are form commercial banks)

The number of listed companies presented in the table 4.1 shows that the number of listed companies decline by 16.52% in the fiscal year 2001/02 compared with the previous year. The companies listed in NEPSE must have decreased, i.e, some of the listed companies had not renewed within the specified time or some companies had collapsed. In the year 2002/03, the number of listed companies increased by 12.50% and reached to 108. Number of listed companies increased because new companies had listed in NEPSE. In 2003/04 one company had de-listed form NEPSE, though number of listed company has increased. In 2006/07 number of de-listed company was twelve. This is the greatest number of companies de-listed till this date. There are various reasons behind the company de-listed. Such reasons are: changed in policy of the government, fall in the profit of the companies and other factors causing critical conditions to run the companies effectively, liquidation of companies, change in the political environment, and so on. Even though, number of listed company in the year 2006/07 had not changed. There might have same number of new companies listed in NEPSE. Again in 2007/08 six companies de-listed form NEPSE. Also the numbers of listed companies was increased by 5.19%. By the following trend, the numbers of listed companies were 159 in fiscal year 2008/09. The trend of listing companies in

NEPSE is in increasing stage. The reasons behind this trend are liberal government policy, increasing knowledge of share market in the general public, signal of improvement in the Nepalese political environment, better competition in the business environment, and so on. Thus, it can be concluded that the companies are very much attracted to list their stocks in NEPSE and make their securities traded in the secondary market. The trends of listing companies in NEPSE are shown clearly in the figure 4.1.

Figure 4.1

No. of listed Companies in Different Years



Source Report of NEPSE 2008/09.

The figure 4.1 shows that the trend of companies listed in NEPSE. In 2000/01 the number of listed companies was 115. In 2001/02 it was reduced by 19 (115-96). But it is not clear that how many companies were listed in that year and reached 96. So it can't say exact number of companies de-listed. The number was reached to 108 in 2002/03. 12 new companies were listed in NEPSE and there is no company de-listed. In 2003/04 number of listed companies increased to 114 and one company was de-listed. There are several reasons for the companies to be de-listed form NEPSE. Such as: not renewing its membership in time, not able to publish its annual financial report

in time, not fulfilling the requirements as prescribed by security By-law. Like fail to submit the report of Annual General Meeting in time or even fail to held AGM in time, liquidation of company, situation of the nation or political environment forcing to collapse the company, etc.

In 2004/05 the number increased to 125 with no company de-listed. The same situation was in 2005/06, the number of listed company reached to 135 with no company de-listed. The number was not changed in 2006/07 although, there were 12 companies de-listed. Any one of the reasons mentioned above may be the cause to de-list those maximum number of companies in that year. There might be the same number of new companies listed so that the total number remains unchanged. In 2007/08 number of de-listed companies were 6 even though the total number of listed companies was increased to 142. In 2008/09 there was not any company de-listed and the number of listed companies was increased to 159. Maximum number of new companies i.e. 17 companies were listed in that fiscal year.

4.2 Comparative Analysis of NEPSE Index and Commercial Banks Index

Index is one of the most important indicator of secondary market which is also considered as barometer of country's economy. Market index has always been of great importance in the world of security analysis and portfolio management. Both individual and institutional investors use the market index as a benchmark against which they evaluate the performance of their own or institutional portfolio. Market indexes are used to determine the relationship between historical price movement and economic variables and to determine the systematic risk for individual securities and portfolios.

The market index can also be used a measuring tool to determine whether the performance of stock market is good or not. This clearly focuses on the price of stocks that is increasing or decreasing in the market. Higher index means better performance and efficiency of the stock market and vice-versa.

NEPSE index group consists of various indices and they are calculated on the basis of market capitalization. NEPSE Index is calculated by considering all listed shares including that of promoter shares of all listed companies in NEPSE. Comparative

analysis between NEPSE index and commercial bank index has been presented in table 4.2. For this, monthly closing index points are extracted from annual NEPSE trading report 2007/08.

Index Difference = Closing Index of the Month – Closing Index of Previous Month

Example; for commercial banks: 917.58-782.55 = 135.03

For NEPSE: 817.08-705.96 = 111.12

Table 4.2

Monthly Closing NEPSE Index and Commercial Banks Index for the Fiscal Year 2007/08

Month	Index		Index Difference	
	Commercial Banks	NEPSE	Commercial Banks	NEPSE
July/Aug-07	782.55	705.96	*	*
Aug/Sept-07	917.58	817.08	135.03	111.12
Sept/Oct-07	936.27	861.37	18.69	44.29
Oct/Nov-07	988.39	915.38	52.12	54.01
Nov/Dec-07	1056.27	1025.91	67.88	110.53
Dec/Jan-07/08	951.26	958.91	-105.01	-67
Jan/Feb-08	817.63	814.43	-133.63	-144.48
Feb/Mar-08	691.12	714.76	-126.51	-99.67
Mar/Apr-08	739.56	746.69	48.44	31.93
Apr/May-08	810.94	806.26	71.38	59.57
May-June-08	951.33	930.65	140.39	124.39
June/July-08	985.65	963.36	34.32	32.71

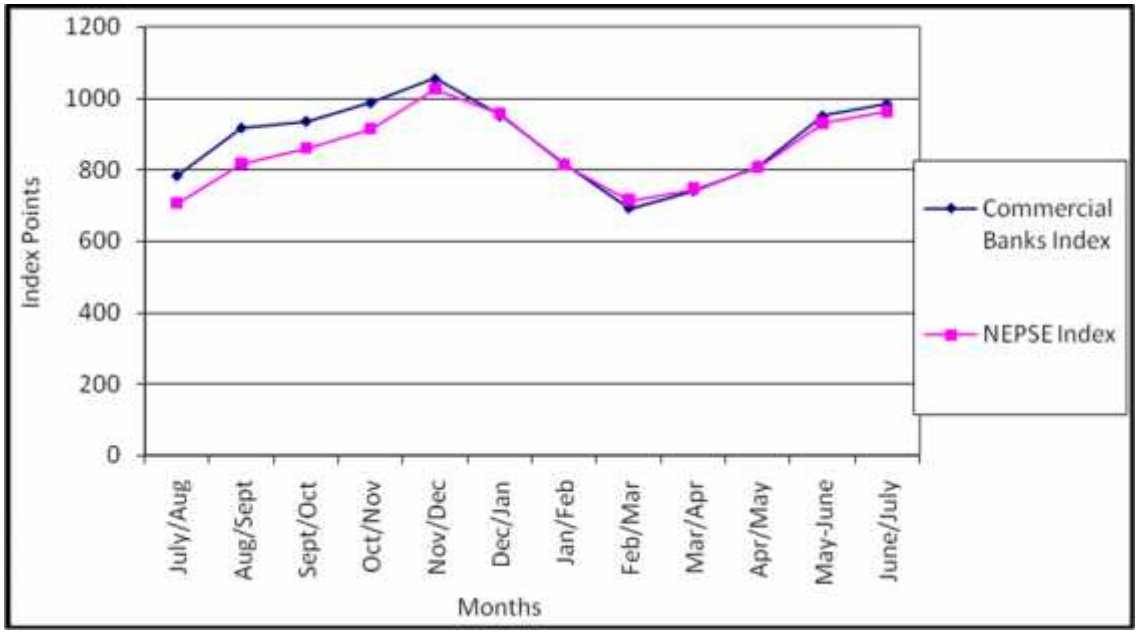
Source: NEPSE: Annual Trading Report, 2007/08

From table 4.2, it is clear that there are ups and downs in both the NEPSE index and commercial banks index during the fiscal year 2007/08. The peak of the NEPSE index was in the month of Nov/Dec-07 and there was decline in the month of Feb/Mar-08. In the same way, the highest commercial banks index was 1056.27 in the month of Nov/Dec-07 and the lowest index was 691.12 in the month of Feb/Mar-08. During the month of Nov/Dec and June/July, most of the companies declare dividends and right shares which will increase the stock price in the market. So that the NEPSE and commercial banks index was in peak position. In addition to it, they also submit the quarterly financial reports of the firm in NEPSE. And the company having sound financial position attracts the investors and then obviously it increases the price of the

stock of the company. However, it can be said that the performance of NEPSE index and commercial banks index during the fiscal year 2007/08 was satisfactory despite some declines due to political and trading disturbances. Through the performance of NEPSE index, we can see the good sign of the development of overall capital market and the economy of the country. The co-movement between the commercial banks index and NEPSE index are shown in the figure 4.2.

Figure 4.2

Co-movement between Indices of Commercial Bank and NEPSE for the Fiscal Year 2007/08



The figure 4.2 shows the movement of commercial bank index and NEPSE index series. Commercial bank index is much more volatile than NEPSE index. Up to Nov/Dec the series of commercial bank is high than that of NEPSE. When it begins to move downward, the commercial bank index move faster than the NEPSE index. In Feb/March the series of commercial bank is below the NEPSE index. This shows that the commercial bank index is much sensitive than the NEPSE index. Basically financial sector is highly affected when there are little ups and downs in the environment. NEPSE index shows the overall index of he stock market where as commercial bank is a part. This is the main cause that NEPSE index is less volatile than commercial bank index. There are many reasons that cause ups and downs in the

index. Like investors' attitude, political disturbances, strikes, vision and attitude of the leader of nation, several laws and policies flaw by the Nepal Rastra Bank, etc. Again there is upward movement of both the indices. It indicates that the performance of the capital market is better despite of various disturbances and current situation of the country. Also, there are other reasons for such improvement in the indices, like: liberal policy of Central Bank (NRB), signal political stability, awareness in the investors, etc. Nowadays, most of the investors are highly attracted towards the financial sectors especially commercial banks. Because they believed that banking sector is safe to invest their money they have. Because of high competition in this sector companies are highly dedicated in improving their business activities and trying to provide better returns to their investments. These days' commercial banks are becoming the most important indicator of the NEPSE index.

According to raw data of SEBON (2008/09), by the end of the fiscal year, the NEPSE index of the listed securities (Price Index) remained to be 749.1 points, which is 214.26 less than that of the last fiscal year end index of 963.36 points. The highest index during the fiscal year 2008/09 was recorded at 1175.38 points on August 31, 2008 and the lowest index was 609.46 points on January 21, 2009.

According to the Appendix B, the computed values of SD of Commercial Banks and NEPSE are 110.65 and 99.83 respectively. They convey that the index series of commercial bank and NEPSE are highly volatile. Whereas, the computed values of CV are 12.78 and 11.99 respectively. The computed CV of commercial banks is larger than that of the NEPSE index. This implies that the commercial banking sector is highly sensitive in the Nepalese stock market. However, the computed value of correlation is 0.918 β 1. It conveys that correlation between these two index series is perfectly correlated and both the indices move together throughout the study period. In other words, the change in one index will automatically affects the other one.

4.3 Group-wise Annual Turnover

The stock market performances of all companies in terms of amount and number of shares traded on the floor of NEPSE are presented in table 4.3. Among the various groups, commercial banks are dominant in terms of traded amount and number of shares. Including the trading of promoter shares, commercial banks trading volume

was Rs. 13949.81 million, covering almost 64.63% of total annual trading amount of equity shares. The higher number of traded amount implies attractive stocks. This indicates that the stocks of commercial banks are blue-clip stocks. Similarly the group of finance company and development banks remains at second and third position. But contribution of manufacturing and processing group, trading group, insurance group and hotel group are insignificant as these groups contributed less than one percent in total turnover. So their stocks are less attractive for the investors. It can be concluded that the commercial sector is very sensitive in the Nepalese stock market.

$$\% \text{ of Amount} = \frac{\text{Amount of Sector}}{\text{Total Amount}} \times 100$$

Example: $\frac{13949.87}{21584.69} \times 100 = 64.63\%$

$$\% \text{ of share} = \frac{\text{No.of Share of Sector}}{\text{Total No.of share}} \times 100$$

Example: $\frac{15574.16}{29714.24} \times 100 = 52.41\%$

Table 4.3

Group-Wise Distribution of Annual Turnover during the Fiscal Year 2008/09

	Companies	No. of companies	Amount (Rs. In Million)		No. of shares(000)	
			Total	% age	Total	% age
1	Commercial Banks	21	13949.87	64.63	15574.16	52.41
2	Manufacturing & Processing	18	26.08	0.12	95.12	0.32
3	Hotels	4	18.69	0.09	95.89	0.32
4	Insurance	17	212.8	0.99	418.49	1.41
5	Hydro Power	3	890.3	4.12	3612.12	12.16
6	Trading	4	33.49	0.16	14.65	0.05
7	Finance	61	2986.04	13.83	4919.41	16.56
8	Development Banks	29	2973.03	13.77	4353.58	14.65
9	Others	2	494.39	2.29	630.82	2.12
	Total	159	21584.69		29714.24	

Source: NEPSE: Annual Trading Report, 2008/09

The table 4.3 shows the total annual turnover of various companies listed under different groups. The highest portion of turnover Rs. 13949.87 million is account for the group of commercial banks. Similarly, the greatest number of share traded is 15574.16 thousand that belongs to commercial bank group too. It indicates that the

highest portion occupied in the capital market is by commercial banks. Investment in the sector of commercial banks seems to be good then in other sectors. After the commercial banks development banks fall in 2nd position in case of amount but it fall in 3rd position in case of no. of shares. While finance sector fall in 3rd position in turnover of amount and 2nd position in case of no. of share. Like wise other sectors contribute little portion almost less than 0% of total annual turnover amount. It shows that the commercial sectors have very strong position in the field of capital market.
But in overall the annual turnover has decreased than that of last fiscal year. It was Rs.22820.8 in the year 2007/08. Because of various reasons like, political disturbance, strikes, strict laws, investors attitudes etc, total annual turnover has decreased.

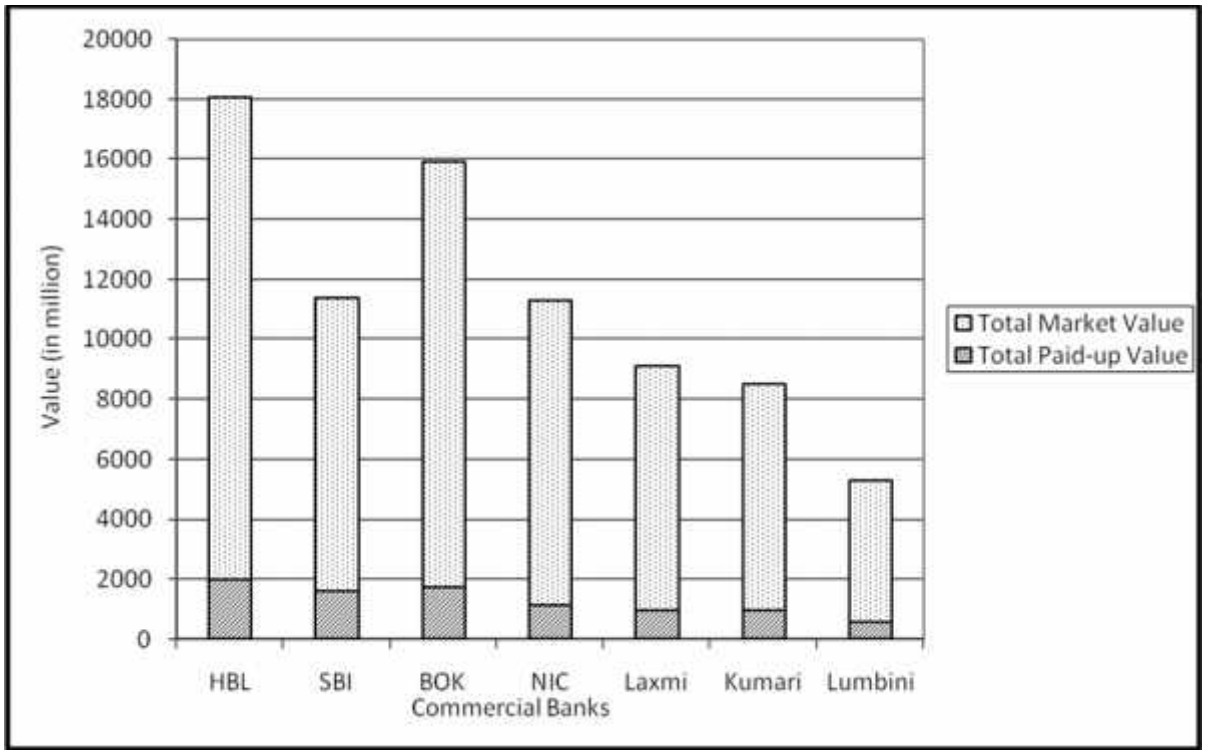
Listing of Nepal Telecom, largest company at NEPSE, in others group during the FY 2008/09 increased the trading volume of other groups tremendously as compared to the corresponding period in the previous year. Similarly, the turnover of the commercial banks, development bank and finance group increased by 64.63 percent,13.83 percent and 13.83 percent respectively. Remaining all other groups' trading volume has decreased during the review period.

4.4 Trading Performance of Sampled Stocks

The table in appendix C gives different quantitative information about the stock market functioning during the fiscal year 2007/08 for the sampled commercial banks.
According to the Appendix C, highest number of transaction was registered by BOK, trading 6106 shares. Also, the highest traded amount was recorded by BOK with Rs. 1662.99 millions. The highest total paid-up capital is Rs. 2010 million for HBL and the lowest belongs to Lumbini Bank Ltd. at Rs. 588 millions. The highest total market value is Rs. 16054.04 million for HBL. The lowest total market value at Rs. 4732.50 million was recorded by Lumbini Bank Ltd. The trading performances of sampled commercial banks are shown in the figure 4.4 below:

Figure 4.3

Trading Performance of Sample Stock for the Fiscal Year 2007/08



Source: Worked out from Appendix C.

The figure 4.3 shows the total paid-up value and the total market value of sample banks for the year 2007/08. As shown, the position of HBL is strong than that of others. Its total paid-up amount is Rs. 2010 million while market capitalization amount is Rs. 16054.04 million. Similarly BOK is in 2nd position. Paid-up amount of BOK is Rs.1714 million and the market capitalization amount is Rs. 14173.82 million. Likewise SBI is in third position in both paid-up amount Rs.1612million and market capitalization amount Rs. 9788.31 million. NIC, Laxmi, and Kumari banks are in 4th, 5th and 6th position in case of market capitalization amount while Laxmi and Kumari banks have equal amount paid-up value Rs. 964 million. And NIC has Rs. 1152 million of total paid-up amount. Trading performance of Lumbini bank is very poor among the sampled banks. It contributes only Rs. 588 million of paid-up amount and Rs. 4732.5 million of market capitalization.

After listing of Telecom as a largest company with highest amount of paid-up amount, Central Bank (NRB) makes the provision to increase the paid-up amount of each companies listed in NEPSE. Due to central bank's directive for increasing the capital base, the total market capitalization has increased. To meet the provision of NRB all the commercial banks including other sectors are increasing their capital. So almost all the companies are capitalizing their transaction amount.

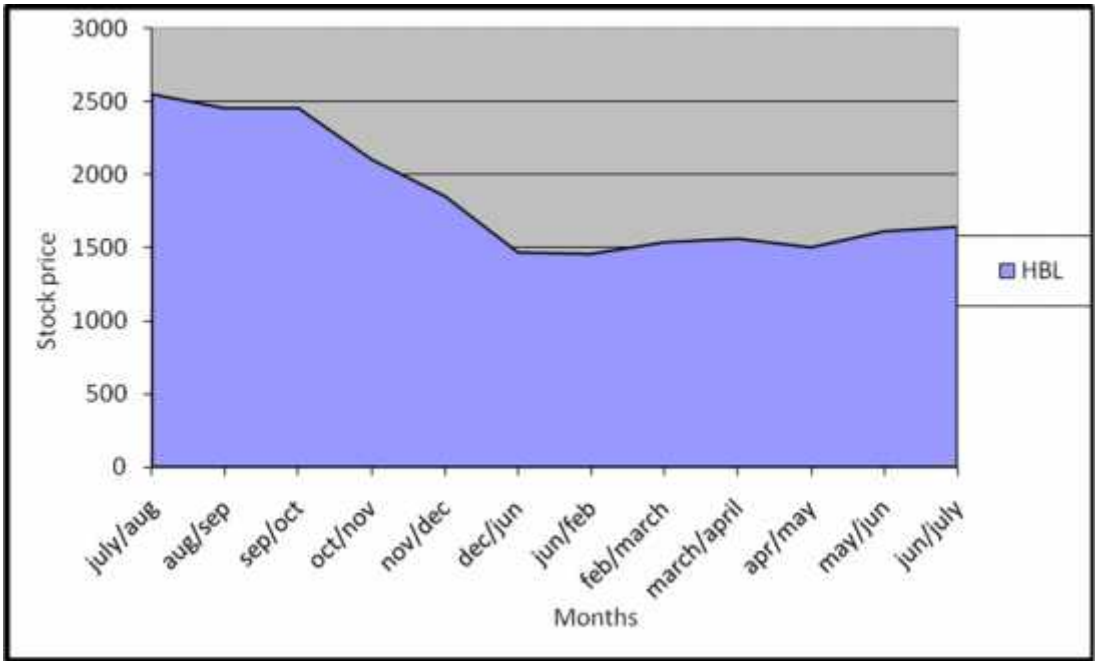
Liquidity in the market, important function of stock exchange can be measured by the ratio of traded amount to GDP of the country and traded amount to market capitalization. The ratio of traded amount to market capitalization for the FY 2008/09 is 4.23 percent which was 6.23 percent in the preceding year. Similarly, the ratio of traded amount to GDP was 2.26 percent which is also a decrease form 2.97 percent in the previous year. It shows that the liquidity in the market doesn't increase during the review period and companies are listing more shares in stock market but the trading volume doesn't Increase in the same ratio.

4.5 Stock Price Behavior of Sampled Commercial Banks

This part presents the individual graphs of sample commercial banks. A graph clearly exhibits the series of stock price behavior. The series represents the monthly data covering from mid-July 2008 to mid-July 2009.

Figure 4.4

Monthly Stock Price Behavior of HBL

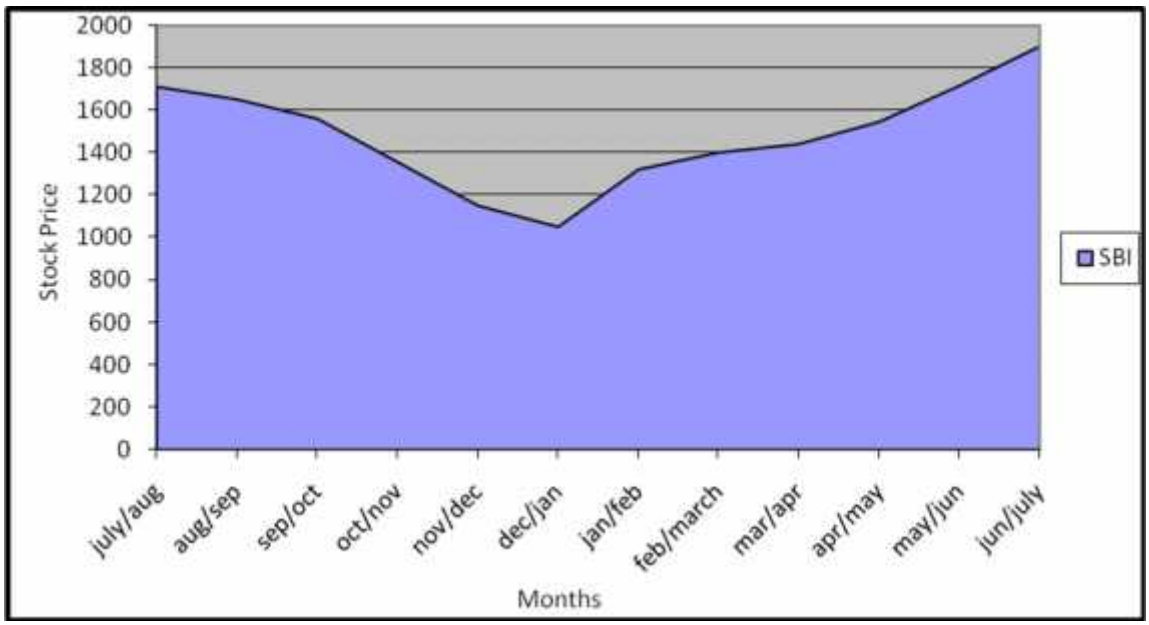


Source: Worked out from Appendix D.

Figure 4.4 exhibits the monthly stock price behavior of HBL for the fiscal year 2008/09. The maximum price of HBL stock is Rs. 2546 in month July/august 2007, minimum is Rs.1456 in jan/feb 2009. The trend shows that the share price falls deeply price from Rs.2546 to Rs.1456. there are different reasons to create such a situation of falling prices deeply. The main reasons of falling price are political instability, government dominant polices to capital market, strictness of margin lending, investors are sifted into other investment alternatives like, real state investment, other business sectors, etc. these are the reasons causing negative effect in the capital market. After jan/feb share price gradually moves upward but it cannot take the initial position . HBL had issued bonus share of amount 202.70 million in the month of March 2009. After the issue of bonus share the price increased slightly. But it cannot move and reach the position as it did before Sept/Oct. The slight movement of share price indicates that the capital market is strongly hindered by the current situation of the nation.

Figure 4.5

Monthly Stock Price Behavior of Nepal SBI Bank



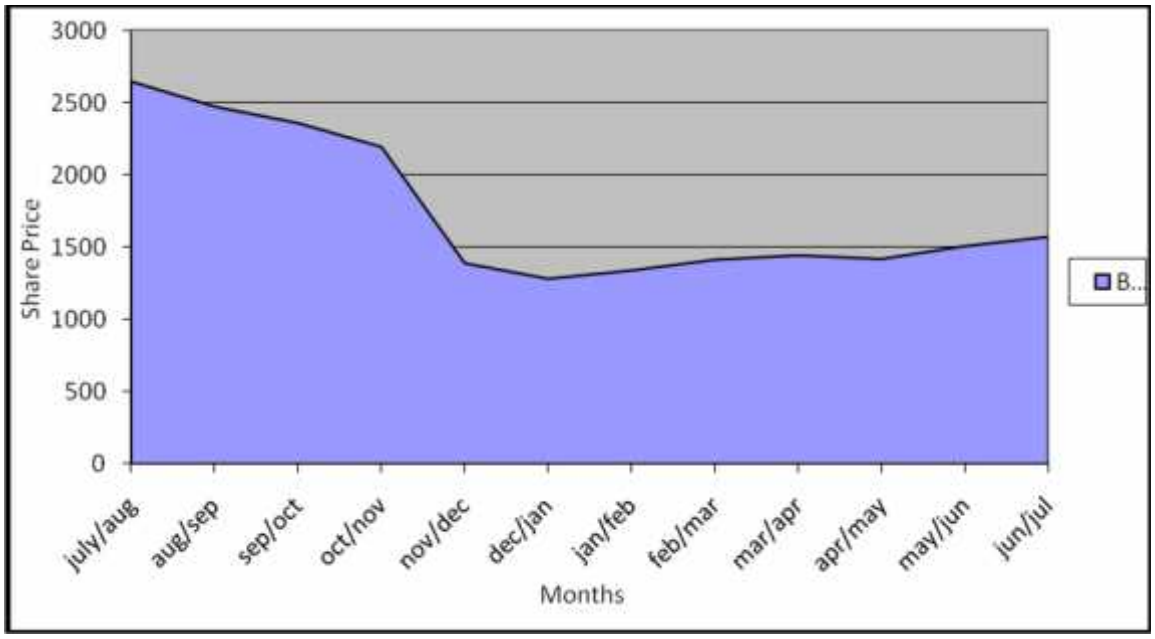
Source: Worked out from Appendix D.

Figure 4.5 exhibits the monthly stock price behavior of SBI Bank for the fiscal year 2008/09. The maximum price of the stock is Rs. 1900 in the month of June/July 2009; the minimum is Rs. 1050 in dec/jan. There is sharp decline in the share price till dec/jan. The cause behind such decline in share price are: political instability, day to day strikes by several parties with no reason, government dominant laws to capital market, rules of NRB to cut down the margin lending, investors shifted form capital market to other sectors of investment like, real state, establishing self-business, moving abroad, or engaging other sectors of business, etc. Due to such reasons capital market has to bear negative effects. After dec/jan the price starts to move upward and reached to Rs. 1900 which is higher than the starting of the fiscal year 2008/09. It means there is a variation in the stock prices of SBI Bank during the study period. There is an increasing pattern in the stock prices of SBI Bank. Reason behind the improvement may be improvement in the situation of the nation, signal of political stability, attachment of investors in the capital market with positive vision, government liberal policy, increasing of margin lending, better performance of the company which assure its investors that their investment is safe, etc. A sign of little positive changes in the situation of the nation it brings lots of positive effects in the capital market. In case of SBI bank this positive result may be of any reason, it shows good sign of development in the capital market. Despite of situation facing by all the

sectors, share price of SBI has increased. It indicates the better performance of the bank and investors of SBI bank are secured.

Figure 4.6

Monthly Stock Price Behavior of BOK



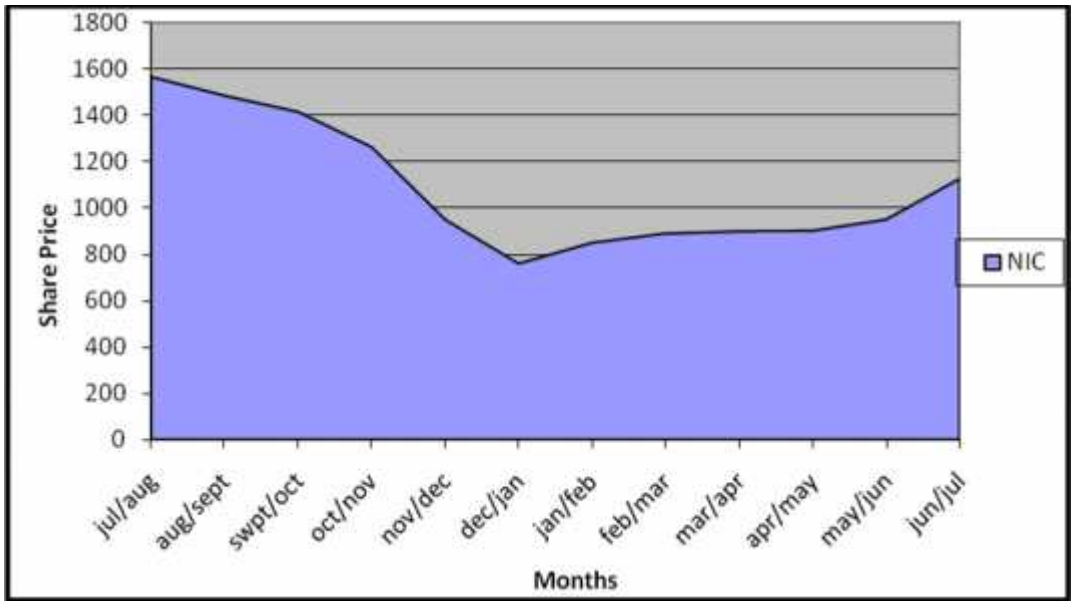
Source: Worked out from Appendix D.

Figure 4.6 exhibits the monthly stock price behavior of BOK for the fiscal year 2008/09. The maximum price of BOK stock is Rs. 2649 in the month of jul/aug 2008, the minimum is Rs. 1383 in month of dec/jan 2008/09. The share price of BOK starts falling slowly in the beginning of the fiscal year 2008/09 and falls sharply from oct/nov. Slightly ups and downs in the share price is usual, but such a deep falling in the price is uncomfortable. There must be various reasons causing sharp fall in the share price. The main reasons are; political instability, day to day strikes by several parties with no reason, government dominant laws to capital market, rules of NRB to cut down the margin lending, investors shifted form capital market to other sectors of investment like, real state, establishing self-business, moving abroad, or engaging other sectors of business, etc. Due to such reasons capital market has to bear negative effects that hinder the development of capital market. Again the price is falling very slightly but after dec/jan it starts to move upward. The upward motion is very slow than that of downward motion. It shows that there need no time to fall in price that it takes time to rise. BOK had issued Bonus Share of amount 241.26 million in the month of February 2009. The share price increased, but in very slight motion. As it is

a part of financial sector it is also not far from the current political environment. The graph shows that the prices of the BOK stock are volatile in nature though it has very strong position in the Nepalese stock market. The greater portion of capital market is of commercial banks and out of those banks BOK is in the number one position in overall transaction of share either in transaction of amount or the number of shares transaction.

Figure 4.7

Monthly Stock Price Behavior of NIC



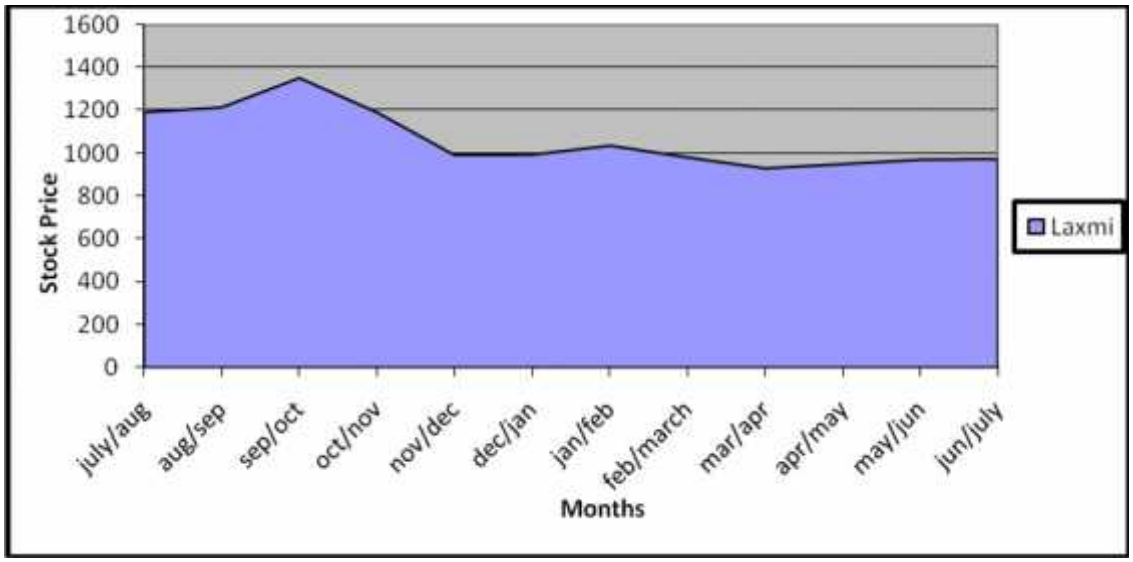
Source: Worked out from Appendix D.

Figure 4.7 exhibits the monthly stock price behavior of NIC Bank for the fiscal year 2008/09. The maximum price of NIC Bank stock is Rs. 1566 in month of july/august 2008, the minimum is Rs. 760 in dec/Jan 2008/09. The stock price of NIC Bank declines deeply till dec/jan. As it is the part of capital market it is also not far form the reasons behind causing fall in the share price. Those causes are; political instability, day to day strikes by several parties with no reason, government dominant laws to capital market, rules of NRB to cut down the margin lending, investors shifted form capital market to other sectors of investment like, real state, establishing self-business, moving abroad, or engaging other sectors of business, etc. Due to such reasons capital market has to bear negative effects. After the sharp fall in the share price it starts to pick up but in very slow motion. A small change in the situation of country brings several causes to move share price up and down. There are also the reasons behind the increasing trend of share price. Reason behind the improvement may be improvement in the situation of the nation, signal of political stability, attachment of investors in the capital market with positive vision, government liberal policy, increasing of margin lending, better performance of the company which assure its investors that their investment is safe, etc. A sign of little positive changes in the situation of the nation result more benefits in the capital market. NIC had issued bonus share amount of RS

190.08 million in the month of February 2009. After issuing of bonus share, price of stock moves upward, because investors believe that the company is in better position and their investment is safe the stock price of NIC Bank signifies the positive changes in the future.

Figure 4.8

Monthly Stock Price Behavior of Laxmi Bank



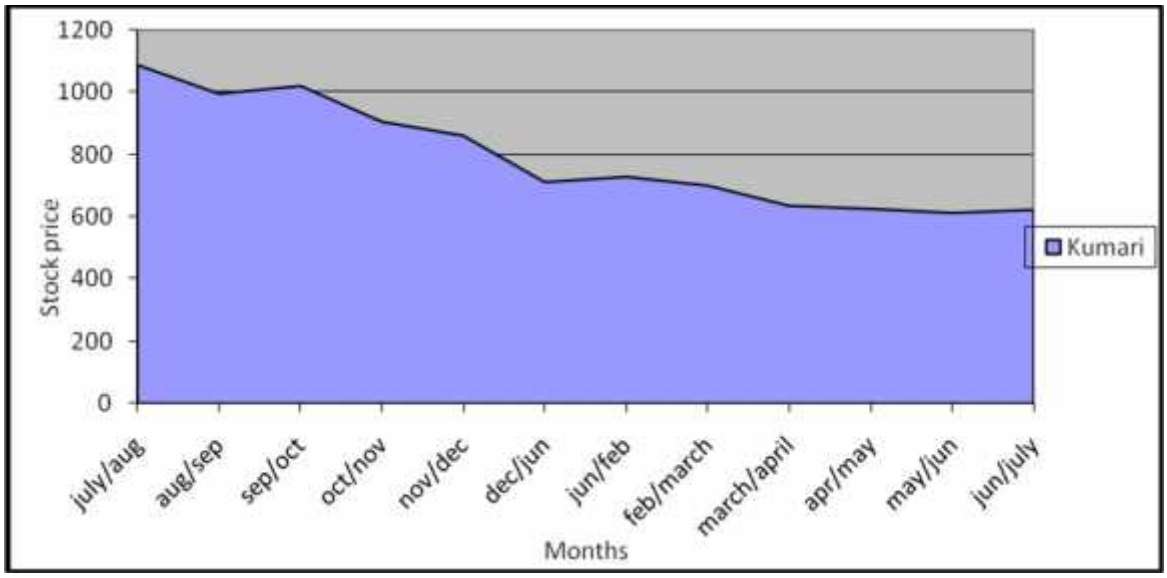
Source: Worked out from Appendix D.

Figure 4.8 exhibits the monthly stock price behavior of Laxmi Bank for the fiscal year 2008/09. The maximum price of Laxmi Bank stock is Rs. 1050 in sept/oct 2008, the minimum is Rs. 929 in mar/apr 2009. The price movement of Laxmi bank shows that there is stable price in the initial stage of the fiscal year 2008/09, then after begins to move upward and reached to price Rs.1050. it shows reverse relation with respect to other banks as discussed. While other sectors are running through sever condition this bank is in better position. Thus there cannot be said that there is positive changes in the nation and other factors. Despite of the situation of nation, political disturbances, legal restrictions etc the share price of Laxmi bank is increasing. The most reliable reason may be the bank is in very strong position that it can assure the investors that investment in this bank is safe. But after reaching peak point the price begins to fall sharply. By this it is cleared that this bank is also not far from the situation of the nation. As belongs to same sector as other banks it is also affected by the reasons causing fall in the share price. This bank had also issued bonus share of amount 143.09 million in jan 2009. As shown by the graph, after reaching lowest point its

price begin to increase, but the movement is somehow in flat basis. Though other banks' share price increase the share price of Laxmi bank cannot catch such motion. Price of the bank cannot recover though it starts to move. Almost whole the period after recovery the price falls in the same range.

Figure 4.9

Monthly Stock Price Behavior of Kumari



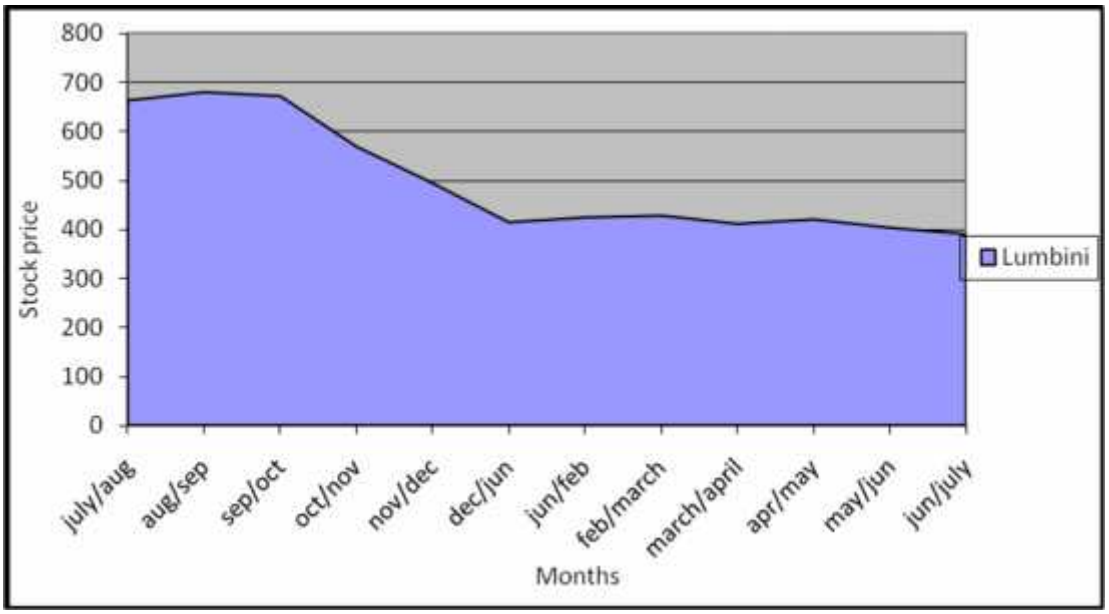
Source: Worked out from Appendix D.

Figure 4.9 exhibits the monthly stock price behavior of Kumari Bank for the fiscal year 2008/09. The maximum price of Kumari Bank stock is Rs.1087 in jul/aug 2008, the minimum is Rs. 612 in may/June 2009. The above trend shows that there is continuous fall in share price. The fluctuation of share price is in decreasing trend almost whole the year. From the figure there can easily notice that the bank is highly affected by the circumstances prevail in the nation. The position of the bank may be weak that it cannot face the situation of the nation. The various reasons that hindered the smooth flow of share transaction. Among such reasons like, political instability, day to day strikes by several parties with no reason, government dominant laws to capital market, rules of NRB to cut down the margin lending, investors shifted form capital market to other sectors of investment like, real state, establishing self-business, moving abroad, or engaging other sectors of business, etc. those reasons sometimes create sever condition in performance of business activities, sometimes even create the situation to collapse the company. After December the price move little upward and again begin to fall after jan/feb. Then it continue to fall price and reached to Rs.

612 in the month of may/jun after December the price fall continuously but not as rapidly as before the month.

Figure 4.10

Monthly Stock Price Behavior of Lumbini Bank



Source: Worked out from Appendix D.

Figure 4.10 exhibits the monthly stock price behavior of Lumbini Bank for the fiscal year 2008/09. The maximum price of Lumbini Bank stock is Rs. 681 in aug/sept 2008, the minimum is Rs. 391 june/July 2009.in the initial stage of the year there is slightly upward movement of price, but after reaching the peak point the price falls sharply reaching Rs. 415. As being a part of capital market it is also free from the existing circumstances of the nation. Those circumstances are vital for those company of weak position. The main causes are political instability, day to day strikes by several parties with no national reason , government dominant laws to capital market, rules of NRB to cut down the margin lending, investors shifted form capital market to other sectors of investment like, real state, establishing self-business, moving abroad, or engaging other sectors of business, etc. To the provision made by the central bank to increase capital of the company this bank had issued rights share of amount 300 million in the month of june 2009. Because this bank is not able to increase its capital by capitalizing its share transaction amount. Its due to day by day falling in share price. The stock price series of Lumbini slopes downward during the study period

despite of some upward slope which is less significant. This signifies that the stock of Lumbini Bank is very weak in the Nepalese stock market throughout the study period.

4.6 Serial Correlation Analysis

One of the most basic tests of the market efficiency is the test of serial correlation. Serial correlation measures the correlation coefficient among a series of stock prices with lagging numbers in the same time series data. Serial correlation for any series of data ranges from +1 to -1. Serial correlation of +1 represents perfect positive correlation and a value of -1 represents perfect negative correlation. This value can be useful for security analysis.

Serial correlation coefficients for 7 sampled stocks are computed to determine if there exists any significant correlation on successive changes in log price for different lags. The price change is said to be independent when each of coefficient are not significantly departed from zero. If the coefficients are significantly departed from zero, it would imply that successive price changes are dependent. The larger the size of the coefficient i.e. more departed from zero, the greater the dependence in the series of price changes. Large coefficient implies that the changes in the past and present prices have significant influence on the changes in the future prices. If the coefficients are found to be zero or close to zero, it can be concluded that the market is efficient in pricing shares. It signifies that the independence of the successive changes in prices. Thus, it supports RWH. If the coefficients are significantly departed from zero, it will indicate that the successive price changes are dependent. This will reject the null hypothesis.

The statistical software called SPSS computed the serial correlation coefficients and their Standard Errors (S.E.) of daily price changes in natural log prices for 1 to 10 lag days fro 7 stocks by using equation (iv) and (v) respectively mentioned in the research methodology chapter and they are reported in Appendix E and Appendix F respectively. Theses coefficients help us to find put if there is any degree of independence or dependence between the successive price changes for last 10 days in predicting tomorrow’s price changes.

Table 4.4

Distribution of Signs of Coefficients

Lag Days	Number of + sign	Number of – Sign	Total
1	7	0	7
2	7	0	7
3	7	0	7
4	5	2	7
5	6	1	7
6	7	0	7
7	6	1	7
8	5	2	7
9	5	2	7
10	4	3	7
Total	59	11	70

Source: Worked out from Appendix F.

According to table 4.4, the first column contains the lag days of the computed coefficients while the second and third column exhibits the number of positive and negative coefficient. In lag day 5 and 7, there is 1 coefficient of negative sign. In lag day 4, 8 and 9, 2 stocks out of 7 are of negative signs and remaining are the positive ones. Similarly, in the lag day 10, there are 3 coefficients with negative values. But in the lag days 1, 2, 3 and 6, there is the predominance of positive values. In aggregate, there are 59 coefficients of positive values and 11 coefficients of negative values. Coefficients have shown most of the time successive positive signs and sometimes successive negative signs.

Some of the computed serial correlation coefficients are close to zero. As a whole, positive sign has dominated the computed correlation coefficients. It means that the serial correlation coefficients are not significantly departed from zero. Therefore, the conclusion can be drawn that the successive price changes are independent, the stock market is efficient in pricing the shares and past price changes of the most of the stocks provide important information in predicting tomorrow's price changes.

However, agreement in the sign among the coefficients for the different securities is not necessarily evidence for consistent patterns of dependence. King (1966) has shown that the price changes for different securities are related (although not all to the

same extent) to the behaviors of a "market" component common to all securities (Fama, 1965:73).

We cannot conclude anything from the series of price changes so it is therefore, desirable to measure the degree of dependence, so the correlation obtained is compared to the standard error of computation. However study shows that larger the observation larger will be the S.E. and smaller the observation smaller will be the S.E. Statistical significance testing of the serial correlation is adapted to measure the degree of dependence of the price changes. The significance testing requires the standard error of the estimated coefficients under the assumption that the price change has a finite variance.

Table 4.5

Series Having Significant Values of First to Tenth Order Serial Correlation Coefficient

Lag days	Serial* Having Coefficient less than 2 times of its S.E.	Serial* Having Coefficient 2 or more than 2 but less than 3 times of its S.E.	Serial* Having Coefficient equal to 3 or more than 3 times of its S.E.	Series
1	0	1,2 and 4	3,5,6 and 7	7
2	2	1,4 and 7	3,5 and 6	7
3	1,2,4 and 6	3 and 7	5	7
4	1,2,4,5,6 and 7	3	0	7
5	1,2,3,4,5,6 and 7	0	0	7
6	1,2,3,4,5,6 and 7	0	0	7
7	1,2,3,4,5,6 and 7	0	0	7
8	1,2,3,4,5,6 and 7	0	0	7
9	1,2,3,4,5,6 and 7	0	0	7
10	1,2,3,4,5,6 and 7	0	0	7
Total	53	9	8	70

**For names of different price series, see Appendix F.*

Source: Worked out from Appendix E and Appendix G.

The first column of table 4.5 exhibits a lag period. The second column shows the number of series having the coefficient less than or equal to two times of its S.E. Similarly, the third column shows the series having coefficient greater than two but les than three times its S.E. Fourth column shows the number of series having coefficient equal to three or greater than the three times of its S.E. respectively.

As shown by the table 4.5, out of 70 computed serial correlation coefficients, only 9 coefficients are under the category of greater than two times but less than the three times of its S.E. Similarly, 8 coefficients are equal to three or greater than three times of its S.E. However, the large number of coefficients fall in the category of less than or equal to two times of S.E. These coefficients are significantly deviated from zero and no statistically significant.

According to Appendix F, the average serial correlation coefficients for the lag 1 to 10 are 0.462, 0.245, 0.197, 0.075, 0.091, 0.075, 0.047, 0.017, 0.015 and 0.000 respectively. The average serial correlation coefficients are also departed from the standard zero.

Finally, it can be inferred that the successive price changes are dependent and price changes of the most of the stocks are likely to be of much help in predicting tomorrow's price changes. Thus, the null hypothesis of the study has been rejected. The rejection of null hypothesis signifies that the RWH does not seem to fit in the daily equity shares of Nepalese stock market.

4.7 The Runs Test Analysis

Run tests analysis is another statistical tool (non-parametric test) to determine whether the series of price changes is random or not. Run tests can be used because there may be other patterns of price dependence that could not be detected by parametric test, for e.g. "too many" price changes of the same sign might group together. Hence, the simple type of non-parametric test, run test is used in this analysis. This analysis is specially performed to analyze and support the analysis thus performed by serial correlation. The relationship of runs test with serial correlation coefficients is that higher the expected number of runs over the actual number of runs, the serial correlation coefficient will be positive and vice-versa. If the correlation coefficients are close to zero, then the expected and actual number of runs should not be significantly different.

This test is based on the number of runs observed (R) in the sample as compared with the expected number of runs (m) that might result under random conditions. For comparison of the actual and expected number of runs, percentage of K or (R-m)/m is

computed. The deviation between the observed and expected number of runs is analyzed with irrespective of the signs. To prove the RWH of the study, there should be no significant variation between the observed and expected number of runs. Thus, we can conclude that the stock market is efficient. The statistical software called Minitab has been used to calculate run test variables.

The total expected number of runs (of all signs) m, the standard error of m ($¢m$) and standardized variable K have been computed according to the equations (vii), (viii) and (ix) of the methodology chapter and are presented in table 4.6. Table 4.6 shows the total expected and actual number of runs and the standardized variables (K) of the daily price changes for each stock. The differences between the actual and expected number of runs as proportions of the expected numbers have been presented in the column labeled (R-m)/m.

Table 4.6

Computation of Runs Test

S.N.	Companies	M	R	Z	K=(R-m)/m
1	HBL	99.1709	88	0.9552	-0.1126
2	SBI	107.234	88	0.9740	-0.1794
3	BOK	111.133	95	0.9690	-0.1452
4	NIC	107.286	93	0.9650	-0.1332
5	Laxmi Bank	92.6289	103	1.0482	0.1120
6	Kumari Bank	106.630	92	0.9658	-0.1372
7	Lumbini Bank	108.688	99	0.9484	-0.0891
	Averages	**104.6815**	**94**	**0.9751**	**-0.0978**

Source: Worked out from Appendix E.

Table 4.6 exhibits the result of runs test. Positive sign has dominated the computed values of Z, standardized normal variete. Similarly, the negative sign has dominated the computed values of K. the negative results are due to the reason of higher expected number of runs over the observed number of runs. The percentage of deviation is significant between the observed and actual number of runs. It leads to the rejection of null hypothesis. Thus, it is cleared that successive price changes in case of sampled stocks are not random.

Table 4.7

Percentage Difference between the Actual and Expected Number of Runs as Proportions of Expected Number of Runs

S.N.	Percentage of Equalities and Inequalities of K	Number of K
1	K having percentage difference ≤ 5	0
2	K having percentage difference > 5 ≤ 10	1
3	K having percentage difference > 10	6
	Total	7
	Highest	17.94
	Lowest	8.91

Source: Worked out from Table 4.6

Table 4.7 indicates the percentage difference between the actual and expected number of runs as proportions of expected number of runs. Out of 7 equity shares, none are less than the five percent and six are greater than five percent. The percentage differences for more than half of the equity shares are greater than ten percent. Only one share is greater than five but less than or equal to ten. The percentage differences range from highest 17.94 to lowest 8.91.

From the analysis, it is clear that there exists significant difference between the actual and expected number of runs in the series of price changes; this leads one to conclude that the successive price changes are not random in the Nepalese stock market or the price changes in the present and future stock market will not be independent from the price changes of past and present respectively. So, the null independent from the price changes of past and present respectively. So, the null hypothesis is not accepted. Thus, as above the available evidence suggests that the RWH model does not seem to fit in the daily equity shares of Nepalese stock market.

4.8 Volatility of Daily Stock Prices

This part presents the average prices (μ), standard deviation (SD) and coefficient of variation (CV) which are calculated by using the equations (x), (xi) and (xii) respectively mentioned in the research methodology chapter. In addition to it, statistical software called SPSS has also been used for calculation. Based on the analysis of absolute variation (SD) and relative variation (CV), volatility of the daily

price is determined. Table 4.8 presents the computation of stock volatility based on daily prices.

Table 4.8

Computation of Stock Volatility Based on Daily Prices

S.N.	Sampled Banks	No. of Observations	Max. Price	Min. Price	Average Price (μ)	Standard Deviation (SD) (∃)	Coefficient of Variation (CV)
1	HBL	199	2840	10	1895.18	414.975	21.90
2	SBI	222	2660	136	1508.79	387.312	25.67
3	BOK	226	2350	13	1727.33	347.619	20.12
4	NIC	217	1789	380	1123.42	230.369	20.51
5	Laxmi	194	1409	72	962.03	204.501	21.26
6	Kumari	216	1535	30	960.14	189.067	19.69
7	Lumbini	217	970	395	564.00	119.340	21.16

Source: Worked out from Appendix E.

According to the table 4.8, the highest value of SD is of HBL i.e. 414.975, which indicates that the most volatile stock among other seven stocks is HBL. Similarly, the computed SD of Lumbini is 119.340, which conveys that its stock is the least volative. The stocks of SBI, BOK, NIC, Laxmi Bank and Kumari Bank are consecutively volative. Only measuring the absolute variation is not sufficient to conclude the variation in the stocks, if the alternatives need relative measure. Therefore, it is essential to analyze the relative variation. The computed values of CV are 21.90% and 21.16% of HBL and Lumbini Bank partly supported the result of SD.

4.9 Major Findings of the Study

Based on the analysis of data and their interpretation, the major findings of the study in relation to the objectives set could be summarized as follows:

1. There are 159 companies listed in NEPSE till FY 2008/09. The listing rate of companies in the NEPSE is on increasing trend. Form the total 159 companies, all top 10 companies in the basis of trading amount are form commercial banks.
2. The peak index point of commercial bank is 1094.53 in the month of Dec/Jan 2007/08. The least value of index is 655.95 in the month of Jan/Feb 2008. The calculation has shown that the commercial banks index has higher variation than the NEPSE index. It means that the commercial banking sector is highly

sensitive in the Nepalese stock market. As shown by the calculations, correlation between these two indexes series is perfectly correlated, which means that, both the indices move together throughout the study period.

3. Among the various groups of industries, commercial bank group dominates other industries in terms of both trading volume and traded amount. The total traded amounts of commercial banks are Rs. 13949.87 million, which covers almost 64.43% of total annual trading amount over the FY 2008/09. This implies that the stocks of commercial banks are blue-chip stocks.
4. After the implementation of ATS since august 24, 2007 and extension of trading hour, trading volume as well as number of transaction increased significantly during the last fiscal year as compared to the previous years. However, during the fiscal year 2008/09, the total trading volume has slightly been decreased.
5. According to the trading performance of the sampled commercial banks, highest number of transaction 6522 has been secured by BOK. Likewise, highest traded amount and number of shares among the sampled commercial banks belong to BOK. This bank belongs to 2nd position among overall commercial banks in case of traded amount. HBL has dominated on both total paid-up capital and total market value.
6. The series of all the sample banks stock prices has exhibited in the graph. As shown by the graph stock price declines rapidly after September/October. Again the price began to rise but cannot reach or cross the initial price, except SBI Bank. The improvement of stock price of SBI looks better. Similarly, the graphs of HBL, BOK, NIC, Laxmi Bank and Kumari Bank have displayed the moderate volatile behavior. However, the only graph of the Lumbini Bank has indicated the downward slope of the trend line. This implies that the stock prices of Lumbini Bank are deteriorating day by day.
7. Due to the situation of the nation like political disturbances, strikes, banda, hartal with no national reason, government dominant rules and policies, central bank policy to cut down the margin leanding and increasing the paid-up capital, shifting attitude of investors form capital market to other sectors like real state investment, overseas migration, or doing other business sectors etc cause the capital market to face negative effects.
8. Although price per share has decreased during the FY 2008/09, total capitalization has increased by 40.05%. The listing of Nepal Telecom, largest

company with paid up capital of Rs. 15 billion force the central bank to make policy to increase the capital of all the companies listed in the NEPSE. This leads the company to capitalize their market value from the transacton.

9. As per raw data, by the end of fiscal year 2008/09 market capitalization of listed securities reached to Rs. 512939.07 million. The capitalization was 266247.5 in the fiscal year 2007/08. The highest data recorded in fiscal year 2008/08 was Rs. 612542.7 million in august 31, 2008 and the lowest was Rs. 334305.2 million in jan 21,2009. by the end of the fiscal year the percentage contribution of market capitalization on nominal GDP is estimated to be 53.43.
10. Most of the serial coefficients are significantly deviated from zero and statistically insignificant. It implies that the successive price changes are dependent. Thus, the Nepalese stock market is inefficient in pricing shares.
11. Runs test results have revealed that there is a significant difference between the observed and actual number of runs in the series of price changes. It is obvious that the successive price changes are not random. This implies that the RWH does not exist in the Nepalese stock market during the study period. The price changes in the present and future stock market will not be independent from the price changes of past and present respectively.
12. According to the computed values of SD and CV, the stock of BOK is the most volatile. Similarly, the stock of HBL and SBI are highly volatile. NIC, Laxmi Bank and Kumari Bank stocks have represented the moderate volatility. The least volatile stock is of Lumbini Bank. All the computed values have also supported the graphical presentation as well.

CHAPTER - V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter summary and conclusions emanated from the study are presented. The first section of this chapter provides summary of the study. The second section includes the major conclusions drawn from the study. And finally, the third section of this chapter proposes the recommendations.

5.1 Summary

Efficient market hypothesis is an important school of thought in the development of Nepal's stock market. Efficient market helps in canalization of savings and funds into the profitable investments for the maximum benefit to the society. It is also essential for the optimal allocation of scarce resources in an economy. The EMH implies that all known information is immediately discounted by all the investors and reflected in the prices of shares. It cannot be tested directly. However, by postulation some security price behavior, one can analyze market efficiency. The literature on share price behavior developed during the past four decades in the developed countries such as USA, UK, Australia etc. for testing the appropriateness of the random walk hypothesis (later known as weak form efficient market hypothesis) can be used to describe common stock price behavior. Studies on share price behavior are important because information on how executives make decision would not only help development of realistic theoretical models but would also help to test empirically the different hypothesis.

The Nepalese capital market has its beginning with the establishment of the Securities Exchange Center in 1976. It was the first institution established for the purpose of developing the security market in the country. Initially, it was assigned the job for promoting secondary market for the government securities. The main function of SEC was to assist in the development of a capital market by performing the role of a broker, underwriter, and share issuer and to sell government bonds. After the inception of the SEC, the shares of various manufacturing, trading, finance and banking companies were listed.

The securities market serves as a reliable guide to the performance of companies and thereby promoting efficiency. In Nepal, the major constituent of the security market is the commercial bank sector. Therefore, this study is focused on the research work relating to this sector. This study has examined the stock market efficiency and the stock price behavior of some commercial banks listed in NEPSE.

The study is mainly aims to assess equity share price behavior in Nepal and test the hypothesis that share price changes are independent. Its specific objectives are: (1) to analyze the behavior of stock price of listed commercial banks in NEPSE; (2) to analyze the efficiency of the stock market in pricing shares; (3) to determine whether the successive price changes of stocks are dependent or independent; (4) to examine whether the Random Walk Hypothesis exists in Nepalese stock market or not.

This study is mainly focused on developing the model to test the weak form of EMH or RWH in the stock prices of Nepal. Null hypothesis i.e. the successive price changes are independent was postulated to conduct the study. The study period for this purpose covered a year beginning form 17th July 2007 to 16th July 2008.

Before analyzing the results of tests, the overview of the Nepalese stock market was sketched. The recent position and performance of stock market in Nepal was analyzed. The Nepalese stock market has not developed remarkably in the economy because of various market imperfections like limited number of buyers and sellers, stringent government policies, negligible development of corporate sector etc. Few years back, stock market has experienced high volatility in prices and turnover volumes. However, the prospect of the securities market in Nepal seems good.

Literature review has covered the related studies. Conceptual review covered the concepts of security analysis, theories and approaches relating to the security market. Further, both foreign and Nepalese journals and articles and previous master degree dissertations has been reviewed.

To accomplish the stated objectives, this study employed the descriptive and analytical research design. Seven commercial banks were selected as sample among the twenty-one listed commercial banks which are taken as population. This study is

mainly based on the secondary data. The required data obtained were from various sources like the annual trading report of NEPSE 2007/08 & 2008/09, annual reports of sample commercial banks, various reports and research studies, various articles and publications, daily newspapers etc.

In this study, descriptive statistical tools like Mean (μ), Standard Deviation (SD) and Coefficient of Variation (CV) were used to analyze the volatility of the daily prices. Whereas, other statistical tools like serial correlation and runs test were also employed to measure the independence and randomness in daily stock prices respectively. Further, this study used SPSS software to work out average, SD, CV for serial correlation analysis and Minitab software for run tests analysis respectively. At the same time, Microsoft Excel application has been frequently used for computations of data and drawings of graphs.

In case of serial correlation analysis, the coefficients are significantly deviated from zero and statistically insignificant. The successive price changes were found to be dependent and the stock market is inefficient in pricing the shares. Runs test showed a significant difference between the expected and actual number of runs in the series of price changes, implying that the RWH does not exist in the Nepalese stock market.

5.2 Conclusions

1. The examination of deviation between commercial bank index and NEPSE index shows that the commercial bank index has higher variation than the NEPSE index. It means that the commercial banking sector is highly sensitive in the Nepalese stock market. As shown by the calculations, correlation between these two indexes series is perfectly correlated, which means that, both the indices move together throughout the study period.
2. The relation between the commercial banks and total capital market is very strong. That is changes in prices of commercial banks stock lead to change in the overall performance of capital market. The contribution of commercial banks to the capital market is more than 60 percent.
3. Among the various groups of industries, commercial bank group dominates other industries in terms of volume and traded amount on the whole

respectively. This implies that the commercial bank stocks are more favored by the public and they are the blue-chip stocks.

4. According to the trading performance of the sampled commercial banks, highest number of transaction has been secured by BOK. Likewise, highest traded amount among the sampled commercial banks belong to BOK. HBL has dominated on both total paid-up capital and total market value.
5. Graphical variation among the sampled commercial bank is observed. The series of BOK stock prices exhibited in the graph showed the volatile behavior. Series of SBI bank shows that the future seems better that is the price is in increasing trend. Similarly, the graphs of HBL, NIC, Laxmi Bank and Kumari Bank have displayed the moderate volatile behavior. However, the graph of the Lumbini Bank only has indicated the downward slope of the trend line. This implies that the stock prices of Lumbini Bank are in decreasing trend.
6. Trend of the price movement shows that the external environment plays significant role in increasing or decreasing the price of the stock in the capital market. Capital market is highly sensitive to the environment.
7. Most of the serial coefficients are significantly deviated from zero and statistically insignificant. It implies that the successive price changes are dependent. Thus, the Nepalese stock market is inefficient in pricing shares.
8. Runs test results have revealed that there a significant difference between the observed and actual number of runs in the series of price changes. It is obvious that the successive price changes are not random. This implies that the RWH does not exist in the Nepalese stock market during the study period. The price changes in the present and future stock market will not be independent from the price changes of past and present respectively.
9. Volatility of stock prices has been observed through the computation of average prices, SD and CV. According to the computed values of SD and CV, the stock of BOK is the most volatile. Similarly, the stock of HBL and SBI are highly volatile. NIC, Laxmi bank dn Kumari Bank stocks have represented the moderate volatility. The least volatile stock is of Lumbini Bank. All the computed values have supported the graphical presentation and conclusions.

From the study of series of price changes, the price changes in the future market will be dependent in the price changes of the previous days. The information of the past

price changes of the stock is helpful in predicting the future prices changes. Hence, sufficient opportunities are available to the both individual and institutional investors to earn higher return in the market. It is realized that mostly the native investors have dominated the market that can cause prices to diverge significantly from intrinsic values.

Due to the non-random behavior of the stock prices, the Nepalese stock market cannot be termed as efficient market because all the historical information has highly affected the current security prices.

5.3 Recommendations

The findings of this research work will definitely help the individual of institutional investors, the concerned authorities, the market makers and the prospective researchers to know about the share price behavior and the market efficiency. Based on the major findings, recommendations can be outlined as follows:

1. The computed SD and CV have decided that index of the commercial sector fluctuates more than the NEPSE index. They have perfectly positive correlation. The series of commercial banks index shows there is a dominance of its position in stock market. Hence, there should be clear pattern of index series. For this, the concerned authorities of the stock market should monitor the weakness of stock market.
2. Observation of the volatility indices that most of the sampled stocks have large variation in their share prices. They cannot perform well. Hence, the concerned authorities of the sampled banks are advised to monitor the causes of variation.
3. Investors should be well educated, sell-aware informative regarding the behavior of stock price. They should not invest in shares haphazardly without having adequate information. They should analyze the impacts of signaling factors (signaling factors means national or international events occurred during the investment period which may affect the price of the security). Thus, it is recommended that they should be extremely careful before making the investment decision. The investors should be educated on the benefits of investment in corporate securities. Besides, adequate knowledge on investment analysis should be developed among investors to make competitive and efficient stock market.

4. Nepalese stock market is inefficient in pricing shares. Both the test, serial correlation and runs test have rejected the RWH in this study. Therefore, the smart investors should take the benefit of the short-term speculation. It is also recommended that the stock market makers should try to find out the causes of inefficiency of market.
5. This research study is concerned with seven commercial banks only. The analysis is based on the secondary data. Therefore, the future researchers are advised to study all the listed sectors. They should also cover the primary data as well. It is also suggested that the future study should attempt to apply the Filter Technique to obtain the better empirical results.
6. Since the non-random share price changes are observed (secondary data), it is recommended that the investor should be aware of he fact that above average return is possible to some extent from the past trend and pattern.
7. It is recommended that speculation on the basis rumors regarding the current functioning of the companies should be avoided, and the listed companies must, at least, publish their working results on half-yearly or quarterly basis.
8. It is recommended that any price sensitive information should always be included in the agenda of the board meeting of the companies required to be circulated to the SEBO/N and NEPSE well in advance. Similarly, insider trading must be made a punishable offence.
9. It is recommended that the concerned regulatory body should encourage entering the Mutual Fund Business in the market. That's one of the reasons why; large investors such as mutual funds perform better in the market than the small investors do because they have access to better information.
10. It is recommended that stockbrokers and others connected with the securities business should develop necessary expertise. Besides, market intermediaries (secondary) should have adequate infrastructure facilities to offer appropriate services to investors.
11. It is also recommended that further incentive research and in-depth analysis should be undertaken in regard to stock market efficiency by the concerned regulatory body.
12. Capital market is the part of national economy. It should be free from the several disturbances. Hence it is recommended that the government should make such a rules that can make the capital market operate efficiently in free environment.

13. It is recommended that each sector must be monitored before making any policy and implementing it. The effect in the capital market must be analyzed while implementing such policies.

Suggestions for Further Research

There are some possible areas for future research on share price behavior in the Nepalese context.

First, the sample shares included in this study are “actively traded” shares. Hence, in order to provide a complete picture of share price behavior in Nepal, it may be imperative to conduct a study on “infrequently traded” shares.

Second, it may be worthwhile to examine whether mechanical trading rules lead to superior profits in comparison to a simple buy and hold policy after taking into account transaction and other costs.

Third, in this study certain non-random behaviors of equity shares are highlighted. It is doubtful whether these dependence relationships are constant over time. Therefore, the same study could be investigated to several time periods, so as to trace the development of pattern of rice changes.

Finally, attempts can also be made to survey the opinions of investors, academicians, chartered accountants and brokers on share price behavior in Nepal.

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APPENDIX - A

Name List of the Commercial Banks in Nepal

S.N.	Name of the Commercial Banks	Listing Date (A.D.)	Head Office	Paid up Capital (Rs. In million)
1	Nepal Bank Limited	-	Kathmandu	380.40
2	Rastriya Banijya Bank	-	Kathmandu	1172.30
3	NABIL Bank Limtied	1985/11/24	Kathmandu	965.75
4	Agriculture Development Bank	1968/01/02	Kathmandu	10777.50
5	Nepal Investment Bank Limited	1986/07/22	Kathmandu	2407.10
6	Standard Chartered Bank Limited	1988/07/04	Kathmandu	932.00
7	Himalayan Bank Limited	1993/07/05	Kathmandu	1216.20
8	Nepal SBI Bank Limited	1995/01/17	Kathmandu	874.50
9	Nepal Bangladesh Bank Ltd.	1995/12/24	Kathmandu	1822.70
10	Everest Bank Limited	1996/04/07	Kathmandu	838.80
11	Bank of Kathmandu Limited	1997/07/17	Kathmandu	844.40
12	Nepal Credit & Com. Bank Limited	2005/01/31	Siddharthanagar	1399.50
13	Lumbini Bank Limited	2004/11/10	Narayangadh	1015.30
14	Nepal Industrial & Commercial Bank Limited	2000/06/13	Biratnagar	1140.50
15	Machhapuchhre Bank Limited	2003/05/28	Pokhara	1479.10
16	Kumari Bank Limited	2004/07/29	Kathmandu	1078.27
17	Laxmi Bank Limited	2004/04/20	Birgunj	1098.10
18	Siddhartha Bank Limited	2006/02/23	Kathmandu	952.20
19	Global Bank Ltd.	2007/01/02	Birgunj	1000.00
20	Citizen Bank International Ltd.	2007/06/21	Kathmandu	1000.00
21	Sunrise Bank Ltd.	2007/10/12	Kathmandu	700.00
22	Prime Bank	2007/09/24	Kathmandu	875.00
23	Bank of Asia Nepal Ltd.	2007/10/12	Kathmandu	1000.00
24	Development Credit Bank Ltd.	2001/01/23	Kathmandu	1107.50
25	NMB Bank Ltd.	1996/11/26	Kathmandu	1100.00
26	KIST Bank Ltd.	2009/05/07	Kathmandu	200.00

Source: www.nrb.org.np

APPENDIX - B

Computation of Average Index, SD, CV and Correlation Coefficient

S.N.	Title	Commercial Bank	NEPSE
1	No. of Observation	229	229
2	Max. Index	1094.53	1064.09
3	Min. Index	655.95	677.98
4	Average Index (μ)	865.73	832.28
5	SD (∃)	110.65	99.83
6	CV (%)	12.78	1.99
7	Correlation Coefficient 0.918 β 1 perfectly correlated		

Note: Correlation is significant at 0.01 level (two tailed).

Source: Annual Trading Report, 2007/08.

APPENDIX - C

Trading Performance of Sample Stocks

(For Fiscal Year 2007/08)

SN	Name of the Company	Outstanding Equity	Paid up Value	Total Paid Amount Rs. In million	Traded Share Quantity (in '000)	Traded Amount Rs. In million	No. of transactions	Closing	Market Capitalization Rs. in million
1	Himalayan Bank Limited	8108100	100	2010	174.51	350.80	1524	1980	16054.04
2	Nepal SBI Bank Limited	6478032	100	1612	416.99	671.98	2708	1511	9788.31
3	Bank of Kathmandu Limited	6031413	100	1741	955.15	1662.99	6106	2350	14173.82
4	Nepal Ind. & Commercial Bank Ltd.	6600000	100	1152	619.81	714.09	3934	1284	10169.28
5	Laxmi Bank Limited	6100000	100	964	246.28	237.31	1531	1113	8147.16
6	Kumari Bank Limited	6250000	100	964	1040.27	1002.48	4710	1005	7537.50
7	Lumbini Bank Limited	5000000	100	588	1360.80	799.83	3280	631	4732.50

Source: NEPSE: Annual Report 2007/08.

APPENDIX-D

Monthly Stock Prices of the Sampled Commercial Banks

(Mid-July 2008 to Mid-July 2009)

Amount in Rs.

Trading months	Sampled Commercial Banks						
	HBL	SBI	BOK	NIC	Laxmi	Kumari	Lumbini
July/August	2564	1710	2649	1566	1190	1087	664
August/Sept	2450	1650	2475	1485	1213	995	681
Sept/Oct	2450	1559	2361	1415	1350	1020	673
Oct/Nov	2100	1355	2196	1263	1190	905	570
Nov/Dec	1850	1206	1390	905	990	860	495
Dec/Jan	1465	1050	1283	760	992	711	415
Jan/Feb	1456	1320	1340	850	1035	728	425
Feb/March	1535	1400	1415	890	980	700	429
March/April	1560	1440	1445	899	929	635	412
April/May	1500	1545	1420	902	949	625	421
May/June	1610	1715	1509	950	969	612	404
June/July	1641	1900	1573	1126	972	622	391

Source: NEPSE Trading Report, 2008/09, www.nepalstock.com

APPENDIX - E

Daily Stock Prices of the Sampled Commercial Banks

(17th July 2007 to 16th July 2008)

Amount in Rs.

Trading Days	Sampled Commercial Banks						
	HBL	SBI	BOK	NIC	Laxmi	Kumari	Lumbini
July/Aug-07							
17-Jul-07	1790	1260	1355	965	690	830	505
18-Jul-07	1611	1150	1220	960	685	785	472
19-Jul-07	1630	1150	1299	902	690	810	465
22-Jul-07	1660	1200	1270	940	690	820	475
23-Jul-07	1800	1260	1271	930	690	821	475
24-Jul-07	1790	1250	1270	930	690	814	*
25-Jul-07	1770	1248	1241	906	656	808	465
26-Jul-07	1710	1201	1246	910	675	790	455
29-Jul-07	*	1135	1230	900	675	780	*
30-Jul-07	1700	1160	1215	870	*	760	425
31-Jul-07	1710	1160	1205	850	650	750	395
1-Aug-07	1730	1182	1228	880	675	785	*
2-Aug-07	1765	1210	1245	910	660	801	*
5-Aug-07	1815	1230	1255	910	675	800	421
6-Aug-07	1800	1230	1255	910	*	806	435
7-Aug-07	1790	1230	1260	911	670	806	440
8-Aug-07	1800	1220	1276	925	*	810	430
9-Aug-07	1790	1210	1298	928	655	812	425
13-Aug-07	1790	1200	1280	919	655	810	425
14-Aug-07	1765	1195	1260	899	*	795	420
15-Aug-07	*	1180	1250	900	645	795	410
16-Aug-07	*	1175	1250	880	650	790	405
Aug/Sept-07							
19-Aug-07	1765	1175	1250	860	655	790	400
20-Aug-07	1770	1160	1255	865	*	*	400

21-Aug-07	1775	1162	1260	888	650	785	401
22-Aug-07	1780	1189	1260	875	650	795	402
23-Aug-07	1800	1220	1265	900	646	795	407
24-Aug-07	*	1222	1266	900	*	792	415
26-Aug-07	1800	1200	1266	900	*	792	417
27-Aug-07	1775	1200	1255	900	635	790	425
30-Aug-07	1770	1220	1260	900	635	800	425
2-Sep-07	1806	1260	1305	910	651	820	430
3-Sep-07	1800	1262	1325	910	655	825	430
5-Sep-07	1920	1300	1400	905	655	825	428
6-Sep-07	1980	1310	1405	922	655	850	414
9-Sep-07	2025	1342	1425	958	651	910	430
10-Sep-07	2227	1400	1480	1005	716	930	440
11-Sep-07	2240	1397	1490	990	725	900	462
12-Sep-07	2175	1320	1450	960	738	865	458
13-Sep-07	2140	1300	1440	982	731	900	450
16-Sep-07	*	1310	1445	990	725	889	449
17-Sep-07	*	1340	1444	985	739	880	435
Sept/Oct-07							
18-Sep-07	2120	1345	1425	1000	745	880	436
19-Sep-07	2058	1340	1445	980	754	867	425
20-Sep-07	2263	1450	1520	1025	814	905	433
23-Sep-07	2310	1425	1560	1025	830	901	440
24-Sep-07	2305	1411	1570	1060	815	915	440
26-Sep-07	2300	1443	1632	1100	795	918	450
27-Sep-07	2411	1530	1715	1130	820	970	475
30-Sep-07	2525	1606	1850	1150	821	1000	520
1-Oct-07	2525	*	1850	*	*	1000	*
2-Oct-07	2600	1750	1885	1124	825	1025	555
3-Oct-07	2550	1700	1850	1120	855	1075	578
4-Oct-07	2500	1700	1840	1150	924	1090	595
5-Oct-07	*	*	1840	1130	*	1090	*

7-Oct-07	2500	1700	1840	1150	953	1070	630
8-Oct-07	2499	1560	1775	1067	913	963	588
9-Oct-07	2401	1520	1690	1050	930	940	588
10-Oct-07	2306	1430	1521	1009	913	989	529
11-Oct-07	2350	1573	1673	1090	937	1087	575
14-Oct-07	2400	1660	1800	1110	950	1130	600
15-Oct-07	2300	1650	1620	1088	988	1110	574
16-Oct-07	2310	1650	1557	1080	1007	1100	564
17-Oct-07	*	*	1570	1080	*	1100	564
Oct/Nov-07							
28-Oct-07	2235	1600	1600	1080	*	1090	*
29-Oct-07	2200	1600	1650	1075	*	1055	*
30-Oct-07	2225	1590	1615	1075	*	1044	550
31-Oct-07	2375	1605	1640	1080	1000	1065	540
1-Nov-07	2455	1610	1669	1100	1028	1060	537
4-Nov-07	2450	1600	1655	1105	1025	1055	571
5-Nov-07	2440	1602	1630	1100	*	1055	565
6-Nov-07	2440	1615	1640	1099	*	1056	543
7-Nov-07	2460	1610	1635	1105	1065	*	540
8-Nov-07	2405	1620	1650	1136	*	1055	560
12-Nov-07	2425	1640	1675	1240	*	1060	556
13-Nov-07	2450	1625	1690	1240	1064	1060	550
14-Nov-07	2499	1675	1685	1259	*	1070	545
15-Nov-07	2510	1800	1706	1290	*	1105	567
Nov/Dec-07							
18-Nov-07	2575	1925	1707	1320	1063	1120	571
19-Nov-07	2575	1950	1805	1330	1060	1125	610
20-Nov-07	2540	1870	1805	1340	1040	1125	600
22-Nov-07	2450	1935	1810	1386	1020	1132	615
25-Nov-07	2480	1935	1815	1445	980	1131	616
26-Nov-07	2480	1930	1820	1432	1001	1165	615
27-Nov-07	2500	1970	1820	1400	1020	1146	596

28-Nov-07	2510	2100	1830	1405	1025	1165	602
29-Nov-07	2560	2160	1900	1420	1097	1249	630
2-Dec-07	2611	2250	2006	*	1190	1280	668
3-Dec-07	2728	2300	2120	1278	1309	1336	705
4-Dec-07	2800	2300	2156	1351	1365	1362	760
5-Dec-07	2790	2300	2195	*	*	*	806
6-Dec-07	2806	2300	2200	1461	1409	1430	815
9-Dec-07	2840	2300	2210	1606	1400	1455	825
10-Dec-07	2800	2285	2181	1650	1385	1436	810
11-Dec-07	*	2300	2155	1650	1310	1440	816
12-Dec-07	*	2345	2150	1630	1230	1420	780
13-Dec-07	*	2388	2185	1600	1353	1425	800
Dec/Jan-07/08							
16-Dec-07	*	2509	2225	1789	1380	1476	840
17-Dec-07	*	2660	2220	1761	1407	1530	899
18-Dec-07	*	2620	2240	1764	1400	1535	945
19-Dec-07	*	2590	2255	1780	1375	1495	970
20-Dec-07	*	2530	2280	1750	1350	1445	930
23-Dec-07	*	2400	2260	1706	1330	1410	904
24-Dec-07	*	2340	2150	1660	1260	1401	880
25-Dec-07	2220	2320	2006	1565	1265	*	830
26-Dec-07	2180	2105	1950	1470	1201	*	780
27-Dec-07	2095	2315	2100	1530	1200	*	835
6-Jan-08	*	2224	*	*	*	*	*
7-Jan-08	*	2002	*	1373	1120	*	752
8-Jan-08	*	1865	2017	1250	*	1300	*
9-Jan-08	2054	2051	1920	1325	1176	1201	*
10-Jan-08	1985	2256	2112	1457	1190	1240	760
13-Jan-08	*	2214	2087	1445	1182	1240	745
14-Jan-08	1995	2070	2050	1345	1185	1225	731
Jan/Feb-08							
16-Jan-08	1990	2000	1883	1293	1162	*	689

17-Jan-08	1812	1810	1774	1243	1117	1177	677
20-Jan-08	1707	1860	1674	1172	1054	*	664
21-Jan-08	1618	1970	1810	1240	1065	1115	614
22-Jan-08	1730	2100	1795	1350	1080	1120	581
23-Jan-08	1696	2070	1770	1299	1060	1010	600
24-Jan-08	1710	2060	1765	1250	1097	1092	660
27-Jan-08	1660	2020	1700	1230	1118	1050	705
28-Jan-08	1550	1840	1690	1180	1100	1010	656
29-Jan-08	1510	1686	1590	1118	1122	909	612
31-Jan-08	*	1770	1590	1080	1135	868	570
3-Feb-08	1480	*	1431	1000	1113	879	538
4-Feb-08	1422	*	1350	929	*	813	518
5-Feb-08	1394	1000	1242	837	*	754	500
6-Feb-08	1366	1020	1366	920	1157	829	550
7-Feb-08	1476	1102	1420	1012	1180	*	605
10-Feb-08	*	1212	*	1113	1147	878	593
11-Feb-08	895	1250	1535	1185	1125	*	590
12-Feb-08	1623	1300	1688	1160	1100	984	575
Feb/Mar-08							
13-Feb-08	1595	1295	1650	1135	1100	999	570
14-Feb-08	1575	1300	1609	1130	1101	970	567
17-Feb-08	1535	1230	1523	1024	1043	920	551
18-Feb-08	1470	1200	1531	1126	*	882	520
20-Feb-08	1441	1200	1632	1100	961	870	504
21-Feb-08	1400	1210	1600	1100	948	896	530
24-Feb-08	1456	1224	1550	1070	1038	938	530
25-Feb-08	1494	1275	1575	1077	1055	932	520
26-Feb-08	1530	1290	1550	1046	975	938	540
27-Feb-08	1550	1301	1535	1055	940	940	530
28-Feb-08	1564	1280	1565	*	912	930	520
2-Mar-08	1550	1340	1640	*	958	948	550
3-Mar-08	1560	1350	1631	*	1015	940	540

4-Mar-08	1530	1334	1625	1050	978	640	530
5-Mar-08	1510	1290	1618	*	1000	930	505
9-Mar-08	1505	1290	1625	*	970	912	510
10-Mar-08	1460	1280	1615	*	960	900	500
11-Mar-08	1475	1250	1556	989	939	885	495
12-Mar-08	1446	1225	1540	*	939	830	492
13-Mar-08	1420	1201	1502	932	939	811	460
Mar/Apr-08							
16-Mar-08	1420	1205	1530	839	917	*	451
17-Mar-08	1430	1200	1565	830	915	840	462
18-Mar-08	1425	1190	1540	825	885	860	466
19-Mar-08	1440	1200	1560	825	830	845	460
20-Mar-08	1425	1194	1560	855	869	848	470
23-Mar-08	1420	1180	1520	851	836	846	442
24-Mar-08	1410	1191	1540	850	836	821	440
25-Mar-08	1385	1190	1500	816	919	850	450
26-Mar-08	1340	1180	1500	842	950	830	440
27-Mar-08	1340	1189	1503	826	969	835	448
30-Mar-08	1350	1140	1500	830	980	842	450
31-Mar-08	*	1139	1525	841	998	851	460
1-Apr-08	1377	1145	1560	870	997	855	465
2-Apr-08	1415	*	1600	886	904	860	457
3-Apr-08	*	1259	1655	947	887	774	475
6-Apr-08	1500	1259	1675	938	975	775	510
Apr/May-08							
15-Apr-08	1446	1210	1530	922	940	715	481
16-Apr-08	1420	1186	1545	884	890	714	445
17-Apr-08	1511	1280	1675	919	920	771	489
20-Apr-08	1550	1300	1670	972	*	814	515
21-Apr-08	1540	1280	1660	961	800	821	505
22-Apr-08	1555	1260	1650	942	814	796	490
24-Apr-08	1515	1230	1669	935	815	796	490

27-Apr-08	1505	1200	1660	920	824	785	490
28-Apr-08	1545	1200	1665	916	808	785	483
29-Apr-08	1526	1203	1661	925	777	785	475
30-Apr-08	1559	1180	1655	750	800	792	496
4-May-08	1570	1180	1675	980	832	790	495
5-May-08	1645	1180	1759	970	852	810	490
6-May-08	1734	1229	1830	1005	880	820	519
7-May-08	1720	1240	1880	1030	922	854	530
8-May-08	1700	1275	1841	1000	890	840	510
11-May-08	1685	1250	1865	1020	880	835	505
12-May-08	1695	1215	1900	1050	890	825	510
13-May-08	1730	1285	1930	1065	974	869	558
May/June-08							
14-May-08	1775	1300	1952	1100	1029	870	564
15-May-08	1751	1286	1880	1078	1009	857	535
18-May-08	1715	1262	1860	1092	1026	835	530
21-May-08	*	1245	1896	1080	1004	825	540
22-May-08	1730	1255	1980	1135	1003	856	550
25-May-08	1764	1320	1995	1195	1060	870	581
26-May-08	1735	1295	1980	1182	*	875	575
27-May-08	1760	1320	2015	1210	*	900	620
1-Jun-08	*	1397	2125	1295	*	965	654
2-Jun-08	1860	1455	2150	1290	1100	940	654
3-Jun-08	1823	1450	2075	1246	1060	920	620
4-Jun-08	1850	1450	2100	1245	954	935	629
5-Jun-08	1865	1460	2130	1286	1049	955	630
8-Jun-08	1912	1505	2270	1353	1105	1000	662
9-Jun-08	1930	1570	2250	1330	1120	1000	658
10-Jun-08	1915	1545	2255	1310	*	1005	635
11-Jun-08	1920	1552	2275	1327	*	990	650
12-Jun-08	1865	1586	2270	1333	1163	1009	669
June/July-08							

15-Jun-08	1958	1580	2280	1350	1139	1015	666
16-Jun-08	2150	1630	2300	1355	1175	1045	660
17-Jun-08	2107	1575	2301	1340	1152	1000	660
18-Jun-08	2060	1520	2300	1334	1135	1030	660
19-Jun-08	2100	1550	2295	1340	1096	1023	660
22-Jun-08	2020	1551	2266	*	*	1005	647
23-Jun-08	2025	1550	2230	1300	1075	1000	647
24-Jun-08	1960	1515	2235	1270	1054	1001	650
25-Jun-08	2015	1530	2275	1275	1054	1000	650
26-Jun-08	2070	1530	2255	1300	1030	991	644
29-Jun-08	2050	1511	2265	1297	1092	980	630
30-Jun-08	2040	1470	2250	1267	999	960	615
1-Jul-08	1960	1465	2210	1260	1020	975	620
2-Jul-08	1920	1400	2165	1195	*	945	585
3-Jul-08	1925	1455	2156	1275	1030	975	625
6-Jul-08	1910	1430	2135	1275	1050	962	615
7-Jul-08	1912	1455	2200	1275	1050	985	618
8-Jul-08	1960	1450	2295	1280	1071	970	625
9-Jul-08	1950	1455	2290	1290	1092	960	628
10-Jul-08	1970	1465	2300	1280	1113	960	618
13-Jul-08	1980	1463	2300	1290	*	998	609
14-Jul-08	*	1511	2340	1310	*	1015	*
15-Jul-08	*	*	2350	1284	1113	1005	631

Source: NEPSE Trading Report, 2007/08, www.nepalstock.com

Note: * = Not Traded.

Note: Total Market Days = 229

APPENDIX - F

Serial Correlation Coefficient of Daily Closing Price Changes of Each Individual Security for the Lag k=1,2,3…10.

(Natural Log Transformed Data)

S.No.	Stocks of the Respective Companies	Lag Days									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	Himalayan Bank Limited (HBL)	0.195	0.172	0.128	0.084	0.084	0.082	0.111	0.086	0.079	0.064
2.	Nepal SBI Bank Limited (SBI)	0.545	0.317	0.202	0.153	0.167	0.080	0.043	0.012	0.002	-0.004
3.	Bank of Kathmandu Limited (BOK)	0.183	0.179	0.147	0.095	0.101	0.091	0.051	0.036	0.033	0.032
4.	Nepal Industrial & Commercial Bank Limited (NIC)	0.770	0.348	0.302	-0.020	0.064	0.032	0.003	-0.043	-0.007	0.012
5.	Laxmi Bank Limited	0.421	0.232	0.226	0.125	0.129	0.054	0.080	0.033	0.046	0.011
6.	Kumari Bank Limited	0.187	0.215	0.167	0.186	0.096	0.131	-0.030	-0.033	0.006	-0.016
7.	Lumbini Bank Limited	0.931	0.250	0.210	-0.098	-0.005	0.054	0.070	0.028	-0.055	-0.099
	Average	0.462	0.245	0.197	0.075	0.091	0.075	0.047	0.017	0.015	0.000

Source: Worked out from Appendix E.

APPENDIX - G

Standard Error of Sample Commercial Banks from Lag 1 to Lag 10

S.No.	Stocks of the Respective Companies	Lag Days									
		1	2	3	4	5	6	7	8	9	10
1	Himalayan Bank Limited (HBL)	0.071	0.071	0.071	0.071	0.071	0.071	0.071	0.071	0.071	0.071
2.	Nepal SBI Bank Limited (SBI)	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067
3.	Bank of Kathmandu Limited (BOK)	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067
4.	Nepal Industrial & Commercial Bank Limited (NIC)	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
5.	Laxmi Bank Limited	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072
6.	Kumari Bank Limited	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068

7.	Lumbini Bank Limited	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068

Source: Worked out from Appendix E.