CHAPTER I

INTRODUCTION

1.1 Global and National Economy

The Global economy is passing through a difficult phase with developed economies facing slowdown in the growth whereas the developing economies still growing at a faster rate. The slowdown in the economy has been greatest in the advanced economies, particularly in the United States and European Countries, although activity in Japan has been more resilient. The emerging and developing economies have so far been less affected by financial market developments and have continued to grow at a rapid pace, led by China and India, although activity is beginning to slow in some countries.

The financial shock that erupted in August 2007, as the U.S. sub-prime mortgage market was derailed by the reversal of the housing boom, has curtailed liquidity in the inter-bank market, weakened capital adequacy at major banks, and prompted the re-pricing of risk across a broad range of instruments. Equity prices have also retreated as signs of economic weakness have intensified, and equity and currency markets have remained volatile. These financial dislocations and associated de-leveraging are affecting both bank and non-bank channels of credit in the advanced economies. Bank lending standards are tightening. The financial market stress has also had an impact on foreign exchange markets. Exchange rate movements have also been striking, as the dollar approached to its lowest level in real effective terms since the mid-1990s**.** (www.economywatch.com)

Global growth is projected to slow to 3.7 percent in 2008, 1¼ percentage points lower than the growth recorded in 2007. However, domestic demand in major advanced and emerging economies in 2008 is expected to be a little stronger. The divergence in growth performance between the advanced and emerging economies is expected to continue, with growth in the advanced economies generally expected to fall well below potential. (www.imf.org)

In sum, although the broad contours of the world economy are unchanged, the uncertainty regarding inflation and rising commodity prices are expected to exacerbate the challenges facing policy makers**.**

The effect of the global economy is also observed in the Nepalese economy. The Nepalese economy was not satisfactory during the first nine months of the Fiscal Year (FY) 2064/65. End of conflict and positive investment opportunities has some positive effect in the economy

however it is yet to yield a peace divided. Increase in the price of crude oil and the increase in the global food prices had an impact on the overall economy.

The GDP growth rate of the Nepalese economy was 2.5% in the FY 2063/64 and it is predicated at 4% for the FY 2064/65. The overall growth rate of the agricultural production was 0.7 % in the FY 2063/64 and it is estimated to increase by 6% for the FY 2064/65. Moreover, Industrial Index showed an increment of 6% in the FY 2063/64 and it is likely to decrease by 0.2 % in FY 2064/65. (www.nrb.org.np)

The inflation rate was 8.9% in the first nine months of the FY 2064/65 whereas it was 5.6% in the FY 2063/64. Increase in the global price of the food products and beverages had an effect on the inflation. Moreover, the crude oil was US $ 68.71 I FY 2063/64 and it increased by 59.9% and reached to 109.86 in the first nine months of the FY 2064/65. (www.nrb.gov.np)

Although the Nepalese economies witnessed some positive development in the financial indicators, the increase in the overall inflation due to soaring global fuel prices is likely to affect the overall performance of the economy.

1.2 Securities Market in Nepal

Securities Market is a mechanism created to facilitate the exchange of financial securities or assets by bringing together buyers and sellers of securities. (Sharpe, 1998: 294) Securities market plays an important role in mobilizing savings and channeling them into productive investment for the development of commerce and industry of the country. It basically assists the capital formation and economic growth of the country. In many developing countries like Nepal, the underdeveloped capital market is still prevailing in the economy.

In Nepal, the history of securities market began with the floatation of shares by Biratnagar Jute Mills and Nepal Bank Limited in 1937. In 1964, the HMG introduced the Company Act and in the same year the first issuance of government bonds was made through Nepal Rastra Bank (NRB)-the central bank to collect development expenditures. In 1974, the government introduced Industrial Policy and under this policy an institution named Securities Marketing Center (SMC) was established to deal with government securities, development bonds, national saving bonds, and corporate securities of a few companies. Securities Exchange Centre (SEC) was established in 1976 under the ownership of Nepal Rastra Bank and Nepal Industrial Development Corporation (NIDC) with an objective of facilitating and promoting growth of capital market and it was the only capital market institution in Nepal. Due to the lack of governing acts and rules the establishment of well organized capital market was not

possible. Realizing the need of an organized capital market, Securities Exchange Act was introduced in 1983 and came into force in 1984. The purpose of this act was to provide systematic and favorable market environment for securities ensuring and protecting the interest of individuals and institutional investors as well as to increase the public participation in various firms and companies. SEC provided facilities to trade government securities and a few corporate sector securities. Since, there was no involvement of broker and dealer in security market, SEC itself was undertaking the job of brokering, underwriting, managing public issue, market making for government bonds and other financial services. There was also an absence of effective secondary market to ensure liquidity to the securities. After the inception of the Securities Exchange Center, shares of various manufacturing, trading and banking companies became listed with most of these listed companies being public companies. Between 1984 and 1990, 42 companies were listed, out of which more than 25 companies had some form of government ownership. (Tuladhar, 1996) This number has increased immensely and the umber of listed companies reached 145 currently.

In the mid-eighties, Nepal adopted an economic liberalization policy and Nepal opened its door to foreign investors. As a result of financial liberalization, joint venture commercial banks and other financial institutions were established in Nepal. Moreover, after the restoration of the democratic government in 1990 through the people's movement, financial reform programs were initiated and efforts were made to change to make the capital market compatible with the changing economic system. The government under the program initiated to reform capital markets made a first amendment in Security Exchange Act in 1993 and converted Securities Exchange Centre into Nepal Stock Exchange for securities trading by private brokers. Moreover, Security Exchange Board was established for oversight functions as a regulatory body. The establishment of NEPSE and Securities Exchange Board were phenomenal in Nepal because only after the establishment of this regulatory and operating institution, true capital market evolved in Nepal where prices were actually determined by the market. The second amendment in the Securities Exchange Act was made in 1996 which separated market making activities and issue management activities. (Bhattarai, 2002) Following these changes, the capital market in Nepal has witnessed significant growth. The primary market grew immensely. Moreover, the secondary market too, has made a substantial increase in both the market capitalization and the price index.

In 2006 due to change in the economic and political situation in the country new security exchange act was formulated. The Securities Exchange Act, 2006 and new regulations formulated under the act further ensured the efficiency of trading. In Moreover in 2007, the Government of Nepal (GoN) issued three new Regulations, namely, Securities Businessperson (Stock Broker, Dealer and Market Maker) Regulation-2007, Securities Board

Regulation-2007 and Stock Exchange Licensing Regulation-2007. These Regulations which came into effect from 4 November 2007, among other things, paved the way for opening a new stock exchange, increased the number of stock brokers and reduced the brokerage commission. It is expected that the new regulations will contribute to the development of the capital market and the welfare of small investors.

During the conflict there were few hiccups in the securities market due to lack of security to the business environment and low level of investors' confidence in the market. However, Secondary market indicators grew tremendously, especially after the People's Movement of 2006 and the successful Constituent Assembly Election. The number of market participants and transactions increased, volume of trade went up and market capitalization grew considerably. The secondary stock market showed encouraging signs which might be due to the increase in investor's confidence.

1.3 Stock Exchange

The term 'stock market' is a concept for the mechanism that enables the trading of company stocks (collective shares), other securities and derivatives. The stocks are listed and traded on stock exchanges which are entities-corporations specialized in the business of bringing buyers and sellers of stocks and securities together. The major stock markets in the world are New York Stock Exchange, Mumbai Stock Exchange, and London Stock Exchange etc. Participants in the stock market range from small individual stock investors to large fund traders. The purpose of a stock exchange is to facilitate the exchange of securities between buyers and sellers, thus providing a market place either virtual or real.

The history of stock market begins in 11th century from France where brokers managed and regulated the debts of agricultural communities on behalf of the banks. In the middle of the 13th century, Venetian bankers began to trade in government securities. The Dutch later started joint stock companies, which let shareholders invest in business ventures. In 1602, the Dutch East India Company issued the first shares on the Amsterdam Stock Exchange. It was the first company to issue stocks and bonds. In 1688, the trading of stocks began on a London Stock Exchange.

Stock exchanges play a vital role in the economy which includes raising capital for business, mobilizing savings for investment, facilitating company growth, redistributing of wealth, corporate governance, creating investment opportunities for small investors, capital-raising for development projects etc. http://wikipedia.org/wiki/stockmarket)

1.4 Nepal Stock Exchange (NEPSE)

1.4.1 Introduction:-Nepal Stock Exchange, in short NEPSE, is a non-profit organization, operating under Securities Exchange Act, 1983. The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating 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.

1.4.2 History: - The history of securities market began with the floatation of shares by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. in 1937. Introduction of the Company Act in 1964, the first issuance of Government Bond in 1964 and the establishment of Securities Exchange Center Ltd. in 1976 were other significant development relating to capital markets. Securities Exchange Center was established with an objective of facilitating and promoting the growth of capital markets. Before conversion into stock exchange it was the only capital markets institution undertaking the job of brokering, underwriting, managing public issue, market making for government bonds and other financial services. Nepal Government, under a program initiated to reform capital markets converted Securities Exchange Center into Nepal Stock Exchange in 1993.

1.4.3 Members: - 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 member brokers and 2 market makers, who operate on the trading floor as per the Securities Exchange Act, 1983, rules and bye-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 (Dealer) works as individual portfolio manager. At present there are 11 sales and issue manager and 2 dealers (Secondary market).

The tenure of the membership is one year. The license should be renewed within 3 months after the closure of the fiscal year. If not, it can be done within another three months by paying 25% penalty

1.4.4 Trading: - NEPSE the only Stock Exchange in Nepal introduced fully automated screen based trading since 24th August, 2007. The NEPSE trading system is called ‘NEPSE Automated Trading System ‘(NATS) is a fully automated screen based trading system, which adopts the principle of an order driven market.

1.4.5 Market Timings:- Trading on equities takes place on all days of week (except Saturdays and holidays declared by exchange in advance). On Friday only odd lot trading is done.

The market timings of the equities are:-

Market Open: - 1 2:00 Hours
Market Close: - 15:00 Hours

Odd Lot Trading is done on Fridays. For Odd Lot Trading Market Timings are

Market Open: - 12:00 Hours
Market Close: - 13:00 Hours

Note:- The exchange may however close the market on days other than schedule holidays or may open the market on days originally declared as holidays. The exchange may also extend, advance or reduce trading hours when it deems fit necessary.

1.4.6 Securities Available for Trading:- NEPSE facilitates trading in the following instruments

A. Shares
• Equity Shares
• Preference Shares
B. Debentures
C. Government Bonds
D. Mutual Funds

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

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

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

- In case of 4% movement either way, there would be a market halt for half an hour if the movement takes place before 14:00 hours. In case this movement takes after 14:00 hours there will be no trading halt at this level and market shall continue trading.
- In case of 5% movement in either way, trading shall be halted for the remainder of the day.

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

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

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

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

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

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

1.4.13 Settlement:- NEPSE has adopted a T+3 settlement system. Settlement will be carried out on the basis of paper verses payment. The trading is done at "T" and at T+1; the buying brokers have to submit bank vouchers for settlement with covering letter. At T+2, the selling brokers must submit share certificate with covering letter. At T+3, NEPSE prepares billing for payment and this will be forwarded to the bank.

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

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

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

1.4.15 Brokerage

A. Brokerage for equity

S.No	Trading Amount	Brokerage %
1	Up to 50,000	1
2	> 50,000 & < 5,00,000	0.9
3	> 5,00,000 & < 10,00,000	0.8

B. Brokerage for Government Bond

S.No	Trading Amount	Brokerage %
1	Up to 5,00,000	0.20
2	> 5,00,000 & < 50,00,000	0.10

3	> 50,00,000	0.5

C. Brokerage for all other stocks which is not listed in 1 and 2.

S.No.	Trading Amount	Brokerage %
1	Up to 50,000	0.75
2	> 50,000 & < 50,00,000	0.60
3	> 50,00,000	0.40

(Source: www.nepalstock.com)

1.5 Securities Board of Nepal (SEBON)

Securities Board of Nepal (SEBON) was established by the Government of Nepal on June 7, 1993 as an apex regulator of Securities Markets in Nepal. It has been regulating the market under the Securities Exchange Act, 2006. The functions, duties and powers of SEBON as per the Act are as follows.

- To offer advice to Government on matters connected with the development of the capital market.
- To register the securities of corporate bodies established with the authority to make a public issue of its securities.
- To regulate and systematize the issue, transfer, sale and exchange of registered securities.
- To give permission to operate a stock exchange to any corporate body desirous of doing so, subject to this Act or the rules and bye-rules framed under this Act.
- To supervise and monitor the functions and activities of stock exchange.
- To inspect whether or not any stock exchange is executing its functions and activities in accordance with this Act or the rules and bye-rules framed under this Act, and to suspend or cancel the license of any stock exchange which is not found to be doing so.
- To issue licenses to conduct the business of dealing in securities, subject to this Act, or the rules and the bye-rules framed under this Act, to companies or institutions desirous of conducting the business of dealing in securities.
- To supervise and monitor the functions and activities of securities-dealers.
- To grant permission to operate collective investment schemes and investment fund programs, and to supervise and monitor them.
- To approve the bye-rules concerning transactions in securities framed by stock exchanges and institutions engaged in the business of dealing in securities, and, for the

purpose of making necessary provisions concerning the development of the capital market and protecting the interests of investors investing in securities, issue orders to have necessary alterations made in such bye-rules of stock exchange and institutions engaged in the business of dealing in securities.

- To systematize the task of clearing accounts related to transactions in securities.
- To supervise whether or not security dealers are behaving in the manner prescribed in this Act, or the rules and the bye-rules framed under this Act, while conducting business of dealing in securities, and suspend the license to conduct the business of dealing in securities in case any securities dealer is not found to be behaving accordingly.
- To make or ensure necessary arrangements to regulate the volume of securities transacted and the procedure of conducting such transactions in order to ensure the promotion, development and clean operation of stock exchanges.
- To make necessary arrangements to prevent insider trading or any other offenses relating to transactions in securities in order to protect the interest of investors in securities.
- To review or make arrangement for reviewing the financial statements submitted by the corporate bodies issuing securities and security dealers, and issue directives deemed necessary in that connection to the concerned corporate body.
- To systematize and make transparent the act of acquiring the ownership of a company or gaining control over its management by purchasing its shares in a single lot or in different lots.
- To establish coordination and exchange cooperation with the appropriate agencies in order to supervise and regulate matters concerning securities or companies.
- To discharge or make arrangements for discharging such other functions as are necessary for the development of securities and the capital market.

The Governing Board of SEBON is composed of seven members including one full time chairman appointed by the Government for a 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 from amongst the experts pertaining to management of securities market, development of capital market, financial or economic sector.

There are seven departments and sixteen sections in the organization of SEBON. Under the Management Department, there are two divisions namely Human Resources Section and Finance Section. There are also four sections under the Planning and Development Department namely Research Section, Training Section, Information Technology Section and International Affairs Section. There are also two sections under the Corporate Finance Department namely, Public Issue Section and Collective Investment Scheme Section. Likewise, Under the Regulation Department, there are two sections namely, Stock Exchange Regulation Section and Market Intermediaries Regulation Section. There are also four sections under the Surveillance Department namely, Stock Exchange Surveillance Section, Market Intermediaries Surveillance Section, Trading Surveillance Section and Corporate Surveillance Section. Finally, under Legal Department, there are two sections Research and Investigation Section and Enforcement Section.

The major financial sources of SEBON are the government grant, transaction fee from the stock exchange and registration fee of corporate securities. Other financing sources include registration and renewal of stock exchange and market intermediaries and the income from mobilization of its revolving fund. (www.sebon.com)

1.6 Commercial Banks in Nepal

Nepal has a small and underdeveloped economy. As in any other economies, the commercials banks play a vital role in the economic development of the country through facilitating the intermediary process in between capital surplus and deficit units. The commercials bank plays a dual role of mobilizing as well as allocating the limited resources towards people's needs for the development of the economic system. Financial business in any country is determined by political, social and economic factors. Moreover, level of economic development, banking awareness, growth and habits of population services provided by banks, level of urbanization and income distribution are other key factors affecting financial business.

The history of modern bank begins from the establishment of Bank of Venice in 1157 A.D. Moreover, the growth of bank accelerated after the introduction of the Banking Act 1883 in the UK as it allowed opening of a joint stock company bank. In Nepal, the history of modern banking started following the enactment of Nepal Bank Act 1937 and the establishment of the first commercial bank-the Nepal Bank Ltd. Keeping in view the need for a central bank, Nepal Rastra Bank- a central bank was established in 1956 under Nepal Rastra Bank Act, 2012 B.S. Rastra Banijya Bank was established in 1966 under the full ownership of government as second commercial bank. Till 1984 the whole banking sector was dominated by two state owned commercial banks. Bank and banking activities accelerated only after the

adoption of a liberal economic policy in the mid 80's and the establishment of Nepal Arab Bank ltd in 1984 as a first joint venture commercial bank. Subsequently other joint venture banks were established with collaboration of foreign banks. (Shrestha, 2006)

Although the commercial banks were established with the concept of supplying the short term credit and working capital need of industries they have been providing long term loans also. Nepal Bank limited was established on 5 November 1937 as the first commercial bank and was followed by Rastriya Banijya Bank which was established on 23 January 1966. Nabil Bank was established in 1984 as the first joint venture commercial bank. Currently, there are 25 commercial banks operating in Nepal.

The primary functions of the commercial banks are to collect deposits, provide credit and remit funds. The subsidiary function are to invest in government securities, deal in foreign exchange, provide agency functions, purchase and sale of securities, underwrite, act as a trustee when nominated, supply trade information and statistical data etc. Commercial banks occupy a major role in the securities market in Nepal.

List of the Commercial Banks in Nepal.

S.No.	**Names**	**Operation Date (A.D.)**	**Head Office**	**Paid up Capital** *(Rs. In Million)*
1	Nepal Bank Limited	1937/11/15	Kathmandu	380.4
2	Rastriya Banijya Bank	1966/01/23	Kathmandu	1172.30
3	Agriculture Development Bank Ltd.	1968/01/02	Kathmandu	10777.50
4	NABIL Bank Limited	1984/07/16	Kathmandu	689.20
5	Nepal Investment Bank Limited	1986/02/27	Kathmandu	1203.00
6	Standard Chartered Bank Nepal Ltd.	1987/01/30	Kathmandu	620.80
7	Himalayan Bank Limited	1993/01/18	Kathmandu	1013.50
8	Nepal SBI Bank Limited	1993/07/07	Kathmandu	874.50
9	Nepal Bangladesh Bank Limited	1993/06/05	Kathmandu	744.10
10	Everest Bank Limited	1994/10/18	Kathmandu	831.40
11	Bank of Kathmandu Limited	1995/03/12	Kathmandu	603.10
12	Nepal Credit and Commerce Bank Ltd	1996/10/14	Siddharthanagar,Rupendehi	1275.80
13	Lumbini Bank Limited	1998/07/17	Narayangadh,Chitawan	750.00
14	Nepal Industrial & Commercial Bank Ltd	1998/07/21	Biaratnagar,Morang	792.00
15	Machhapuchhre Bank Limited	2000/10/03	Pokhara, Kaski	821.70
16	Kumari Bank Limited	2001/04/03	Kathmandu	900.00
17	Laxmi Bank Limited	2002/04/03	Birgunj, Parsa	732.00
18	Siddhartha Bank Limited	2002/12/24	Kathmandu	790.00

19	Global Bank Ltd.	2007/01/02	Birgunj, Parsa	700.00
20	Citizens Bank International Ltd.	2007/6/21	Kathmandu	560.00
21	Prime Bank Ltd	2007/9/24	Kathmandu	700.00
22	Sunrise Bank Ltd.	2007/10/12	Kathmandu	700.00
23	Bank of Asia Nepal Ltd.	2007/10/12	Kathmandu	700.00
24	Development Credit Bank Ltd.	2001/01/23	Kamaladi, Kathmandu	301.00
25	NMB Bank Ltd.	1996/11/26	Babarmahal, Kathmandu	1000.00

(Source: www.nrb.org.np)

1.7 Commercial Banks under Study

In this study, six commercial banks listed with the NEPSE are taken for analysis. The brief introduction of these banks is presented below:

1.7.1 Nepal Investment Bank Ltd (NIBL)

Nepal Investment Bank Limited is one of the commercial banks in Nepal. Nepal Investment Bank Limited of Nepal was previously known as Nepal Indosuez bank Ltd. Nepal Investment Bank Limited came into being in the year of 1986. The bank is situated in the Durbar Marg of Kathmandu.

The bank was the outcome of the joint venture of Nepalese and French partner. The French partner was Credit Agricole Indosuez. It was a subsidiary of largest banking group. The name of the bank was changed to Nepal Investment Bank with the approval of Nepal Rastra bank and company. The structure of the share holders include a group of companies who hold around 50% of the capital, Rashtriya Bank and Rashtriya Beema Sansthan holds around 15%. The other 20% is hold by General Public. With these achievements, the Nepal Investment Bank in Nepal a company has been enlisted in the Stock exchange of Nepal.

This bank is managed by experienced staff and bankers who have experience of more than decades. Professionalism is the motto of the bank. Reliability is also found here. This bank strives for utmost customer satisfaction. Safest and most secured money transfer is available here. Fast and reliable transfer is done here. NIBL has 21 branch offices.

(Source: www.mapsofworld.com/nepal/economy/investment-bank.html)

1.7.2 Standard Chartered Bank Limited (SCBL)

Standard Chartered Bank Nepal Limited has been in operation in Nepal since 1987 when it was initially registered as a joint-venture operation. Today the Bank is an integral part of Standard Chartered Group who has 75% ownership in the company with 25% shares owned

by the Nepalese public. The Bank enjoys the status of the largest international bank currently operating in Nepal.

Standard Chartered Group employs almost 60,000 people, representing over 100 nationalities in over 50 countries in the Asia Pacific Region, South Asia, the Middle East, Africa, the United Kingdom and the Americas. This diversity lies at the heart of the Bank's values and supports the Bank's growth as the world increasingly becomes one market.

With strong organic growth supported by strategic alliances and acquisitions and driven by its strengths in the balance and diversity of its business, products, geography and people, Standard Chartered is well positioned in the emerging trade corridors of Asia, Africa and the Middle East.

An integral part of the only international banking Group currently operating in Nepal, the Bank enjoys an impeccable reputation of a leading financial institution in the country. With 15 points of representation and 16 ATMs across the Kingdom and with around 350 local staff, Standard Chartered Bank Nepal Ltd. is in a position to serve its customers through a large domestic network. In addition to which the global network of Standard Chartered Group gives the Bank a unique opportunity to provide truly international banking in Nepal.

Standard Chartered Bank Nepal Limited offers a full range of banking products and services in Wholesale and Consumer banking, catering to a wide range of customers encompassing individuals, mid-market local corporates, multinationals, large public sector companies, government corporations, airlines, hotels as well as the DO segment comprising of embassies, aid agencies, NGOs and INGOs.

The Bank has been the pioneer in introducing 'customer focused' products and services in the country and aspires to continue to be a leader in introducing new products in delivering superior services. It is the first Bank in Nepal that has implemented the Anti-Money Laundering policy and applied the 'Know Your Customer' procedure on all the customer accounts. It has 11 branch offices and 4 extension counters in Nepal and its head office is located in New Baneshwor, Kathmandu. (Source: http://www.standardchartered.com/np)

1.7.3 NABIL Bank Ltd. (NBL)

Nabil Bank started operating in July 1984. The main aim of Nabil Bank of Nepal was to extend the service of international standard of modern banking in every sector of the society. Nabil Bank is a commercial bank, which has 19 branches in the country. The head office of the bank is located at Kamalkandi at Kathmandu, the capital city of Nepal. Most of its branches are at the capital city. However, it also has branches in Biratnagar, Birjang, Pokhra,Nepalganj and Butwal. Many new branches are opening shortly.

Nabil Bank Ltd has a very competent Board of Directors and the Management team. Mr. Anil Shah is the CEO of the bank. The day to day operations of the bank are taken care of by well trained people. Nabil Bank Ltd offers the customers various services, some of which are:

- Credit Cards
- ATMs
- Tele Banking
- Internet Banking or E-Banking
- Correspondent banking across 170 places in the globel

The Nabil Bank is also referred to as the International Public Company. World famous software from Infosys is installed in the bank for operating smoothly. Nabil Bank Ltd has Nabil Prepaid or Coolcash, which is unique and highly popular among people. Some of the features of Nabil Prepaid card are:

- Expenses tracking and monitoring
- Status and image symbol
- Cash carrying not required
- Can be used anywhere
- Issue is instant

The bank has 28 branch offices across Nepal and its head office is situated in Kathmandu. (Source: http://www.mapsofworld.com/nepal/economy/nabil-bank.html)

1.7.4 Everest Bank Ltd (EBL)

Everest Bank Limited (EBL) started its operation in 1994 with a view and objectives of extending professionalized and efficient banking services to various segments of the society. Punjab National Bank (PNB), the joint venture partner of the bank holds 20% equity of EBL. PNB is the largest nationalized bank in India having 113 years of banking history. PNB is a technology driven bank serving over 35 billion customers through a network of over 4500 branches spread all over the country with a total business of around INR 2178.74 billion.

EBL provides a full range of commercial banking services. The bank has 27 branch offices, one representative office in New Delhi and its head office is located in New Baneshwor, Kathmandu.
(Source: http://www.everestbankltd.com)

1.7.5 Bank of Kathmandu (BOK)

Bank of Kathmandu Limited has become a prominent name in the Nepalese banking sector. The Bank would like to express our sincere gratitude to our customers, shareholders, employees and other stakeholders for their support and co-operation for leading the bank to the present height of achievements. The bank wish to reiterate here that whatever activity we undertake; we put in conscious efforts to glorify our corporate slogan, “We make your life easier”.

The bank would also like to elucidate that Bank of Kathmandu is committed to delivering quality service to customers, generating good return to shareholders, providing attractive incentives to employees and serving the community through stronger corporate social responsibility endeavor. Bank of Kathmandu Limited (BOK) has today become a landmark in the Nepalese banking sector by being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public.

BOK started its operation in March 1995 with the objective to stimulate the Nepalese economy and take it to newer heights. BOK also aims to facilitate the nation's economy and to become more competitive globally. To achieve these, BOK has been focusing on its set objectives right from the beginning. To highlight its few objectives:

- To contribute to the sustainable development of the nation by mobilizing domestic savings and channeling them to productive areas
- To use the latest banking technology to provide better, reliable and efficient services at a reasonable cost
- To facilitate trade by making financial transactions easier, faster and more reliable through relationships with foreign banks and money transfer agencies
- To contribute to the overall social development of Nepal

The bank has 23 branch offices and its head office is located in Kamaladi, Kathmandu. (Source: http://www.bok.com.np)

1.7.6 Himalyan Bank Ltd (HBL)

Himalayan Bank Limited of Nepal, established in 1992 is new in the banking sector. It is a product of the collaboration of famous business personalities of Nepal along with the employees of the Provident Habib Bank Ltd., Pakistan. Besides all the commercial services that a bank renders, the HBL also has the provision for the merchant and industrial banking.

The Himalayan Bank Limited is the first commercial bank, which holds the maximum share of the private sector of Nepal. At present there are five branches of the bank in the Kathmandu Valley, the Head Office being in Thamel Kathmandu. The other three branches are located in Tandi, Bharatpur and Birganj. Himalayan Bank Limited has had the privilege to operate a counter in the campus of the Royal Palace. HBL has further plans to expand its branches across Nepal.

The CEO of Himalayan Bank Limited is Mr. Ashoke Rana. There are also three General Managers who comprise of the Board of Directors. Himalayan Bank Limited, functions on the motto "Bank with a Difference". It is open 5 days a week from 9:30 am to 3:30pm. The bank promises dedicated and courteous services to all its clients from every strata of the society. Since, it is relatively new it comes up with new and fascinating products to keep itself abreast of the international standards. Few facilities are:

- Tele- Banking
- Credit Card
- Any Branch Banking
- 24 Hours Banking.
- ATM
- Correspondent Network

The Himalayan Bank Limited has won many prestigious awards like the Bagmati National Excellence Award- 2003 and the Number 1 Bank of Nepal 2003- 2006 by the Banker's Almanac Britain. It has 17 branch offices and its head office is located in Thamel, Kathmandu.
(Source: http://www.mapsofworld.com/nepal/economy/himalayan-bank-limited.html)

1.8 Statement of Problem

Ordinary shares comprise the largest category of securities in the corporate business in Nepal listed with the Nepal Stock Exchange. Price of the common stock in the primary market is at par value, however, the price of the common stock in the secondary market is either under priced, over priced or at par and the stock price changes continuously in the secondary market due to internal (organizational) and external (political, economic, financial) factors. Moreover, the NEPSE index is sensitive to both internal and external factors.

The shares of the commercial banks play a vital role in the overall index of NEPSE and the overall index is highly influenced by the shares of the commercial banks. The sector wise contribution in total traded volume in NEPSE is mostly dominated by the financial sector. The shares of the publicly quoted commercial banks seem to be the basis of investment to all potential investors.

In the Nepalese stock market, investors do not analyze the financial indicators of the companies in which they are investing. Due to lack of investment opportunities investors invest without analyzing the financial position of the companies. The market price of the common stock is not generally determined by its financial indicators like the EPS, NWPS, DPS and DPR. The investors do not compare current assets with current liabilities or look at the debt equity ratio while investing. However, these days' investors are increasingly becoming aware on the need to analyze the financial situation of the commercial banks before making investment.

Immediately after the April movement in 2006 (Janandolan II) and the successful holding of the CA election, there was considerable increase in the NEPSE Index probably due to increased investors confidence after the ceasefire on the expectation of favorable business environment. However, NEPSE index experienced a considerable decline in January, February and March and first half of April 2007. Disturbance in Terai and a halt in customs operations at main custom points have had a negative effect on the market due to low investors' confidence. Additionally, most of the commercial banks have completed their AGM's hence bonus share, right shares and dividends, if any, are already declared. During this period the SENSEX also experienced a decline. (Agrawal, Different Issues) However, the second week of April showed a slight increase in NEPSE which might be due to increased investor's confidence after the formation of the CPN-M included interim government and comparatively calm environment in Terai. However, NEPSE demonstrated a fluctuating trend for the month of May. Again after the declaration of the date for the CA election, the NEPSE showed a record breaking increase which continued until December. The NEPSE Index showed a slight decline due to Andolan by the Madhesh political parties and different ethnic groups during January and February 2008. However, the NEPSE again increased after political settlement between the government and the agitating parties in March and successful holding of the CA election. The uncertainty in the political front seems to have affected the stock market.

In order to verify results and statements of the above studies to some extent, this study assesses the problems and prospects of capital market in Nepal, at Government and Corporate levels. To sum up, the study deals with the following issues.

- What is the securities market?
- How is the growth and development of securities market in Nepal?
- How is the trend of stock price behaviour of listed commercial banks in Nepal?
- What is the present financial position of the selected commercial banks?
- What is the relationship of MPS with various financial indicators like EPS, NWPS and DPS?
- What are the degrees of risk involved in the common investment of the listed commercial banks?
- What the responsible factors of the commercial banks in are under priced/over priced or equilibrium priced?
- Are there sufficient stock brokers in the stock market?
- What are the investing behaviours of the general people?
- What kind of changed came out in Nepalese stock market after second Jana Aandolan, signing of the CPA between Government and Maoist and successfully completion of the CA election?
- How does the stock market affected by the political situation of the country?
- Who are the responsible for development of the securities/capital market in Nepal?
- What are the role of Government, Securities Board of Nepal, and Nepal Stock Exchange to develop and promote of the healthy and competitive stock/capital market in Nepal?

1.9 Objectives of the Study

The study is undertaken basically to determine and analyze the stock price behavior of the selected listed commercial banks in NEPSE. The specific objectives of this study are as follows:

1. To study and to analyze stock price trend and volume of stock traded in the secondary market.
2. To study the present financial position of the commercial banks and examines and evaluates relationship of MPS with various financial indicators like EPS, NWPS and DPS.

3. To analyze the degree of risk involved in the common stock investment of the commercial banks.
4. To determine whether the stocks of the commercial banks are under priced/over priced or equilibrium priced.
5. To examine and study the impact of the signaling factors on the stock price of the commercial banks.
6. To provide a set of recommendations based on the findings of the study to the concerned.

1.10 Limitations of the Study

This study is conducted as a partial fulfillment of the requirements for the Master of Business Studies. There are certain limitations to this study which are as stated below:

1. Among the various commercial banks, the study will be based on six commercial banks listed with the NEPSE.
2. The study is conducted based on the available secondary data and information. Therefore, the consistency of findings and conclusions are dependent upon the reliability of those data and information.
3. The study covers the period of six years, hence the result confines to that period only.
4. Only few financial and statistical tools is used in the study.
5. The study only focuses on the commercial banks which are a part of total capital market; hence the conclusion drawn from the study cannot generalize the total capital market.

1.11 Significance of the Study

The study focuses on the stock price behavior of the commercial banks, so the study is particularly significant to the investors, mangers, bankers, stock analyst, brokers, government officials, academicians, students and any other stakeholders who are interested in understanding the share price behavior of the commercial banks.

Investors invest money with the expectation of acquiring good returns from their investment. This study analyzes financial situation of the commercial banks and performance of its traded stock. Therefore, the study is significant to investors and general public to help them undertake rationale decisions while investing in the stock of the commercial banks. Moreover, the study provides insight over the financial position and capitalization status of the commercial banks. The bank management can analyze the financial position and performance of their traded stock to undertake necessary steps for its improvement. Since, the

study provides general picture of the existing share market, it is significant to the government and the policy making agencies to prepare/ change policies in a timely manner for efficient functioning and growth of stock market.

In addition, the study would also be useful to stock analyst, brokers and any persons actively involved in stock market. Moreover, the study is significant to academicians and students who are willing to learn about the stock price behavior of the commercial banks and also to those who wanted to pursuer their career in banking or share business. Taking all the above issues into consideration, this study will analyze the stock price behavior of the listed commercial banks.

1.12 Organization of the Study

This study is organized into five chapters. Each chapter describes on some aspects of the study.

Chapter I - Introduction

This chapter consists of general background, objectives, significance, limitations and organization of the study.

Chapter II - Review of Literature

This chapter consists of review of books, articles, journals and past Master degree dissertations relevant to the study.

Chapter III - Research Methodology

This chapter consists of research design, sample and population, nature and sources of data and methodology adopted on carrying out the study.

Chapter IV- Data Presentation and Analysis

This chapter consists of analysis, evaluation and presentation of available data and information.

Chapter V- Findings, Conclusions and Recommendations.

This chapter consists of the major findings, conclusions and recommendations based on analysis and presentation.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

Review of literature means reviewing research studies and other relevant propositions in the related area of the study so that all the past studies, their conclusions and deficiencies may be known and further research can be conducted. (Joshi, 2001) Review of literature is the review of concepts as well as review of past researches in the related field of study. The purpose of review of research is to know the out comes of the past research in the proposed areas of studies where similar concept and methodology had been used successfully. Review of literature will help researcher to formulate satisfactory structure of the report. It also helps to familiarize with concepts, characteristics, interpretation and terminology used in the report. (Joshi, 2001)

To review the related studies or researches in the field of Share Price Behaviour of the Commercial Banks, related research works and studies were reviewed by reviewing books, articles, researches and dissertations etc.

2.2 Conceptual Review

2.2.1 Common Stock

In financial markets, stock capital is raised by a corporation or a joint stock company through the issuance and distribution of shares. A person or organization that holds at least a partial share of stock is called a shareholder. In the United Kingdom, South Africa and Australia, the terms *stock* and *share(s)* are used the same way, but *stock* can also refer to completely different financial instruments such as government bonds or, less commonly, to all kinds of marketable securities.(www.investorguide.com) The history of issuing shares dates back to the roman times. The first company to issue shares of stock after the Middle Ages was the Dutch East India Company in 1606. The issue of stock was made to pool the finance for the building of ships. Before adoption of the joint-stock corporation, an expensive venture such as the building of a merchant ship could be undertaken only by governments or by very wealthy individuals or families. (www.en.wikipedia.org)

A security that represents ownership in a corporation. Holders of common stock exercise control by electing a board of directors and voting on corporate policy. Common stockholders are on the bottom of the priority ladder for ownership structure. In the event of liquidation, common shareholders have rights to a company's assets only after bondholders; preferred shareholders and other debt holders have been paid in full.

In the U.K., these are called "ordinary shares". If the company goes bankrupt, the common stockholders will not receive their money until the creditors and preferred shareholders have received their respective share of the leftover assets. This makes common stock riskier than debt or preferred shares. The upside to common shares is that they usually outperform bonds and preferred shares in the long run. (http://www.investopedia.com)

Common stock also referred to as common or ordinary shares are the most usual and commonly held form of stock in a company. Common stock represents ownership in a company. The holders of common stocks, called shareholders or stockholders, are the legal owners of a company. The common stocks are the permanent and vital source of capital since they do not have a maturity date. The capital contributed by shareholders by purchasing common stocks, are entitled to dividends. The Company's Board of Directors fixes the amount or rate of dividend. The common stock is, therefore, known as the variable income security. Being the owner of the company the stockholders bear the risk of ownership, they are entitled to dividends after the claims of others have been satisfied. Similarly, when the company is liquidated, the owners of common stock are the last in the priority. They can exercise their claim on assets after the claims of other suppliers of capital have been met. (Pandey, 1995:905)

2.2.2 Capital Market

Long term investment in any organization is made through permanent financing and is represented primarily by long term debt, preference stock and common stock, but excluding all short term credit. (Weston and Brigham, 1998)

Capital market is the market place through which the entrepreneurs collect the long-term capital by mobilizing individual and institutional savings either directly or indirectly. (Bhattarai, 2002) The capital market can be classified into primary and secondary markets.

2.2.3 Primary Market

A market that issues new securities on an exchange. Companies, governments and other groups obtain financing through debt or equity based securities. Primary markets are facilitated by underwriting groups, which consist of investment banks that will set a

beginning price range for a given security and then oversee its sale directly to investors. Also known as "new issue market" (NIM). The primary markets are where investors can get first crack at a new security issuance. The issuing company or group receives cash proceeds from the sale, which is then used to fund operations or expand the business. Exchanges have varying levels of requirements which must be met before a security can be sold. Once the initial sale is complete, further trading is said to conduct on the secondary market, which is where the bulk of exchange trading occurs each day. Primary markets can see increased volatility over secondary markets because it is difficult to accurately gauge investor demand for a new security until several days of trading have occurred. (http://www.investopedia.com)

Primary market is the market where securities are sold to mobilize long term funds for the establishment and operation of the businesses. It is also known as original sale of securities. Primary market is also known as Initial Public Offerings (IPO) market because initial public offering is made through this market. In the primary market, securities can be sold either at par, discount or premium. However, Nepal Company Act 2053 restricts the selling of securities at discount. In Nepal, primary issue of the shares is conducted by investment bankers. (Bhattarai, 2002)

2.2.4 Secondary Market

Secondary market is the market place where securities once purchased through primary market are traded. Secondary market comprises stock exchange and over the counter market popularly known as OTC market. Stock exchange trades only the listed securities whereas unlisted securities are traded in OTC market. Stock exchange is therefore considered as an organized market whereas OTC is considered as an unorganized market. Nepal does not have OTC market and NEPSE is the only secondary market in Nepal. Secondary market provides liquidity and marketability to the listed securities.

2.2.5 Over-the-Counter (OTC) market

The second type of exchange is the virtual sort called an over-the-counter (OTC) market, of which the Nasdaq is the most popular. These markets have no central location or floor brokers whatsoever. Trading is done through a computer and telecommunications network of dealers. It used to be that the largest companies were listed only on the NYSE while all other second tier stocks traded on the other exchanges. The tech boom of the late '90s changed all this; now the Nasdaq is home to several big technology companies such as Microsoft, Cisco, Intel, Dell and Oracle. This has resulted in the Nasdaq becoming a serious competitor to the NYSE.

On the Nasdaq brokerages act as market makers for various stocks. A market maker provides continuous bid and ask prices within a prescribed percentage spread for shares for which they are designated to make a market. They may match up buyers and sellers directly but usually they will maintain an inventory of shares to meet demands of investors. In most foreign stock markets, companies having a negative net worth are normally de-listed from the stock market and sent to the OTC market. Market analysts said operation of the OTC market would provide an alternative opportunity for traders. One new investment instrument has entered the market, which will help to advance and promote them.

In the case of Nepal, The Securities Board of Nepal (SEBON) recently gave the approval to NEPSE to operate the OTC market in Nepal. In a statement, SEBON said all 38 companies that have been delisted would be automatically listed in the OTC market. Absence of an OTC market had been preventing investors in de-listed companies from selling their shares. The stock market had submitted the OTC Market Regulations to SEBON three years ago for its approval.

2.3 Theories of Stock Price Behavior

There are two theories to explain the stock price behavior: conventional theory and efficient market theory. Market efficiency is the basis for both the theories.

Conventional approach assumes that market is inefficient and it includes Fundamental Analysis Theory and Technical Analysis Theory. Efficient Market Theory assumes that the market is efficient and it includes weak form, semi-strong form and strong form market efficiency. “Prior to the development of the efficient market theory, investors were generally divided into two groups’ fundamentalists and technicians.” (Reily, 1986:347)

2.3.1 Conventional Approach

Conventional Approach assumes that the market is inefficient. There are two theories to support this approach: Technical Analysis Theory and Fundamental Analysis Theory.

Technical Analysis Theory

Technical analysis theory is the study of past volume and price data of the stock to predict future price movements. Technical analysis is a market oriented philosophy and it depends on the force of supply and demand for shares as reflected in the market rather than in the intrinsic value of the shares. Technical analysis assumes that at least some of the shifts in the supply and demand occur gradually over time rather than instantaneously. When shifting prices are detected, they are presumed to be the result of gradual shifts in supply and demand

rather than a series of instantaneous shift that all coincidentally happen to be moving in the same direction. (Clark, 1997:538)

Technical analysts believe in the history and that history repeats itself. Consequently all their prediction and chart are based on history. Past figure and trends are used to predict the future. This theory is also the study of the internal stock exchange information. Technical analysis is based on the widely accepted premise that security price are determined by supply of and demand for securities. The tools of technical analysis are therefore designed to measures certain aspects of supply and demand. Timing-predicting short-term price movements in either individual stock or a market indicator are the objectives of technical analysis. The main assumptions of the technical analysis theory are: (Edwards and Magee, 1958: 86)

1. Market value is determined by the interaction of demand and supply.
2. Supply and demand are governed by numerous factors, both rational and irrational.
3. Security prices tend to move in trends that persist for an appreciable length of time, despite minor fluctuations in the market.
4. Changes in a trend are caused by shifts in demand and supply.
5. Shifts in supply and demand no matter why they occur can be detected sooner or later in charts of market transactions.
6. Some chart patterns tend to repeat themselves.

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

“The technician believes the forces of supply and demand are reflected in patterns, they predict together prices are moving higher or lower, and even by how much. In the narrowest sense, the technician believes that price fluctuation reflect logical and emotional force. They further believe that price movements whatever their cause, once in force persist for some period of time and can be detected.” (Fisher and Jordan, 1995: 510) On the basis of the technical theory, many have endeavored to forecast the future of the stock market.

Various studies have shown that technical analysis is a useful tool in enabling investors to understand the market as it is easier, faster and can be simultaneously applied for more stocks. Technical analysis attempts to predict future stock price by analyzing past stock prices. In general, tomorrow’s stock price is influenced by today’s stock price. Technical analysts use different tools like Vulnerable Dow Theory, Bar Charts, Contrary Opinion Theory, Confidence Index, Breadth of Market, and Relative Strength Analysis to predict the future price of the stocks. With these various tools, the technicians attempt to correctly predict changes in trend and take advantage from it.

Fundamental Analysis Theory

In the fundamental approach, the security analyst or prospective investor is primarily interested in analyzing factors such as economic influences, industry factors as well as pertinent company information such as product demand, earnings dividends and management in order to calculate an intrinsic value for the firm's securities. They reach on an investment decision by comparing this value with the current market price of the security. Fundamentalists are concerned with such matters as future earnings and dividends. It is some times said fundamental analysis is designed to answer to question "what?" (Sharpe, Jordan and Jeffery, 2000: 844)

Fundamental theory assumes that knowledge about the future of companies is not perfect, some stocks are under-priced and others are over-priced. The investor task is to study certain fundamental factors that may enable them to select undervalued stocks for purchase and sell overvalued stock. These fundamentals are the historical profitability of an industry, the leading companies in the industry, the economic outlook for the profitability of the industry as a whole, and the outlook for general economy. The potential investors then estimate the value of one company by comparing the history and expected future of this company with competing firms.

Fundamental analysts work to find new information before other investor so they can get into a position to earn profit from price changes they anticipated. "Fundamental analysis uses different models like Top-Down versus Bottom-up Forecasting, Probabilistic Forecasting, Econometric Models, and Financial Statement Analysis to estimate the value of securities." (Sharpe, Jordan and Jeffery, 2000: 850-853) The fundamental analyst reaches to an investment on the basis of the forecast of these analytical tools.

Although fundamental analysis approach is used by many security analyst or prospective investors to predict stocks value with a risk-return framework based upon earning power and the economic environment, it is hard and time consuming to use.

2.3.2 Efficient Market Theory

The efficient market theory states that it is not possible to consistently outperform the market by using any information that the market already knows, except through luck. In efficient market theory, information is defined as anything that may affect prices that is unknowable in the present and thus appears randomly in the future. (www.wikipedia.org) Efficient market theory contends that in free and perfect competitive market security prices fully reflect all available information and adjust instantaneously every influx of all available new information.

The main assumption of market efficiency are (1) all investors have costless access to currently available information about the future (ii) all investors are good analysts and (iii) all investors pay close attention to market price and adjust their holdings appropriately. (Summer, 1975) In an efficient market, securities price will be a good estimate of its investment value, where investment value is the present value of securities future prospects, as estimated by well informed and capable analysts, and can be thought of as the securities fair value. The (perfectly) efficient market is one in which every security's price equals its investment value at all times. A market is said to be efficient if it is impossible to make abnormal profits by using a particular sets of information to formulate buying and selling decisions. (Sharpe, Jordan and Jeffery, 2000:106) In a perfectly efficient market, each securities sells for its fair value at all times and any attempts to identify mis-priced securities is futile. In such a market, a set of information is fully and immediately reflected in market price. (Norby, 2000:3)

In an efficient market, investors expect to make only normal profits and earn a normal rate of return on their investments. In such a market, any new information is immediately and fully reflected in price. New information is just that new, meaning a surprise. In a perfectly efficient market, price changes are close to random. (Sharpe, Jordan and Jeffery, 2000: 106) There are three common forms in which the efficient market theory is commonly stated — weak form efficiency, semi-strong form efficiency and strong form efficiency, each of which have different implications for how markets work. These three hypotheses are not mutually exclusive they differ only in the degree of market efficiency.

Weak-Form Efficiency

In a weak-form efficient market current share prices are the best, unbiased, estimate of the value of the security. Theoretical in nature, weak form efficiency advocates assert that fundamental analysis can be used to identify stocks that are undervalued and overvalued. Therefore, investors looking for profitable companies can earn profits by researching financial statements. (www.wikipedia.org)

"Weak form market efficiency hypothesizes that today's securities price fully reflects information contained in historical security prices. It implies that no excess returns can be earned by using investment strategies based on historical share prices or other financial data." (Weston and Copeland, 1987:94)

Weak-form efficiency implies that technical analysis techniques will not be able to consistently produce excess returns, though some forms of fundamental analysis may still provide excess returns.

Semi-strong Form Efficiency

The semi-strong form efficient market states that securities price fully reflect all publicly available information. (Fransis, 1997:608) Thus, no investor could earn excess return using publicly available resources such as corporate annual reports, NEPSE price information or published investment advisory report.

In semi-strong form efficient market, share prices adjust within an arbitrarily small but finite amount of time and in an unbiased fashion to publicly available new information, so that no excess returns can be earned by trading on that information. In semi-strong form efficiency, the adjustments to previously unknown news must be of a reasonable size and must be instantaneous. Moreover, if there is consistent upward or downward adjustments after the initial change, it would suggest that investors had interpreted the information in a biased fashion and hence in an inefficient manner. Semi-strong form efficiency implies that fundamental analysis techniques will not be able to reliably produce excess returns. (www.wikipedia.org)

Strong-Form Efficiency

"The most stringent form of market efficiency is the strong form which asserts that prices fully reflect all information both public and non public." (Jones, 1943:429) In such a market, no investors would be able to earn, over a reasonable period of time, excess rate of return by using publicly available information. Moreover, the strong form states that stock prices fully reflect all public and private information and no one can earn excess returns. Moreover, if there are legal barriers to private information becoming public, as with insider trading laws, strong-form efficiency is impossible, except in the case where the laws are universally ignored. (www.wikipedia.org)

There are criticisms to the strong form market efficiency theory. Economists, mathematicians and market practitioners do not believe that man-made markets are strong-form efficient when there are many reasons for inefficiency including the slow diffusion of information, the relatively great power of market participants like the financial institutions, and the existence of apparently sophisticated professional investors. The way that markets react to surprising news is perhaps the most visible flaw in the efficient market hypothesis. (www.wikipedia.org)

2.4 Review of Journals and Articles

Review of articles, journals and bulletins are important for research. The review of articles and journals gives a clear insight on the developments and updates in the area of research. In this section, articles and journals related to Nepalese stock market and its behavior is reviewed.

Paudel, Narayan Prasad (April 2002) conducted a research on "Investing in Shares of Commercial Banks in Nepal: An Assessment of Return and Risk Elements". This paper tried to determine whether the shares of commercial banks in Nepal were correctly priced and to trace their future price movements when striving towards equilibrium. For this, some theoretical models were discussed to analyze return and risk characteristics of those shares. The correlation coefficients between the returns on individual shares and the return on market portfolio were analyzed with the objective of decomposing the total risk into systematic and unsystematic components. The analysis of the individual stock's beta coefficient helped determine the minimum rate of return required by the investor to compensate for systematic risk. Statistical results suggested that the analyzed shares here were not in equilibrium with most of the shares being less risky than the market. While all the shares examined appear to be attractive to the potential investors since they produce higher rates of return than that of the average stock, the various shares had different degrees of risk with some shares being unable to generate the minimum rate of return (i.e. the sum of risk free-rate plus a premium for additional risk bearing).

Joshi, Nayan Krishna (May 2006) conducted a research on "Day-of-the-Week Effect: Is it an Industry-Specific Phenomenon?" In his study, the researcher had reexamined the day-of-the-week effect in stock returns for Nepalese Stock market using broad index and industrial indices by accounting for the beginning of the week difference for the sample period 1995 to 2005. The study was particularly motivated by Joshi and K.C. (2005) who reported the Thursday effect for broad stock market Nepal Stock exchange (NEPSE) index and Brusa, Liu and Schulman (2003) who documented that Monday effect exists not only in broad stock market but also in most of the industrial indices for US stock market and thus is not an industry - specific phenomenon. The results of his studies indicated that the day-of-the-week effect did not exist in broad index but existed only in few of the industries and was thus the industry specific phenomenon. This finding was inconsistent to that observed for stock market of US. Moreover, disappearing phenomenon across industries was also observed in the research.

Bhattarai, Ram Chandra and Joshi, Nayan Krishna (2006) conducted a research on "Stock Returns and Economically Neutral Behavioral Variables Relationship in the Nepalese Stock Market".

Their research was conducted to assess the relationship between economically neutral behavioural variables and stock returns documented in Saunders (1993), Hirshleifer and Shumway (2003), Cao and Wei (2004, 2005) and Kamstra, Kramer and Levi (2003) by examining a stock market of a single small developing country-Nepal, Nepal Stock Exchange (NEPSE), that have received little attention in the literature. In particular the research was focused on three mood proxy variables, all continuous: two were the weather variables (cloud cover and temperature) and third one was a biorhythm variable (SAD). The results of their study showed that there was a significant relationship (positive) between stock returns and economically neutral behavioural variable represented by the cloud cover. This finding was inconsistent to that reported by Saunders (1993) and Hirshleifer and Shumway (2003) who observed significant negative relationship between stock returns and Cloud cover. With respect to temperature and SAD variable the researcher did not observe such significant relationship. The results were also inconsistent to the findings documented in Cao and Wei (2004, 2005) and Kamstra et al (2003) who reported the significantly negative relationship between stock returns and temperature and positive and significant relationship between stock returns and SAD variable respectively. The findings were however consistent for sub-period (the exception being first sample period) and for one of the industrial index examined. The overall results lead to the conclusion that Nepalese stock market is not efficient in the weak form of efficiency.

Nepali Times (January 2008) published an article on the "Stock Investment Behavior in Nepal". The article stated that the problems at the NEPSE are two fold. The first is that it is basically an extension of the casino, with people speculating rather than investing wisely. The other is that the volume of stocks is too low. Globally, the development of stock markets has only worked well when guided by institutional investors rather than individuals. In Nepal we have individual investors, led by some rogue insiders, who have turned it into a punters den. The stock exchange has been relegated to a racecourse, with betting dependent on the alcohol content in one‘s blood rather than rational thinking by one‘s brain. It also states that the NRB should regulate the market and the financial sector as an ongoing exercise, not just a reaction to the latest problem. It is vital that the financial sector is seen to be stable if the country is to build credibility as a place to invest in. The business sector also needs to pull up its socks. Corporate governance should be a way of life if Nepali companies are to compete in the global arena. Relying on insider trading or dodgy legislation will not work in the long run. Looking ahead, the stock exchange must provide the necessary avenues to assist in funding Nepal‘s economic growth, but this must be based on sound international practices. The article provides following suggestions: Make trading paperless to reduce speculation, Give the regulators stronger on-going powers, Give favorable tax breaks to mutual funds and

institutional investors so that individuals go through them instead of trading directly in the market, Acknowledge that stock investment is a long-term game and not a short-term gamble, and accept that decent returns will only occur if the market is healthy.

Hamropalo.com (April 2008) published an article on Nepal Stock Exchange (NEPSE). In its article it reported that although the stock market is considered a mirror of economy, the NEPSE did not reflect the overall performance in the economy. The NEPSE index is dominated by financial institutions. According to the data of 16 April 2008, the commercial banks group has 40.71 percent, Development banks group has 24.56 per cent and Finance company group has 22.70 percent weightage in the total NEPSE making it a total of 86.97 percent. The Hydropower group has only 6.40 percent and Insurance group has 5.63 percent weightage in sector-wise market distribution. The NEPSE index can completely be said as the banking index and not the real barometer of the economy. It mentions that until and unless more companies, including manufacturing companies, are listed in the NEPSE, it will not represent and reflect the real economy. Its rise or fall both has no rationale.

2.5 Review of Masters Degree Previous Dissertations

Review of past thesis and dissertations gives a clear insight of the work or the research previously conducted by the researchers and students in the respective field of study. Several researchers have conducted research on different aspects of share price behavior. These researches had mainly tried to study the share price behavior with the help of NEPSE index, volume of stock traded, impact of signaling factors on the NEPSE, the relationship of dividends and stock price and the behavior of the closing market price. Moreover, statistical tools like standard deviation, correlation coefficient, simple regression analysis and t-test etc were mainly used to study the stock price behavior, to examine the relationship of financial performances and stock price, to analyze the risk involved in stock investment and to explore the signaling effects in stock price. Moreover, there were very few researches which were primarily focused on the share price behavior of the commercial banks and this gives an important ground to conduct a research on the share price behavior of the commercial banks.

Out of many thesis and dissertations, some of the relevant thesis or dissertations on share price behavior which has been reviewed are as:

Adhikari, Nabin (2004) studied the behavior of share in the market in his thesis entitled “Share Price Behavior of Joint Venture Banks in Nepal”. He concluded that the shares of publicly quoted joint venture commercial banks were less risky as compared to the other average stocks traded in the stock-exchange. In his study, he has taken seven joint venture

commercial banks as a sample for examining the relationship as well as for using different indicators.

He concluded that good track record of the financial position; market penetration and continuous declaration of dividends encouraged the potential investors to buy the share of joint venture commercial banks. Therefore, the share of joint venture commercial banks emerged as the blue chips in the Nepalese stock market. In the securities market analysis it was found that all the banks under study were under priced and the potentiality of each banks in gaining in the market remained prevalent.

Gautam, Rekha (2005) conducted a research on "A Study on the Behavior of Stock Market Price in Nepalese Security Market". The main objectives of the research was to examine and study the price trend with the help of NEPSE index, volume of stock traded, impact of signaling factors on NEPSE, to find the correlation coefficient and regression analysis between the sampled companies and to analyze the closing market price of the sampled companies.

The major findings of the study were as follows: The price trend of the sampled companies was not in a predictable trend and the volume of the stock traded was in a fluctuating trend during the study period. The relationship between EPS and DPS and EPS and NWPS was positive. The regression analysis between the EPS and market price showed that all sample companies had positive regression coefficient which indicated that the price would increase at an average rate. The major signaling factors such as closure of major industries, closure of multinational companies and political demonstrations of four political parties played a major role in determining the NEPSE index. Gautam recommended formulating "Investors Protection Act" to remove difficulties such as transaction facilities in the stock market. She also stressed on the need of adopting one window policy to provide all services while granting approval.

Sapkota, Hari Darshan (May 2005) studied "Stock Price Behavior of the Listed Finance Companies in Nepal". He used financial and statistical tools like standard deviation, correlation analysis, beta coefficient, t-test etc to study the stock price behavior. In his study, he had taken ten finance companies as a sample and the sample period covered FY 1998/99 to FY 2003/04 for examining the relationship as well as for using different indicators. His study specifically aimed to study and analyze stock price trend and volume of stock traded in the secondary market, relationship between BVPS and MVPS of the finance companies and to analyze the risk and return associated in the common stock investment of the selected finance companies. The major findings of the study were as follows:

1. Among the various groups of industries commercial banks and manufacturing and processing group were in a dominant position in terms of volume and traded amount.
2. The beta coefficient which measured the risk of individual security in relative terms suggested that none of the shares of sample finance companies were at high risk. The shares of finance companies were less risky then those average stocks traded in the stock exchange due to good track record of their financial position, market penetration and continuous declaration of dividends.
3. The run test which measures the randomness of sample events suggested that the changes in the market price of the common stocks of selected finance companies were not random. In fact run in every finance company it was lower then expected. This indicated that market over reacted to the available information.
4. The correlation coefficient and the regression analysis revealed that there was no relation between the BVPS and the MVPS.

Sapkota in his research had concluded that compared to the position and performance of the stock market in Nepal, it was not able to gain strong economic position as expected due to market limitations like limited number of buyers and sellers, rigid government policies and weak position of corporate sector etc. He recommended formulating "Investors Protection Act" for removing stock market difficulties. Moreover, he also recommended that NEPSE, the regulatory body, should impose effective provisions to its members to control excessive price fluctuations and conduct periodic research on stock issues and avail the findings to the public which would help people make better investment decisions.

Baskota, Jyotsna (September 2007) conducted a research on "The Behaviour of Common Stocks in Nepalese Capital Market". The study has analyzed two commercial banks, two trading companies, one finance company, two manufacturing and processing companies, two insurance companies and one hotel listed in the NEPSE for FY 2000/01 to FY 2004/05. The study analyzed EPS, DPS, MPS and NWPS and used correlation Analysis and Regression Analysis to analyze the data.

The major findings of the study were: MPS was affected either positively or negatively by dividend as well as earnings of the organization. EPS, DPS and NWPS individually did not have consistent relationship with the market price of the stock. The pricing varied from one company to other but the EPS, DPS and NWPS jointly had significant effect in the market price of share. Moreover, the research also concluded that the Nepalese investors did not had adequate knowledge of capital market and were not qualified enough to analyze the market scenario and forecast share price. Commercial banking sector dominated the overall

performance of Nepalese stock market whereas Manufacturing, Trading and Hotel sectors showed weak performance.

The research also concluded that companies performance, disclosure of financial information, timely Annual General Meeting (AGM), political stability, national economy, demand and supply situation, security situation of the country were the major factors affecting the share price in NEPSE. However, interest rate, retention ratio, cost of equity, tax rate, gold price, exchange rate of US dollar, global economy, market liquidity and change in management of the company did not significantly affected the share price in NEPSE.

Dahal, Tulsi Prasad (December 2007) conducted a research on "Determinants of Stock Price of Listed Companies in NEPSE". The major objectives of this study was to determine the major financial indicators that has influenced the stock price, to study whether stock of the company were overpriced, under-priced or equilibrium priced and to study investors response regarding the change of stock price. The research used three banks, three finance companies, three insurance companies and three manufacturing companies as a sample of the study. Correlation and Regression analysis between different financial indicators and Market Price of the stock was conducted as a part of research. The major findings of this study were: Pricing behavior differed from companies to companies. Although DPS, BVPS and EPS jointly had significant effect on the share price, these financial indicators individually did not have consistent relationship with MVPS which indicated that there might be other major factors influencing and determining the share prices significantly. Analysis of the pricing status of the common stocks of the sample companies strongly concluded that none of the sample companies were equilibrium priced, some were overpriced whereas other were under-priced. He also added that if stocks were under-priced the demand in stock market heavily mounted up and insufficient supply of stocks caused price to rise. The research also concluded that the NEPSE stock market was in an infant stage and there was a gap between theory and practice of investment in Nepalese stock market due to lack of proper study of stock market.

Baniya, Bikram (February 2008) conducted a research on "Share Price Behaviour of Commercial Banks and Effect of Macroeconomic Variables in Nepalese Stock Market". The specific objectives of the study were to study and analyse stock price trend and behaviour of the selected commercial banks, draw the main influencing factors of share price and to examine the impacts of GDP, rate of interest and rate of inflation on NEPSE Index.

This study covered the period from FY 2001/02 to FY 2005/06. The researcher used monthly closing price of five commercial banks for analysis. Similarly, to establish the relationship

between the NEPSE index and the macroeconomic variables GDP, rate of interest and rate of inflation during the study period were taken. The research used regression analysis to see the effect of macro-economic variables on the NEPSE.

The major findings of this study were as follows: The graphical analysis and volatility test showed that stock price behavior of sample commercial banks was not even, some showed fluctuating trend whereas other showed moderate trend. The results of run test showed market price of selected commercial banks were not random which indicated that market overreacted to the available information. There was no significant relationship between GDP and NEPSE which indicated that higher annual NEPSE index did not have positive relationship with GDP. Similarly there was no supporting evidence to prove that the change in the market interest rate on deposit could have affected the NEPSE Index. The degree of impact in stock price due to the change in interest rate was conditional on corporate environment. If the corporate environment was bright enough the fall in the market interest on deposit increased the security price in the stock market and vice-versa. The trend of NEPSE index and the rate of inflation was not supporting with each other which proved that there was no significant relationship between NEPSE index and the rate of inflation. Finally, the study concluded that NEPSE was not influenced by macro economic variables.

2.6 Research Gap

The review of past dissertations and studies shows that similar research on the share price behavior has been conducted by different researchers in the past. The review shows that most of the studies were focused on different listed companies and not particularly on the commercial banks. Few researches which focused on the share price behavior of the commercial banks have tried to analyze the banking share price comparing it with its own financial indicators and with macroeconomic variables. These studies have also not particularly tried to analyze the Banking Index, Sensitive Index and the effects of signaling factors on the stock price. Moreover, the review also statistical tools such as correlation coefficient and regression analysis have often been used in most of these studies.

Keeping in view the above research gap, this research has analyzed the share price behavior of the commercial banks in which commercial banks such as Nepal Standard Chartered Bank, Nabil Bank Limited, Investment Bank Limited, Everest Bank Limited, Bank of Kathmandu and Himalayan Band Ltd has been used as sample banks. Unlike other researches the study has used statistical tools like multiple regression analysis, run test and beta coefficient to analyze the share price behavior. In additional effect of signaling factors like the effect of Janaandolan II, signing of CPA and postponement of CA election on the share price has also been analyzed. Moreover, compared to other past studies, this study has analyzed the share

price behavior from the FY 2001/02 until May 2008. This research has also analyzed the trend of Sensitive index and Banking SENSEX.

As this study has tried to fill the research gap of the past studies, this research on the share price behavior of the commercial banks is highly relevant.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

"Research Methodology refers to various sequential steps adopted by a researcher in studying a problem with certain objectives in view". The study is undertaken basically to determine and analyze the stock price behavior of the selected listed commercial banks in the NEPSE. This study will draw conclusion on the stock price behavior of the NEPSE including commercial banks and recommend strategies for effective investment opportunities. To accomplish this goal, following research methodology has been used.

3.2 Research Design

The study will analyze the share price as well as the banking price movement in the NEPSE. Moreover, the study will also examine the inter relationship of the Market Price Share of the selected commercial banks with its various financial indicators and the degree of risk involved in investment in the shares of these selected commercial banks. The adopted method of research design is a case study method. To conduct the study analytical descriptive research has been made from readily available data of the stock market. Financial data from annual reports of the selected commercial banks has also been used in the study.

3.3 Population and Sample

All companies listed with the Nepal Stock Exchange are considered to be the population of the study and the commercial banks listed and conducting share transactions in the NEPSE are taken as the sample of the study. At present there are 15 commercial banks listed with the NEPSE out of which following eight commercial banks are randomly selected for our analysis purpose.

1. Nepal Investment Bank Ltd. (NIBL)
2. Standard Chartered Bank Ltd (SCBL)
3. Nabil Bank Ltd. (NBL)
4. Everest Bank Ltd. (EBL)
5. Bank of Kathmandu (BOK)
6. Himalayan Bank Ltd (HBL)

As this study will try to explore the objectives set in the previous chapter, it is expected that this study will help analyze the stock market scenario in NEPSE as well as analyze individual commercial banks performance in relation to that of the similar other businesses. This study

is also aimed at producing tested effect of historical information on future price movements. Therefore, interested groups like the stock analyst, financial analyst, stock-brokers, and managers of the different companies as well as individuals can use the findings of this study.

3.4 Nature and Sources of Data

This study is based on secondary data only. The study has covered seven years time-span FY 2001/02 to FY 2007/08 and has included corporate securities only. Concerned commercial banks, SEBON and NEPSE are the major sources of required data. Required information and data are extracted from the annual reports and other periodic reports of the concerned commercial banks, NEPSE and SEBON and also downloaded from their official websites. In addition, some of the information and data are also pulled from the reports of previous studies, magazines, journals and reports of various government agencies like the Nepal Rastra Bank and the Ministry of Finance.

3.5 Method of Analysis

According to the needs and objectives of the study all data from the secondary sources are compiled, processed and tabulated. To achieve the predetermined objectives of the study following financial and statistical tools has been used.

3.5.1 Financial Tools

The tools which are used to measure financial performance of the organization from long term as well as short term point of view is called financial tools. Following financial tools has been used for the study:

3.5.1.1 Earnings Per Share (EPS)

Earning Per Share is the portion of the company's profit allocated to each outstanding share of common stock. EPS is generally considered to be the single most important variable in determining a share's price. It is calculated by dividing the profit available to the shareholders by the number of outstanding shares.

$$EPS \text{ X} \frac{Net \text{ Pr} ofit}{\text{Number of existing equity shares}}$$

3.5.1.2 Divided Per Share (DPS)

Dividend per Share is the amount of the dividend that the shareholders have (or will) receive, over a year, for each share they own. It is calculated as the net profit distributed to the shareholders divided by the number of outstanding shares.

$$DPS\ X \frac{\text{Amount provided to equity shareholders}}{\text{Number of outstanding shares}}$$

3.5.1.3 Dividend Payout Ratio (DPR)

The dividend payout ratio provides an idea of how well earnings support the dividend payments. DPR is the percentage of earnings paid to shareholders in cash. In general, the higher the payout ratio, the more mature the company. It is calculated by dividing Dividend per Share by Earning per Share.

$$DPR\ X \frac{DividendPerShare}{EarningsPerShare}$$

3.5.1.4 Net Worth Per Share (NWPS)

Net worth per Share is a measurement of the net worth of the company for each share of stock that has been issued. An increasing Net Worth per Share value is a positive sign, as this signals the company has reduced its liabilities and vice-versa. It is calculated as:

$$NWPS\ X \frac{NetWorth}{\text{Number of outstanding shares}}$$

3.5.1.5 Market Price Share (MPS)

Market price is just one of a number of ways of establishing the monetary value of a good or a transaction. It is the prevailing or the actual price of the share paid in the market transactions. For this study, year end closing price of NEPSE is taken as a Market Price Per Share.

3.5.2 Statistical Tools

The mathematical tools which are used to collect, present, analyze and interpret quantitative information in a clear and concise form is called statistical tools. Statistical tools give a clear insight to the viewers and also help to interpret and present the data more effectively. There are various statistical tools that can be used to present and analyze data. In this study, the main statistical tools used are as follows.

3.5.2.1 Rate of Return

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

Realized Rate of Return at a Time

$$R_J \text{ X } \frac{D_t \ \Gamma \ (P_t \ \text{Z} \ P_{t\text{Z}1})}{P_{t\text{Z}1}}$$

Where,

R_j = Realized Rate of Return at a Time

P_t = Current Market Price of Share

P_{t-1} = Market Price of Previous Year

D_t = Dividend in Cash

Expected Realized Rate of Return

$$\overline{R_J} = \frac{R_J}{n}$$

Where,

$\in R_j$ = Expected Realized Rate of Return.

n = Number of Observations in Sample.

3.5.2.2 Standard Deviation

The standard deviation (∃) is the other measure of investment risk. The smaller the Standard deviation the lower will be the degree of risk of the stock. It is useful in comparing sets of data which may have the same mean but a different range. It is quantitative measure of total risk of assets. It provides more information about the risk of asset. The standard deviation of a distribution is the square root of the variance of returns around the mean. The following formula is applied to calculate the standard deviation using historical returns.

$$\pm \text{X}\sqrt{\frac{(X\ \text{Z}\overline{X})^2}{n}}$$

Where,

∃	X	Standard Deviation
X	X	Number in X-series
€X	X	Mean
n	X	Number of Observations in a sample

Total risk (σ) can also be defined as the sum of systematic risk plus unsystematic risk. Systematic risk has its source factors that affect all marketable assets and thus cannot be diversified away. The sources of systematic risk are market-pervasive. The measure of systematic risk permits an investor to evaluate an asset's required rate of return relative to the systematic risk of the stock. Unsystematic (or company-specific or unique) can be reduced through diversification. The relationships among total risk, systematic risk and unsystematic risk are shown below.

Total Risk (σj) = Systematic risk + Unsystematic risk; with Systematic risk = (σj)(ρ jM) and Unsystematic risk = σj(1-ρ jM)

In the equations ρ jM is the correlation coefficient between the returns of a given stock (σ) and the return on market portfolio.

3.5.2.3 The Coefficient of Variation

The coefficient variation (CV) is the other useful measure of risk. It is the standard
Deviation divided by the expected return, which measures risk per unit of return. It provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same. If investors believe that the rate of return should increase as the risk increase, then the coefficient of variation provides a quick summary of the relative trade-off between expected return and risk.

$$CV\ X\frac{\pm}{\bar{X}}$$

Where,

CV X Coefficient of Variation

€X X Mean

± = Standard Deviation

3.5.2.4 Beta Coefficient

Beta Coefficient is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. It measures how a variation in the return on a particular share correlates with variations in the return on a market index. Beta is calculated for individual companies using regression analysis. Beta is a measure of risk and not to be confused with the attractiveness of the investment.

Stocks can be classified as aggressive or defensive or average depending on the value of beta coefficients.

Beta coefficient (β)	Stocks classification	Degree of risk
Exactly 1	Average stock	Equally risky as the market
Greater than 1	Aggressive stock	More risky than the market
Less than 1	defensive stock	Less risky than the market

Beta is calculated as follow:

$$_J\ X\frac{Cov(R_J R_m)}{\pm_m^2}$$

Where,

$\wp_j$ X Beta Coefficient of Stock j.

(R_jR_m) X Co-variance of the Return on Stock J and Market

$\exists^2_m$ X Variance of the Market

3.5.2.5 Correlation Coefficient

Correlation Coefficient indicates the strength and direction of a linear relationship between two random variables. It is generally used to measure the degree to which one variable is related to another. Correlation can either be negative or positive. If both variables are changing in the same direction, then correlation is said to be positive, but when the variation in the two variables takes in opposite direction, the correlation is negative. A correlation greater than 0.8 is described as strong, whereas a correlation less than 0.5 is described as weak. Simple correlation coefficient is computed by,

$$r \text{ X} \frac{N \quad XY \text{ Z}(\quad X)(\quad Y)}{\sqrt{N \quad X^2 \text{ Z}(\quad X)^2}\sqrt{N \quad Y^2 \text{ Z}(\quad Y)^2}}$$

3.5.2.6 Coefficient of Determination

The Coefficient of Determinations is defined as the proportion of the variance in the dependent variable that is explained by regression equation. It measures the contribution of independent variables in predicting the dependent variable. It can range in value from 0 to 1, with 1 indicating perfect fit. It is more appropriate while verifying the results than the correlation coefficient and is computed by square of the correlation coefficient as shown below.

$$Cooefficient of Deter\min ation \text{ X} r^2$$

Where,

r = Coefficient of Correlation

3.5.2.7 Simple Regression Analysis

Regression is the statistical tool, which describes the nature of relationship between two or more variables. It describes or estimates the value of the dependent variable on the basis of

one or more independent variables. Regression analysis attempts to measure the degree of correlation between the dependent and independent variables, thereby establishing the latter's predictive value. The simple regression equation of X on Y can be calculated as follow.

$$Y = a + bX$$

We shall get the normal equation for estimating ‘a’ and ‘b’ as:

$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

The coefficient ‘b’, is the slope of line of regression of Y on X and is also called as coefficient of regression of Y on X. It demonstrates the increment in the value of the dependent variable Y for a unit change in the value of independent variable X. In other words, “b” represents the rate of change. It is calculated as follows.

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

Similarly, the value of Y-intercept ‘a’ can be computed as follow.

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

Where,

Y = Value of Dependent Variable

X = Value of In-dependent Variable

a = Y-intercept

b = Slope of the Trend Line/ Coefficient of Regression

3.5.2.8 Multiple Regression Analysis

Multiple Regressions is a statistical technique which explains the relationship between several independent or predictor variables and a dependent or criterion variable. Multiple Regressions is a valuable tool used for quantifying the impact of various simultaneous influences upon a single dependent variable. The value of Coefficient of Determination

measures the amount of variation in the dependent variable that is accounted for by variation in the predictor variables. The Multiple Regression equation of dependent variable X_1 on two independent variables X_2 and X_3 is given by

$$X_1 = a_1 + b_1 X_2 + b_2 X_3$$

The values of constants a_1, b_1 and b_2 can be obtained by solving following three normal equations simultaneously

$$\begin{aligned} \sum X_1 &= n a_1 + b_1 \sum X_2 + b_2 \sum X_3 \\ \sum X_1 X_2 &= a_1 \sum X_2 + b_1 \sum X_2^2 + b_2 \sum X_2 X_3 \\ \sum X_1 X_3 &= a_1 \sum X_3 + b_1 \sum X_2 X_3 + b_2 \sum X_3^2 \end{aligned}$$

Where,

a_1 = X_1 Intercept

b_1 = Partial Regression Coefficient of X_1 on X_2 when X_3 is held constant

b_2 = Partial Regression Coefficient of X_1 on X_3 when X_2 is held constant

The coefficient of multiple determination of dependent variable X_1 on two independent variables X_2 and X_3 is given by

$$R^2 = \frac{a_1 \sum X_1 + b_1 \sum X_1 X_2 + b_2 \sum X_1 X_3 - n(\bar{X}_1)^2}{\sum X_1^2 - n(\bar{X}_1)^2}$$

Where,

R^2 = Coefficient of Multiple Determination

3.5.2.9 The Run Test

A run-test is a non-parametric test that checks randomness of hypothesis for a two-valued data sequence. More precisely, it is used to test the hypothesis that the elements of the sequence are mutually independent. The run test is used to decide if a data set is from a random process. In this research, run test is applied to test whether the MPS of the stocks of sample commercial banks is random. The value of Z is calculated through the procedure mentioned below.

Step: 1

The median of each sample commercial banks under the sample period is calculated by:

$$M_e \text{ X} \frac{(N \Gamma 1)^{th}}{2}$$

Where,

M_e = Median

N = Sample Size

Step: 2

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

Step: 3

Counting the number of each sign, the number of positive and zero signs is denoted by n_1 and the number of negative signs is denoted by n_2. The number of fluctuations in plus and minus is denoted by r. If either n_1 or n_2 is larger than 20, the sample is called large sample.

Step: 4

Developing the Hypothesis:

Null Hypothesis (H_0) : The MPS of the stocks of the sample commercial banks is random.

Alternative Hypothesis (H_1) : The MPS of the stocks of the sample commercial banks is not random.

Step: 5

Computing the value of Z under the large sample,

$$Z\ X\frac{r\ Z\ \frac{2n_1n_2}{n_1\ \Gamma n_2}\Gamma 1}{\sqrt{\frac{2n_1n_2(2n_1n_2\ Z n_1\ Z n_2)}{(n_1\ \Gamma n_2)^2(n_1\ \Gamma n_2\ Z 1)}}}$$

Where,

r = Number of runs

n_1= Number of positive and zero sign

n_2= Number of negative sign

Step: 6

Rejection region, according to the normal curve distribution, If the calculated value of Z is ±1.96 then the probability occurs 0.025 and for two tailed probability, it would be doubled 0.05 (i.e,2xp=2x0.025). Therefore, if the calculated value of Z in single sample is greater than ±1.96 the two tailed probability associated with occurrence under H_0 would be less than at the 5% level of significance (α=0.05)

Step: 7

If the value of calculated Z is less than the tabulated value of Z (according to Normal Curve Distribution) null hypothesis accepted and vice versa.

3.5.2.10 Testing of Hypothesis

A hypothesis test refers to the process of selecting and using a sample statistics to draw inference about a population parameter based on the sample drawn from the population. It is an algorithm used to choose between the alternatives (for or against the hypothesis) which minimize certain risks.

In testing the hypothesis, assumptions is made about the sample selection from the population and tested whether the assumption or hypothesis is correct or incorrect and than make a sound conclusion in the light of the sample observations. In testing the hypothesis the first step is to set the hypothesis and present it in a standard way. The two hypothesis in a statistical test are normally referred as Null Hypothesis (H_0) and Alternative Hypothesis (H_1).

In this study, test of hypothesis is conducted for Run Test and Regression Analysis.

Creation of Hypothesis under Run Test

Null Hypothesis (H_0) : The MPS of the stocks of the sample commercial banks is random.

Alternative Hypothesis (H_1) : The MPS of the stocks of the sample commercial banks is not random.

Creation of Hypothesis under Regression Analysis

Null Hypothesis (H_0) : MPS is independent of the respective variables. e.g. EPS

Alternative Hypothesis (H_1) : MPS is dependent of the respective variables. e.g. EPS

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter deals with data presentation, analysis and interpretation based on the research methodology explained in the previous chapter. The prime aim of this chapter is to analyze and elucidate the collected data following the conversion of unprocessed data to an understandable presentation. This chapter presents the analysis and interpretation of the stock price behavior of the commercial banks using financial as well as statistical tools.

4.2 Behavior of Market Index

Market index have always been of great importance in the world of security analysis and portfolio management. Both individual and institutional investors use the market index as 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. Technical analysis usually uses current market price movements to predict future movements in the stock market. Stock market indexes are used to study the trend of growth pattern in the economy, to analyze as well as to forecast business cycles and to correlate stock market indexes to economic activities. Index is also a device designed to measure the change in a group of related variables over a period of time. In this study, NEPSE Index, Banking Index, NEPSE SENSEX, market capitalization, number of listed and transacted companies and volume of stock traded is analyzed.

4.2.1 Annual Trend Analysis of NEPSE Index and Banking Index

In this study, index has been used as measuring tool to determine whether the performance of stock market is remarkable or not. It focuses on the price of stocks that is increasing or decreasing in the market due to the various changing variables. Higher index implies the increase in market price of securities and the better performance of companies and vice versa.

NEPSE follows the Standard and Poor's Index method for its calculation by taking the market capitalization of all listed securities based on February 12, 1994 prices as 100 (SEBON, 1998).

The following table shows the annual trend analysis of the NEPSE Index and Banking Index.

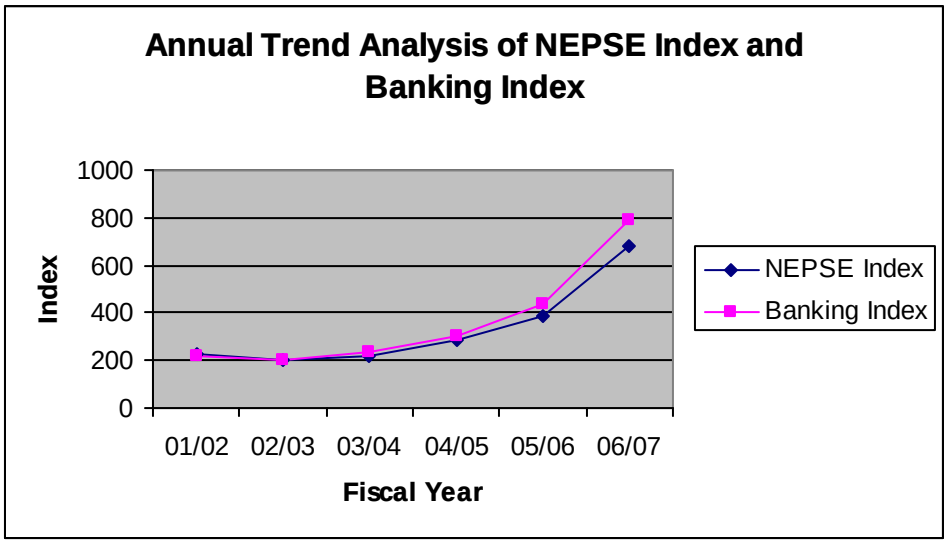
Table No: 1

Annual Trend Analysis of NEPSE Index and Banking Index

Fiscal Year	**NEPSE Index**	**% Change**	**Banking Index**	**% Change**
01/02	227.54	-	219.35	-
02/03	204.82	(9.98)	199.90	(9.73)
03/04	222.04	8.40	231.97	16.04
04/05	286.67	29.11	304.64	31.33
05/06	386.83	34.94	437.49	43.61
06/07	683.95	76.81	789.21	80.39

(Source: Annual Reports of NEPSE)

Figure No: 1



The above table shows the movement of NEPSE Index and Banking Index during the FY 01/02 to FY 06/07. The NEPSE Index shows an increasing trend except in FY 02/03 when it dropped from 227.54 in FY 01/02 to 204.82 in the FY 02/03. However, the NEPSE Index followed an increasing trend from FY 02/03 and reached to 683.95 in the FY 06/07. It shows that the market demonstrated a bearish trend in 02/03 but showed a bullish till the end of the study period.

Similarly, the Banking Index also shows an increasing trend except in the FY 02/03 when it dropped from 219.35 in FY 01/02 to 199.90 in FY 02/03. The Banking Index followed an increasing trend from FY 02/03 and reached up-to 789.21 in the FY 06/07. The Banking

Index also showed a bearish trend in 02/03 but in overall showed a bullish trend during the study period.

The overall growth in NEPSE Index during the study period is 200.58 % whereas the overall growth of the Banking Index is 259.79 %. Both the NEPSE and Banking Index has grown in an increasing number during the study period which shows satisfactory performance of the public limited companies listed in the stock exchanges including the commercial banks. The growth rate of the commercial banks is more than that of the NEPSE which indicates better performance of the commercial banks in comparison to the other public limited companies listed in the NEPSE. This trend also implies recovery economy in the country.

4.2.2 Monthly Trend Analysis of NEPSE Index and Banking Index

One of the techniques of analyzing the price trend is analyzing the monthly trend analysis which is based on the monthly price index of the NEPSE. In this study, monthly price index of the NEPSE and commercial banks during the FY 2007/08 is taken for analysis.

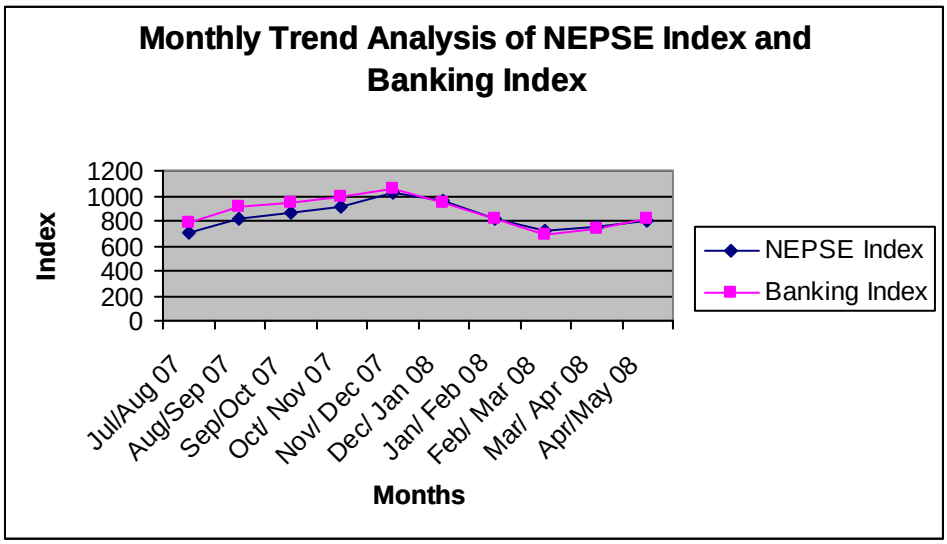
Table No: 2

Monthly Trend Analysis of NEPSE Index and Banking Index

Months	**NEPSE INDEX**	**% Change**	**Banking Index**	**% Change**
Jul/ Aug 07	705.9	-	782.55	-
Aug/Sep 07	817.08	15.87	917.58	17.26
Sep/Oct 07	861.37	5.42	936.27	2.04
Oct/ Nov 07	915.38	6.27	988.39	5.57
Nov/ Dec 07	1025.91	12.07	1056.27	6.87
Dec/ Jan 08	958.91	(6.53)	951.26	(9.94)
Jan/ Feb 08	814.43	(15.07)	817.63	(14.08)
Feb/ Mar 08	714.76	(12.24)	691.12	(15.44)
Mar/ Apr 08	746.69	4.47	739.56	7.01
Apr/ May 08	806.26	7.98	810.94	9.65

(Source: Monthly Reports of NEPSE)

Figure No: 2



The above table shows the movement of NEPSE Index and Banking Index during the month Jul/Aug 07 to Apr/ May 08. Both the NEPSE Index and Banking Index shows a fluctuating trend during the study period. The NEPSE index increased from 705.9 in the month Jul/Aug 07 to 1025.91 in Nov/Dec 07, however it declined for three consecutive months and dropped to 714.76 in Feb/Mar 2008. The Index again regained and increased to 806.26 in Apr/May 08.

Similarly, the Banking Index increased from 782.55 in the month Jul/Aug 07 to 1056.27 in Nov/Dec 07, however it declined for three consecutive months and dropped to 691.12 in Feb/Mar 2008. The Index again regained and increased to 810.94 in Apr/May 08.

The overall growth rate of NEPSE Index is 14.21 % whereas that of the Banking Index is 3.63 % during the study period. It shows the NEPSE experienced considerable volatility and the Banking Index showed even more volatility than the overall market. The volatility of NEPSE and Banking Index can be explained by the changing political scenario of the country. The consistent bearish trend in the month Dec/Jan 07 to Feb/Mar 08 can be attributed to the postponement of the CA election, Andolan by the Madhesi political parties and soaring energy crisis. The increase in the NEPSE Index after March 08 could be due to the political settlement between the government and Madhesi political parties as well as due to the successful conduct of the CA election which offered some sort of optimisms to the investors.

4.2.3 Monthly Trend Analysis of NEPSE SENSEX and Banking SENSEX

Sensitive Index which is also called SENSEX is an overall NEPSE index of all "A" class listed companies in the stock market. The SENSEX was introduced in the NEPSE from 31 December 2007 and is prepared by using mid-July 2007 as a base period. The SENSEX generally will reflect the true health of the stock market as only efficient companies are included in it. There are currently 71 companies listed as "A" class companies.

In this study, monthly NEPSE SENSEX and Banking SENSEX during the year 2007/08 is taken for analysis.

Table No: 3

Monthly Trend Analysis of NEPSE SENSEX and Banking SENSEX

Months	**NEPSE SENSEX**	**% Change**	**Banking SENSEX**	**% Change**
Jul/ Aug 07	181.47	-	181.95	-
Aug/Sep 07	210.94	16.28	212.69	16.89
Sep/Oct 07	225.82	7.05	223.73	5.19
Oct/ Nov 07	239.82	6.20	235.52	5.27
Nov/ Dec 07	265.05	10.52	250.51	6.36
Dec/ Jan 08	248.77	(6.14)	230.39	(8.03)
Jan/ Feb 08	209.58	(15.75)	199.53	(13.39)
Feb/ Mar 08	184.64	(11.89)	169.24	(15.18)
Mar/ Apr 08	194.09	5.12	181.81	7.43
Apr/ May 08	212.14	6.69	198.34	9.09

(Source: Monthly Reports of NEPSE)

Figure No: 3

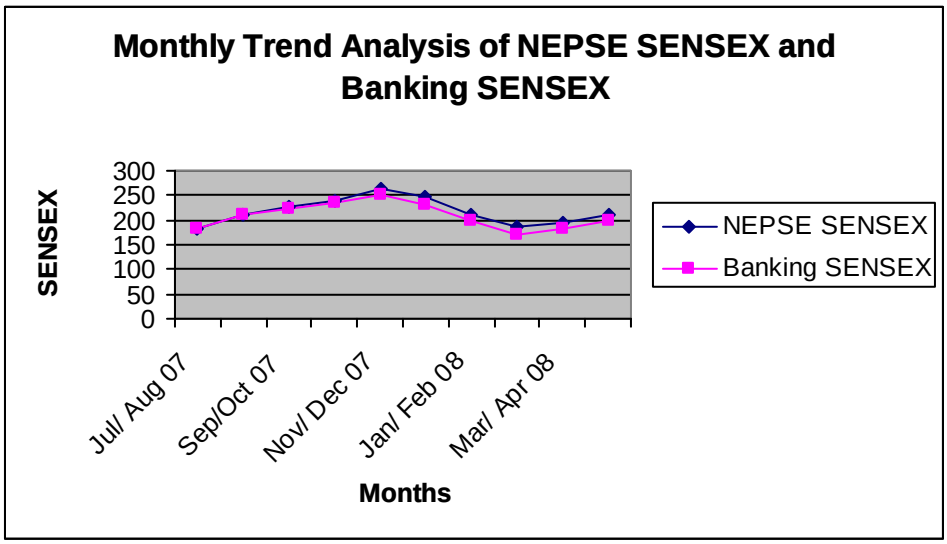


Table No: 3 shows the movement of NEPSE SENSEX and Banking SENSEX during the month Jul/Aug 07 to Apr/ May 08. Both the NEPSE SENSEX and Banking SENSEX shows a fluctuating trend during the study period. The NEPSE SENSEX increased from 181.47 in the month Jul/Aug 07 to 265.05 in Nov/Dec 07, however it declined for three consecutive months and dropped to 184.64 in Feb/Mar 2008. The SENSEX again recovered and increased to 212.14 in Apr/May 08.

Similarly, the Banking SENSEX increased from 181.95 in the month Jul/Aug 07 to 250.51 in Nov/Dec 07, however it declined for three consecutive months and dropped to 169.24 in Feb/Mar 2008. The SENSEX again recovered and increased to 198.34 in Apr/May 08.

The overall growth rate of NEPSE SENSEX is 14.11 % whereas that of the Banking SENSEX is 9.01% during the study period.

The analysis of SENSEX shows that although the shares prices suffered considerably during December 07 to March 08, the demand for the share prices increased and showed positive response after March until the end of the study period. The growth of NEPSE SENSEX is slightly less than the growth of NEPSE Index. Similarly, the growth of Banking SENSEX is slightly less than the Banking Index. It shows that the performance of the "A" class companies including "A" class commercial banks listed in the NEPSE is slightly lower than that of other companies listed in the NEPSE.

4.2.4 Number of Listed Companies, Transacted Companies and Volume of Stock Traded

In every stock exchange, the size of the security market is determined by the number of companies listed in the stock exchange and those companies which are actively transacting in the securities market. In Nepal, Securities Exchange Act-2006 prohibits securities trading without listing to Nepal Stock Exchange Ltd.

In this study, annual changes in the number of listed companies, transacted companies and volume of stock traded in NEPSE is analyzed.

Table No: 4

Number of Listed Companies, Transacted Companies and Volume of Stock Traded

Year	**No. of Listed Companies**	**% Change**	**No. of Transacted Companies**	**% Change**	**Volume of Stock Traded (000')**	**% Change**
01/02	96	-	69	-	3141.00	-
02/03	108	12.5	80	15.94	2427.89	(22.70)
03/04	114	5.56	92	15	6468.18	166.41
04/05	125	9.65	102	10.87	18433.55	184.99
05/06	135	8	110	7.84	12221.93	(33.70)
06/07	135	0	116	5.45	18147.25	48.48

(Source: Annual Reports of NEPSE)

Figure No: 4

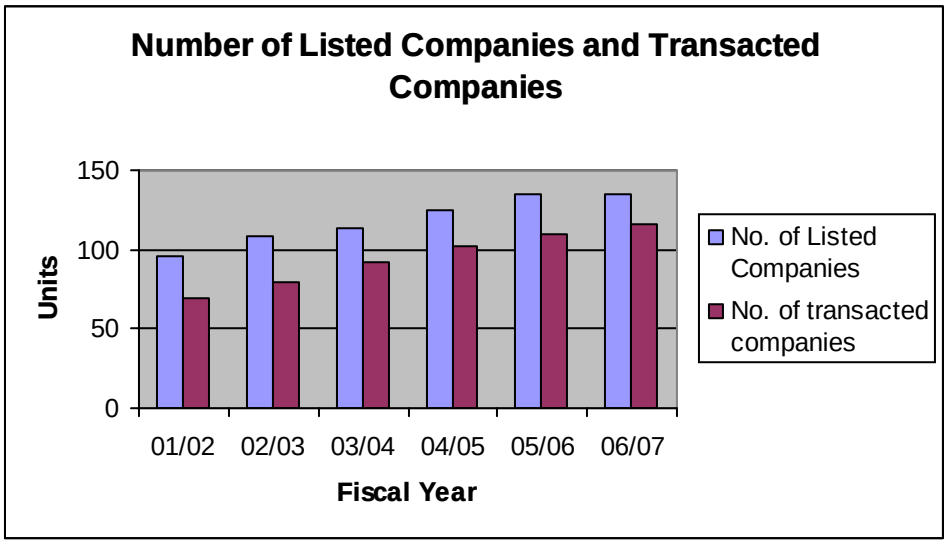


Figure No: 5

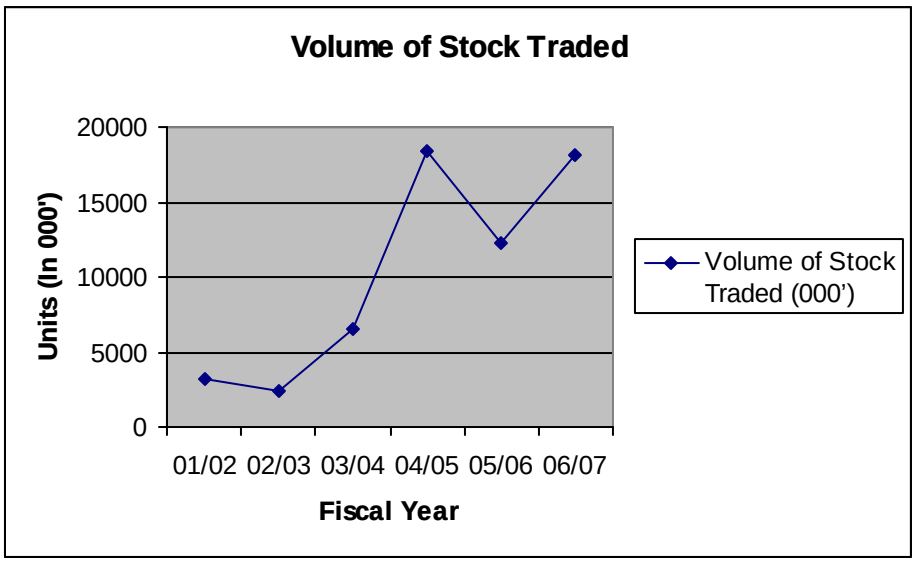


Table No: 4 shows the number of listed companies, transacted companies and volume of stock traded in the NEPSE from FY 01/02 to FY 06/07. The table shows the increasing trend of the number of listed companies and transacted companies in the NEPSE. The number of listed companies was 96 in FY 01/02 and it increased to 135 in the FY 06/07. During the same period number of transacted companies increased from 69 in FY 01/02 to 116 in FY 06/07.

The overall growth rate of listed companies during the study period is 40.62% whereas it is 68.12 % for the transacted companies. This indicates that the increasing number of companies is attracted towards trading in the security market. The growth rate of the listed companies shows a fluctuating trend whereas that of the transacted companies shows an increasing trend. This indicates that the increasing number of companies are transacting in the NEPSE compared to that of the listed companies.

Similarly, the volume of stock traded shows a fluctuating trend over the study period. The volume of stock traded decreased from 3141000 in FY 01/02 to 24278900 in FY 02/03. The volume again increased to 184335500 in FY 04/05 but again decreased to 122219300 in FY 05/06 before it again finally increased to 181472500 in FY 06/07. The overall growth rate of the volume of stock traded is 477.75 % during the study period which indicates strong growth in the NEPSE market.

The above analysis shows that although the number of listed companies, transacted companies and volume of stock traded has increased immensely during the study period, the fluctuating trend of these indicators shows that there is a lack of confidence among the

investors or fear and uncertainty in the investment environment in the economy. Nevertheless, there are positive signs of improvement which is indicated by a strong growth rate.

4.2.5 Market Capitalization of NEPSE

Market capitalization simply refers to the market price of listed securities. It is derived by multiplying the number of listed securities of all companies by the closing market price of corresponding securities and summing them up. Thus, market capitalization indicates the present value of the investments.

The table below shows the market capitalization of NEPSE.

Table No: 5

Market Capitalization of NEPSE

Year	Market Capitalization (in millions)	% Change
01/02	34878.18	-
02/03	35240.40	1.04
03/04	41424.77	17.55
04/05	61365.89	48.14
05/06	96736.74	57.64
06/07	186301.28	92.59

(Source: Annual Reports of NEPSE)

Figure No: 6

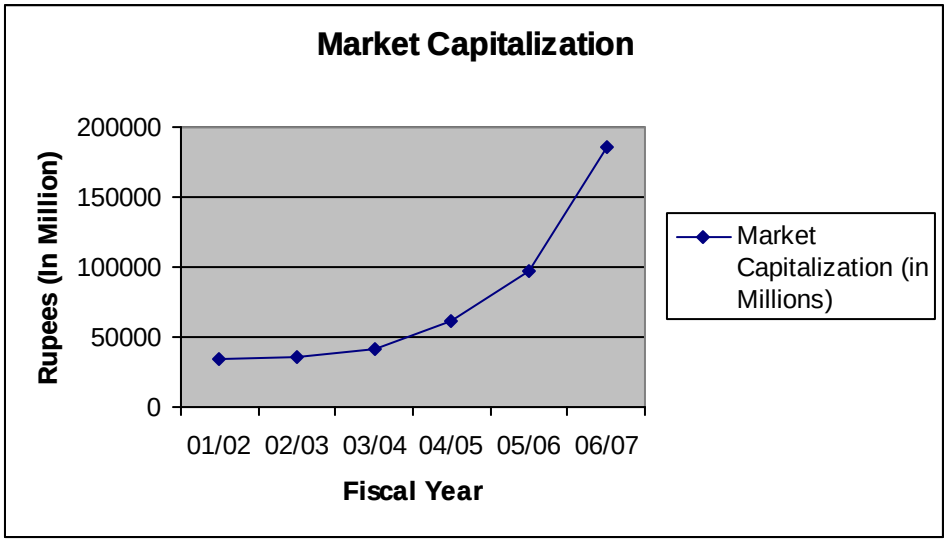


Table No: 5 shows the market capitalization of NEPSE during the study period (i.e. FY 01/02 to FY 06/07) based on closing market price of listed securities. The market capitalization shows an increasing trend during the study period. The market capitalization was worth 34878.18 millions in FY 01/02 and it increased to 186301.28 millions in FY 06/07. Annual growth rate of the market capitalization is positive and is in increasing trend in all the observed FYs. The overall growth rate of the market capitalization during the study period is 434.15 %.

The increase in the number of public limited companies and the end of the 13 year long armed conflict during the end of the study period might have positive results on investing decisions of the investors which resulted in a positive increase in the value of market capitalization during the study period. The satisfactory growth rate of the value of market capitalization shows that the Nepali capital market is recovering and that the investors are motivated to invest in the public companies. It also indicates an increase in the contribution of the public companies in the overall economy.

4.3 Analysis of Financial Indicators

Analysis of the financial indicators is conducted to identify the financial strength and weakness of a firm. In this study, detailed analysis of financial indicators like the Market Price Per Share, Earnings Per Share and Dividend Per Share of the sample commercial banks is conducted according to the objectives of the study. Moreover, statistical tools such as, mean, standard deviation and coefficient of variation is used to interpret financial indicators.

4.3.1 Analysis of MPS of the Sample Commercial Banks

Market Price Per Share is the value of stock, which can be obtained by a firm from the sale of a share in the market. It is the prevailing or the actual price of the share paid in a market transaction. The capital market determines MPS and for this study year-end closing price of NEPSE is taken as Market Price Per Share. The following table shows the MPS of the sample commercial banks as indicated in the NEPSE Index.

Table No: 6

Market Price of the Shares of the Sample Commercial Banks

Year	NIBL	SCBL	NBL	EBL	BOK	HBL	Average
01/02	760	1575	700	405	254	1000	782.33
02/03	795	1640	740	445	198	836	775.66
03/04	940	1745	1000	680	295	840	916.66
04/05	800	2345	1505	870	430	920	1145
05/06	1260	3775	2240	1379	850	1100	1767.33
06/07	1729	5900	5050	2430	1375	1740	3037.33
Total	6284	16980	11235	6209	3402	6436	8424.33
Mean	1047.33	2830	1872.50	1034.83	567	1072.67	1404.055
SD	348.53	1489.15	1515.76	702.69	420.28	312.20	798.10
CV	33.28	52.62	80.95	67.90	74.12	29.10	56.33

(Source: Annual Reports of the Sample Commercial Banks)

Figure No: 7 (A)

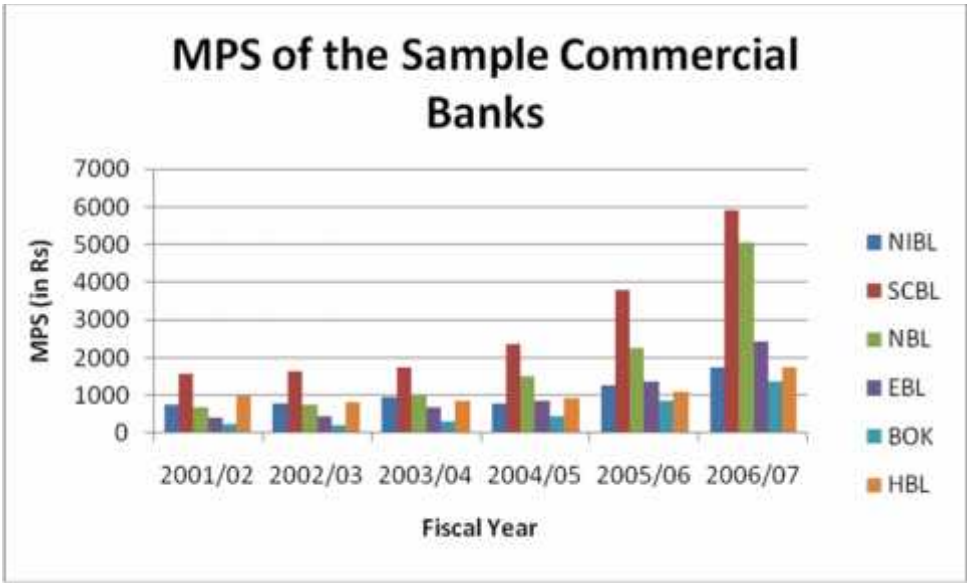
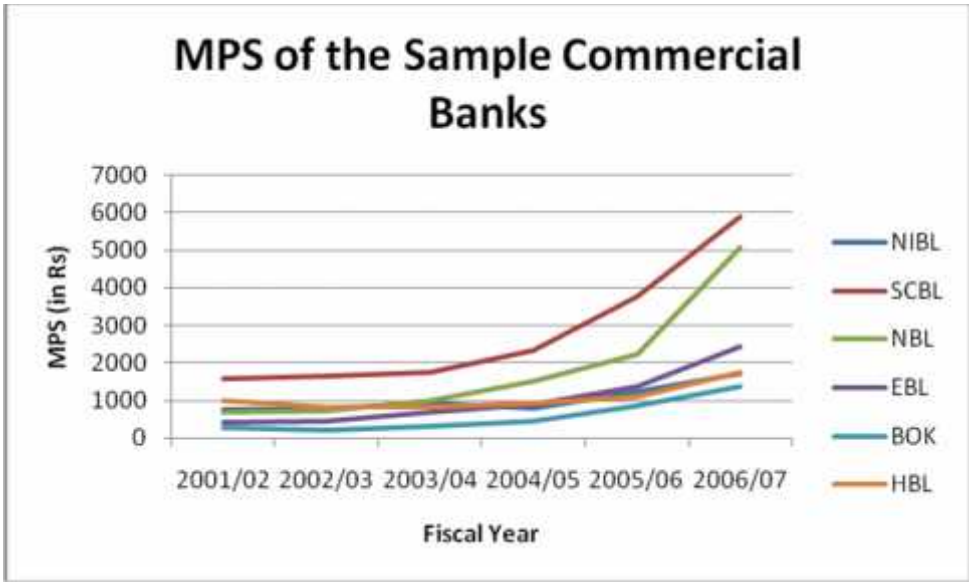


Figure No: 7 (B)



The above Table No: 6 show the comparative MPS of the six commercial banks with their mean, standard deviation and coefficient of variation covering the period from FY 01/02 to FY 06/07. The average MPS of all the commercial banks under study is Rs 1404.055 out of which only SCBL and NBL have MPS greater than the average MPS. The MPS of HBL, NIBL and EBL although less than average is very close to the average mean MPS whereas the MPS of the remaining commercial banks i.e. BOK is much less than the average MPS. The MPS of the SCBL is the highest during the study period. It can be interpreted that the SCBL is an appreciable bank with its share in high demand. Moreover, HBL, NIBL and EBL shares also has satisfactory MPS indicating a positive demand of their stock.

The total risk in an investment is measured by Standard Deviation (SD), higher the SD higher the risk and vice-versa. The above table shows that the average SD of all the commercial banks under study is 798.10 with NBL having highest SD i.e. 1515.76 and HBL the lowest i.e. 312.20. NBL, SCBL and EBL have SD greater than the average SD i.e. 798.10 whereas the SD of HBL, NIBL and BOK is less than the average. It can be interpreted that investing in NBL, SCBL and EBL is riskier than investing in HBL, NIBL and BOK with regards to Market Price Per Share.

Coefficient of Variation (CV) measures the risk per unit of return. Higher CV indicates high price fluctuation and less CV indicates less movement of the prices. The above table shows the comparative CV of the MPS of the commercial banks under study. The average CV of the MPS of the commercial banks under study is 56.33 which indicate that the shares of commercial banks have average risk. The CV of HBL, NIBL and SCBL is less than the

average whereas the CV of NBL, BOK and EBL is more than the average. It can be interpreted that the shares of HBL, NIBL and SCBL has less fluctuation in their share prices in comparison to the shares of NBL, BOK and EBL.

4.3.2 Analysis of EPS of the Sample Commercial Banks

Earning Per Share is one of the most important financial indicators which measure the earning capacity of the firm. It measures the profitableness of the shareholders, i.e. investment on a per share basis. EPS is generally considered to be the single most important variable in determining a share's price. Higher EPS indicates that the company is earning adequately on its share.

The below table show the EPS of the sample commercial banks.

Table No: 7

Earning Per Share of the Sample Commercial Banks

Year	NIBL	SCBL	NBL	EBL	BOK	HBL	Average
2001/02	33.59	141.13	55.25	32.91	2.00	60.26	54.19
2002/03	39.56	149.30	84.66	29.90	17.72	49.45	61.76
2003/04	51.70	143.55	92.61	45.58	27.50	49.05	68.33
2004/05	39.50	143.14	105.49	54.22	30.10	47.91	70.06
2005/06	59.35	175.84	129.21	62.78	43.67	59.24	88.35
2006/07	62.57	167.37	137.08	78.40	43.50	60.66	91.60
Total	286.27	920.33	604.30	303.79	164.49	326.57	434.72
Mean	47.71	153.39	100.72	50.63	27.42	54.43	72.38
SD	10.84	13.34	27.53	16.84	14.55	5.66	14.79
CV	22.73	8.70	27.33	33.26	53.06	10.39	25.91

(Source: Annual Reports of the Sample Commercial Banks)

Figure No: 8 (A)

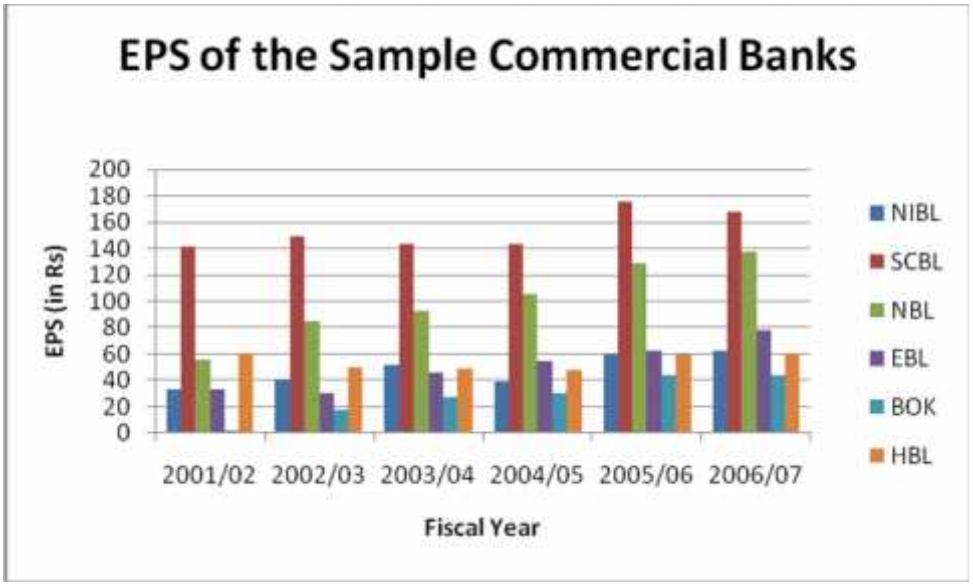
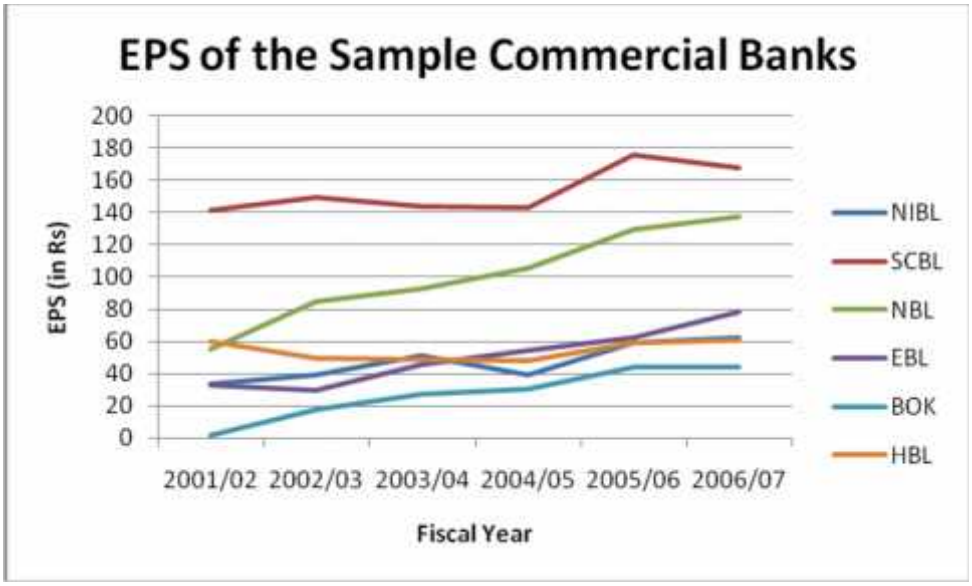


Figure No: 8 (B)



The above Table No: 7 shows the comparative EPS of the eight commercial banks with their mean, standard deviation and coefficient of variation covering FY 01/02 to FY 06/07. The average EPS of all the commercial banks under study is 72.38 out of which only SCBL and NBL has MPS greater than the average EPS. The EPS of HBL, NIBL and EBL although less than average mean. The EPS of the SCBL is the highest whereas that of BOK is the lowest among the commercial banks under study during the research period. From the above analysis, we can interpret that the earning capacity of the SCBL is the most satisfactory and that of the HBL, NIBL and EBL is satisfactory among the commercial banks under study. It further indicates that most of the banks under study is earning adequately on its share which is an indicator for a positive demand of the stock of those bank at the secondary market.

The above table also shows that the average SD of all the commercial banks under study is 14.79 with NBL having highest SD i.e. 27.53 and HBL the lowest i.e. 5.66. NBL and EBL have SD greater than the average SD i.e. 14.79 whereas HBL, SCBL, BOK and NIBL have SD less than average. This shows that investing in NBL and EBL on the basis of EPS is riskier than investing in BOK, SCBL, HBL and NIBL.

The above table shows the comparative CV of the EPS of the commercial banks under study. The average CV of the commercial banks under study is 25.91 % which can be interpreted that on average there is less fluctuation of the EPS of the commercial banks. The CV of NBL, EBL and BOK is more than average CV i.e. 25.91 % whereas the CV of the HBL, SCBL and NIBL is less than the average. The BOK has the highest CV i.e. 53.06 % whereas the SCBL has 8.70 %. It can be interpreted that the SCBL is the most appreciable bank because the earnings is less fluctuating and BOK is the least appreciable bank because the earnings per share is more fluctuating.

4.3.3 Analysis of DPS of the Sample Commercial Banks

Dividend Per Share is another important financial indicator which measures the dividend distributed to each equity shareholders. DPS shows how much the shareholders were actually paid by way of dividends.

Table No: 8

Dividend Per Share of the Sample Commercial Banks

Year	NIBL	SCBL	NBL	EBL	BOK	HBL	Average
01/02	0	100	30	0	10	25	27.5
02/03	20	110	50	20	5	1.32	34.37
03/04	15	110	65	20	10	0	36.66
04/05	12.5	120	70	0	15	11.58	38.18
05/06	20	130	85	25	18	30	51.33
06/07	5	80	100	10	20	15	38.33
Total	72.5	650	400	75	78	82.90	226.37
Mean	12.08	108.33	66.67	12.5	13	13.82	37.73
SD	7.42	15.72	22.67	9.90	5.16	11.11	11.99
CV	61.41	14.51	34	79.2	39.69	80.38	51.53

(Source: Annual Reports of the Sample Commercial Banks)

Figure No: 9 (A)

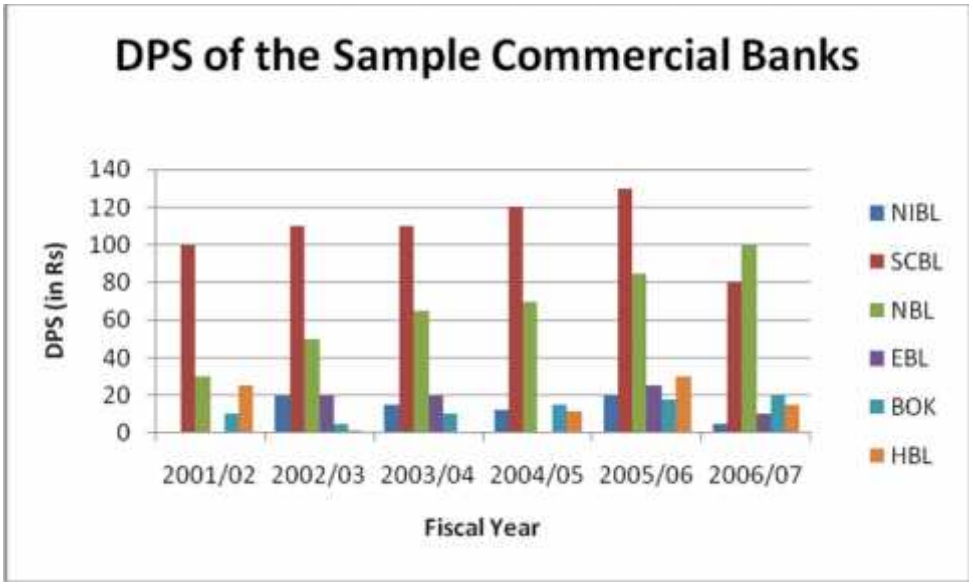
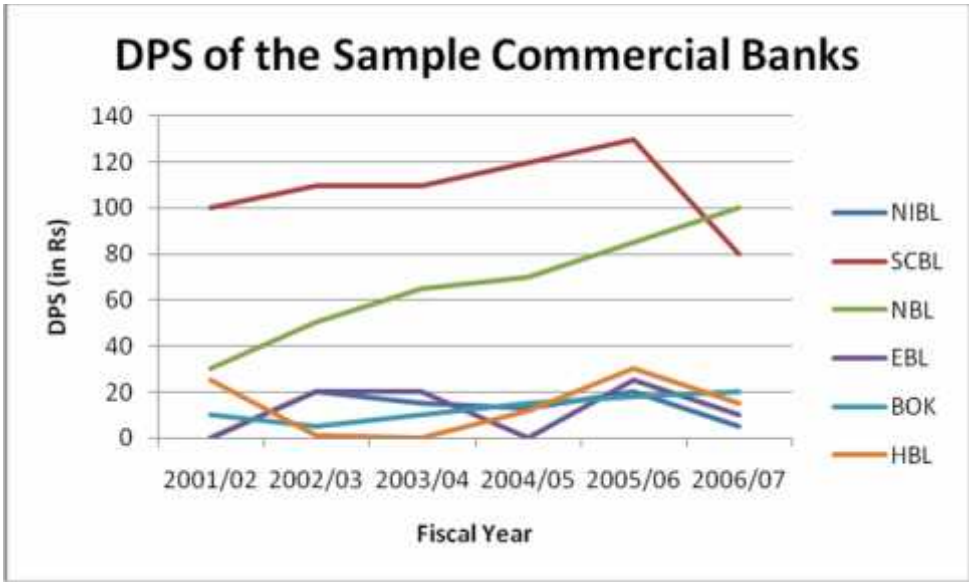


Figure No: 9 (B)



The above Table No: 8 shows comparative DPS of the six commercial banks under study with their mean, standard deviation and coefficient of variation covering the period from FY 01/02 to FY 06/07. The average DPS of all the commercial banks under study is 37.73 of which SCBL has the highest DPS i.e. 108.33 followed by NBL i.e. 66.67 whereas NIBL has the least DPS i.e. 12.08. All the other remaining banks have DPS less than the average DPS of the commercial banks. It shows that only shareholders of the SCBL and NBL were paid high enough for their every unit of shares. The shareholders of the other commercial banks i.e. NIBL,EBL, BOK and HBL is not as high as that of the SCBL and NBL but the dividend paid on the shares is much higher than the average interest rate prevailing in the market. This indicates that the shares of these banks can be considered as satisfactory for investment.

The average SD of all the DPS of the commercial banks under study is 11.99 with NBL having highest SD i.e. 22.67 and BOK the lowest i.e. 5.16. NBL and SCBL have SD greater than the average i.e. 11.99 whereas HBL, NIBL and EBL have SD less than average. From the above analysis it can be interpreted that based on dividend paid on each share the investment on the shares of NBL and SCBL is riskier than investment on shares of HBL, NIBL, EBL and BOK.

The above table shows the comparative CV of DPS of the commercial banks under study. The average CV of the commercial banks under study is 51.53 % which can be interpreted that on average there is less fluctuation of the DPS of the commercial banks under study. The CV of HBL is highest i.e. 80.38 % whereas that of SCBL is lowest i.e. 14.51 %. On average, based on the CV SCBL is the most appreciable bank because it is the only bank which has low CV i.e. 14.51 even though it has paid a high DPS in all FYs during the study. In addition, NBL can also be considered as a satisfactory bank although the fluctuation in its DPS is 34 %. All the other commercial banks under study i.e. NIBL, EBL, BOK and HBL are less satisfactory because the DPS is very fluctuating.

4.4 Statistical Analysis

This chapter incorporates some statistical tools, which are used to analyze the data to achieve the objectives of the study. In this study, statistical tools such as correlation coefficient analysis, simple and multiple regression analysis, beta-coefficient, t-test, run-test and test of hypothesis is conducted.

4.4.1 Simple Regression Analysis

Regression Analysis is a statistical technique for analyzing the relationship between two or more variables, and which is used to predict the value of one variable from the other or others.

In this study, regression equation of MPS on EPS, MPS on NWPS and MPS on DPS is conducted to analyze the relationship between MPS with different financial indicators

For the analytical explanation of the regression analysis the formula described in research methodology chapter is used.

4.4.1.1 Regression Equation of MPS on EPS by using the Method of t-test

In this study, regression equation of MPS on EPS is analyzed using the method of t-test. For this study, following hypothesis is created under Regression Analysis:

Null Hypothesis (H_0) : MPS is independent of the EPS.

Alternative Hypothesis (H_1) : MPS is dependent of the EPS.

The table below tabulates the Regression Analysis and its findings.

Table No: 9

Regression Equation of MPS on EPS by using the Method of t-test

SN	Commercial Bank	Regression Coefficient					
		Constant (a)	Slope (b)	r^2	Calculated Value of t-test	Tabulated Value of t-test	Significance
1	NIBL	18.49	0.0279	0.8032	4.04	2.776	Significant
2	SCBL	134.16	0.0068	0.6362	2.64	2.776	Insignificant
3	NBL	73.19	0.0147	0.656	2.762	2.776	Insignificant
4	EBL	27.14	0.0227	0.9044	6.151	2.776	Significant
5	BOK	12.11	0.027	0.613	2.518	2.776	Insignificant
6	HBL	41.06	0.0125	0.4729	1.895	2.776	Insignificant

(Refer Annex-II for detailed calculation)

Table No: 9 shows the regression equation between MPS and EPS of the sample commercial banks by using the method of t-test. The above table clearly shows that the Regression Coefficient (b) of all the commercial banks under study is positive which proves that the MPS is a function of EPS. This also indicates that there exists positive relationship between MPS and EPS. The Regression Coefficient (b) is highest for NIBL i.e. 0.0279 whereas it is lowest for SCBL i.e. 0.0068. It indicates that one unit increase in EPS will lead to 0.0279 units increase in MPS of the NIBL whereas one unit increase in EPS of the SCBL will lead to 0.0068 units increase in MPS holding all the other variables constant.

The Coefficient of Determination (r^2) for EBL and NIBL is 0.9044 and 0.8032 which shows a strong relationship between MPS and EPS. This indicates that 90.44 % and 80.32 % variability in MPS of EBL and NIBL respectively can be explained by EPS whereas the remaining 9.56 % and 19.68 % variability in MPS of the respective banks is due to other unexplained factors. The Coefficient of Determination (r^2) of NBL, SCBL, BOK and HBL is

0.656, 0.6362, 0.613 and 0.4729 which is moderately strong and it indicates that variability in MPS for these banks is moderately explained by EPS. The calculated value and tabulated value under t-test at 5% level of significance is presented in the above table. The table shows that in case of NIBL and EBL, MPS and EPS is significantly correlated whereas in case of NBL, SCBL, BOK and HBL it is not significantly correlated. This demonstrates that the MPS of most of the commercial banks is not influenced or determined by EPS which does not prove to be a healthy financial indicator for investment.

4.4.1.2 Regression Equation of MPS on NWPS by using the Method of t-test

In this study, regression equation of MPS on NWPS is analyzed using the method of t-test. For this study, following hypothesis is created under regression analysis:

Null Hypothesis (H_0) : MPS is independent of the NWPS.

Alternative Hypothesis (H_1) : MPS is dependent of the NWPS.

The below table tabulates the regression analysis and its findings.

Table No: 10

Regression Equation of MPS on NWPS by using the Method of t-test

SN	Commercial Bank	Regression Coefficient					
		Constant (a)	Slope (b)	r^2	Calculated Value of t-test	Tabulated Value of t-test	Significance
1	NIBL	253.24	(0.0117)	0.0146	0.244	2.776	Insignificant
2	SCBL	(2508.03)	0.299	0.921	6.857	2.776	Significant
3	NBL	254.08	0.0367	0.7646	3.60	2.776	Significant
4	EBL	137.55	0.064	0.912	6.44	2.776	Significant
5	BOK	207.21	(0.0157)	0.071	0.554	2.776	Insignificant
6	HBL	215.15	0.0244	0.2807	1.249	2.776	Insignificant

(Refer Annex- II for detailed calculation)

Table No: 10 shows regression equation between MPS and NWPS of the sample commercial banks by using the method of t-test. The above table clearly shows that the Regression Coefficient (b) of all the commercial banks except NIBL and BOK is positive. This indicates that there exists positive relationship between MPS and EPS for most commercial banks except NIBL and BOK. The Regression Coefficient (b) is highest for SCBL i.e. 0.299 which indicates that one unit increase in NWPS for SCBL will lead to 0.299 units increase in MPS

holding all the other variables constant. In case of NIBL and BOK, the value of Regression Coefficient is negative i.e. (0.0117) and (0.0157) respectively which indicates that there exists negative relationship between MPS and NWPS. It shows that if NWPS increases by one unit than MPS will decrease by 0.0117 and 0.0157 units respectively and vice-versa for NIBL and BOK.

The Coefficient of Determination (r^2) is strong for SCBL, EBL and NBL which is 0.921, 0.912 and 0.7646 respectively. This indicates that 92.1%, 91.2 % and 76.46 % variability in MPS for the SCBL and EBL respectively can be explained by NWPS whereas the remaining 7.9 %, 8.8 % and 23.54% variability in MPS of the respective banks is due to the effect of other unexplained factors. Similarly, the Coefficient of Determination (r^2) for HBL, BOK and NIBL is 0.2807, 0.071 and 0.0146. This indicates that the Co-efficient of Determination (r^2) is moderately strong.

The calculated value and tabulated value under t-test at 5% level of significance is presented in the above table. The table shows that in case of SCBL, NBL and EBL, MPS and NWPS is significantly correlated whereas in case of NIBL, BOK and HBL, MPS and NWPS is not significantly correlated. This indicates that MPS for most of the commercial banks is not affected by increase or decrease in NWPS which is not a positive financial indicator in the stock market.

4.4.1.3 Regression Equation of Market Price on DPS by using the Method of t-test

In this study, regression equation of MPS on DPS is analyzed using the method of t-test. For this study, following hypothesis is created under Regression Analysis:

Null Hypothesis (H_0) : MPS is independent of the DPS.

Alternative Hypothesis (H_1) : MPS is dependent of the DPS.

The below table tabulates the Regression Analysis and its findings.

Table No: 11

Regression Equation of MPS on DPS by using the Method of t-test

SN	Commercial Bank	Regression Coefficient					
		Constant (a)	Slope (b)	r^2	Calculated Value of t-test	Tabulated Value of t-test	Significance
1	NIBL	15.08	(0.0028)	0.0181	0.271	2.776	Insignificant
2	SCBL	120.92	(0.0045)	0.1965	0.988	2.776	Insignificant
3	NBL	42.93	0.0127	0.719	6.036	2.776	Significant
4	EBL	11.22	0.0012	0.0077	0.177	2.776	Insignificant
5	BOK	6.85	0.0109	0.781	3.782	2.776	Significant
6	HBL	1.10	0.0119	0.1110	0.7068	2.776	Insignificant

(Refer Annex-II for detailed calculation)

Table No: 11 shows the regression equation between MPS and DPS of the sampled commercial banks by using the method of t-test. The above table clearly shows that the Regression Coefficient (b) of all the commercial banks except NIBL and SCBL is positive. This indicates that there exists positive relationship between MPS and EPS for most commercial banks except NIBL and SCBL. The Regression Coefficient (b) is highest for NBL i.e. 0.0127, which indicates that one unit increase in DPS of NBL will lead to 0.0127 units increase in MPS holding all the other variables constant. In case of NIBL and SCBL, the value of Regression Coefficient (r) is negative i.e. (0.0028) and (0.0045) respectively which indicates that there exists negative relationship between MPS and NWPS. It demonstrates that if NWPS increases by one unit than MPS will decrease by 0.0028 and 0.0045 units respectively and vice-versa for NIBL and SCBL.

The Coefficient of Determination (r^2) is strong for BOK and NBL which is 0.781 and 0.719 respectively. This indicates that 78.1 % and 71.9% variability in MPS for the BOK and NBL respectively can be explained by DPS whereas the remaining 21.9 % and 28.1% variability in MPS of the respective banks is due to the effect of other unexplained factors. Similarly, the Coefficient of Determination (r^2) for SCBL, HBL, NIBL and EBL is 0.1965, 0.1110, 0.0181 and 0.0077 respectively. This indicates that Coefficient of Determination (r^2) is weak for SCBL, HBL, NIBL and EBL.

The calculated value and tabulated value under t-test at 5% level of significance is presented in the above table. The table shows that in case of NBL and BOK, MPS and DPS is significantly correlated whereas in case of NIBL, SCBL, EBL and HBL, MPS and DPS is not

significantly correlated. This indicates that MPS for most of the commercial banks is not affected by increase or decrease in DPS which is not a positive financial indicator in the stock market.

4.4.2 Multiple Regression Analysis

Multiple Regression Analysis is a statistical technique for analyzing the relationship between several independent or predictor variables and a dependent or criterion variable. In this study, Multiple Regression Equation of MPS on EPS and NWPS and MPS on NWPS and DPS is conducted to analyze the relationship between MPS with different multiple financial indicators. For the analytical explanation of the Multiple Regression Analysis the formula described in research methodology chapter is used.

4.4.2.1 Multiple Regression of Market Price on EPS and NWPS

In this study, multiple regression equation of MPS on EPS and NWPS is analyzed. For this study, following hypothesis is created:

Null Hypothesis (H_0) : MPS is independent of the EPS and NWPS.

Alternative Hypothesis (H_1) : MPS is dependent of the EPS and NWPS.

Table No. 12

Multiple Regression Equation of MPS on EPS and NWPS

SN	Commercial Bank	Regression Coefficient						
		Constant (a)	Slope (b_1)	Slope (b_2)	r^2	Calculated Value of ($F_{2,3}$) at 5% level of significance	Tab. Value of ($F_{2,3}$) at 5% level of significance	Significance
1	NIBL	-585.29	29.48	0.94	0.8109	6.4348	9.5521	Insignificant
2	SCBL	-10024.86	-6.31	32.28	0.9226	17.8673	9.5521	Significant
3	NBL	-8016.29	-86.32	57.56	0.8435	8.0848	9.5521	Insignificant
4	EBL	-1514.86	18.44	7.93	0.9293	19.7075	9.5521	Significant
5	BOK	1799.381	28.43	-10.14	0.9304	20.0605	9.5521	Significant
6	HBL	-4936.55	44.8746	14.78	0.9198	17.20	9.5521	Significant

(Refer Annex-III for detailed calculation)

Table No: 12 shows multiple regression equation of MPS on EPS and NWPS of the sample commercial banks.

The Coefficient of Determination (r^2) for BOK, EBL, SCBL, HBL, NBL and NIBL is 0.9304, 0.9293, 0.9226, 0.9198, 0.8435 and 0.8109 and it indicates a strong relationship between MPS with EPS and NWPS. This indicates that 93.04 %, 92.93%, 92.26%, 91.98%, 84.35% and 81.09 % variability in MPS of BOK, EBL, SCBL, HBL, NBL and NIBL respectively can be explained jointly by EPS and NWPS whereas the remaining 6.94 %, 7.07%, 7.74%, 8.02%, 15.65% and 18.91 % variability in MPS of the respective banks is due to other unexplained factors. This shows that the MPS is a function of EPS and NWPS for most commercial banks under study.

The calculated value and tabulated value under F-test at 5% level of significance is presented in the above table. The table shows that for all the commercial banks under study except NIBL and NBL the calculated value is greater than tabulated value i.e. Null Hypothesis is rejected. It shows that MPS is significantly correlated with the EPS and NWPS together for all the commercial banks except NIBL and NBL. This demonstrates that the MPS of some of the commercial banks is influenced or determined by EPS and NWPS together whereas the MPS of NIBL, NBL and NIC is not influenced or determined by EPS and NWPS together.

4.4.2.2 Multiple Regression of Market Price on NWPS and DPS

In this study, multiple regression equation of MPS on NWPS and DPS is analyzed. For this study, following hypothesis is created:

Null Hypothesis (H_0) : MPS is independent of NWPS and DPS.

Alternative Hypothesis (H_1) : MPS is dependent of NWPS and DPS.

The table below tabulates the Multiple Regression Analysis and its findings.

Table No: 13

Multiple Regression Equation of MPS on NWPS and DPS

SN	Commercial Bank	Regression Coefficient			r^2	Calculated Value of ($F_{2,3}$) at 5% level of significance	Tab. Value of ($F_{2,3}$) at 5% level of significance	Significance
		Constant (a)	Slope (b_1)	Slope (b_2)				
1	NIBL	2144.42	-3.69	-17.15	0.0921	0.1521	9.5521	Insignificant
2	SCBL	-7243.03	29.08	-21.96	0.9673	44.47	9.5521	Significant
3	NBL	-6800.32	35.46	-41.61	0.7745	5.15	9.5521	Insignificant
4	EBL	-2226.97	14.876	18.43	0.9776	65.58	9.5521	Significant
5	BOK	563.175	-4.71	72.18	0.8575	9.02	9.5521	Insignificant
6	HBL	-5220.75	24.46798	28.17849	0.93	20.09	9.5521	Significant

(Refer Annex-III for detailed calculation)

Table No: 13 shows multiple regression equation of MPS on NWPS and DPS of the sample commercial banks.

The Coefficient of Determination (r^2) for EBL, SCBL, HBL and BOK is 0.9776, 0.9673, 0.93 and 0.8575 respectively which indicates a strong relationship of MPS with EPS and NWPS. This indicates that 97.76 %, 96.73%, 93% and 85.75% variability in MPS of SCBL, EBL, HBL and BOK respectively can be explained jointly by EPS and DPS whereas the remaining 2.24 %, 3.27%, 7 % and 14.25% variability in MPS of the respective banks is due to other unexplained factors. The Coefficient of Determination (r^2) of NBL is 0.7745 which indicates moderate relationship of MPS with EPS and NWPS. This indicates that 77.45% variability in the MPS is explained by NWPS and DPS together whereas the remaining 22.55% variability is explained by other factors. The Coefficient of Determination (r^2) for NIBL is 0.0921 which indicates very poor relationship of MPS with NWPS and DPS. It shows that only 9.21% variability of MPS is explained by NWPS and DPS and the remaining 90.79 % variability is due to other factor. This shows that the MPS is a function of NWPS and DPS for most of the commercial banks under study.

The calculated value and tabulated value under F-test at 5% level of significance is presented in the above table. The table shows that for SCBL, EBL and HBL the calculated value is greater than tabulated value i.e. Null Hypothesis is rejected whereas for NIBL, NBL and BOK the calculated value is less than tabulated value i.e. Null Hypothesis is accepted. It shows that for SCBL, EBL and HBL the MPS is significantly correlated with NWPS and DPS together whereas for NIBL, NBL and BOK the MPS is not significantly correlated with NWPS and DPS together. This demonstrates that the MPS of SCBL, EBL and HBL is influenced or determined by NWPS and DPS together whereas it is not influenced for NIBL, NBL and BOK.

4.4.3 Risk and Return Analysis of Individual Commercial Banks

Risk and Return analysis is considered to be one of the best methods of analyzing the behaviour of prices of the shares in the market. Risk measures the degree of volatility in the market price movements of individual Shares. The higher the magnitude of fluctuations, higher will be the degree of risk. Though it is difficult to measure risk, some statistical tools like standard deviation, coefficient of variation and beta coefficient are used to measure the risk involved in individual security. For the study year-end closing price of the shares and dividend announcement is taken. Expected Return, Standard Deviation and Coefficient of Variation is calculated by using the formula described in research methodology chapter.

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

Table No: 14

Expected Return, Standard Deviation and CV of the Commercial Banks

SN	Commercial Banks	Expected Return ($\overline{R_j}$)	Standard Deviation ($\pm_j$)	CV_j
1	NIBL	0.22286	0.2519	1.1304
2	SCBL	0.3808	0.2273	0.5969
3	NBL	0.5974	0.3848	0.6442
4	EBL	0.4767	0.2283	0.4790
5	BOK	0.5016	0.3954	0.7884
6	HBL	0.1550	0.2549	1.6445

(Refer Annex-IV for detailed calculation)

The above table shows the expected return, standard deviation and coefficient of variation. It shows that the expected return is highest for NBL and lowest for HBL among the sample commercial banks. It indicates that the investors who seek profit maximization will invest in stocks of NBL bank.

The above table also shows standard deviation of the stocks of the sample commercial banks. The SD is highest for BOK and lowest for SCBL. Based on SD, the Stock of BOK is most risky whereas that of SCBL is least risky to invest. Standard deviation is a strong statistical device to measure the total risk involved in an investment which consists of both market risk and diversifiable risk. It also explains the volatility of the expected rate of return.

The coefficient of variation measures the risk per unit of return. The CV is highest for HBL and lowest for EBL. It can be interpreted that the HBL is the least appreciable bank because it is most risky due to high CV whereas EBL is most appreciable bank because it is least risky due to low CV.

4.4.4 Market Sensitivity Analysis

Beta Coefficient measures the market sensitivity or systematic risk of an investment. Analysis of market sensitivity gives a very useful insight in the analysis and the selection procedures of the common stock in the secondary market. The Beta Coefficient of an individual stock provides the clear picture about the tendency of movement of price of the stock with regards to the market. It measures the stock volatility relative to that of the average stock. An average stock is that which tends to move up or down with the general market as measured by some index.

Any stock or portfolio with a higher beta is more volatile than the market, and any with a lower beta can be expected to rise and fall more slowly than the market. A conservative

investor whose main concern is preservation of capital should focus on stocks with low betas, whereas one willing to take high risks in an effort to earn high rewards should look for high-beta stocks.

In this study, NEPSE Index is used to measure the movement of the stocks of listed commercial banks in regards to that in the general market.

The following table analyses the degree of risk of each stock of commercial banks in relation to the entire NEPSE Index.

Table No: 15

Beta Coefficient of the Sample Commercial Banks

SN	Commercial Bank	Beta Coefficient	Rank
1	NIBL	0.3718	6th
2	SCBL	0.6355	4th
3	NBL	1.286	1st
4	EBL	0.6015	5th
5	BOK	0.8529	3rd
6	HBL	0.8680	2nd

(Refer Annex-IV for detailed calculation)

Table No: 15 demonstrate the Beta Coefficient of the commercial banks under study during the study period i.e. FY 01/02 to FY 06/07. In this study, only NBL have Beta Coefficient greater than one which indicates that the stock price of NBL is more volatile in comparison to the similar average stock in the market. NBL has the highest beta coefficient. NBL whose beta is 1.286 is 28.6 % more volatile. The stocks of NBL is more aggressive stocks in comparison to other stocks in the market and tend to rise and fall faster than other stocks in the NEPSE.

The table also shows that the remaining commercial banks under study has beta less than 1. HBL, BOK, SCBL and EBL has beta-coefficient 0.8680, 0.8529, 0.6355 and 0.6015 respectively which is greater than 0.5 whereas NIBL has beta 0.3718 which is less than even 0.5. HBL, BOK, SCBL, EBL and NIBL are less volatile stocks out of which NIBL is least volatile stock as compared to other similar stocks in the market. It can be interpreted that the share price of HBL, BOK, SCBL, EBL and NIBL is expected to fall or rise more slowly than the overall NEPSE.

A conservative investor whose main concern is preservation of capital will invest in stocks of HBL, BOK, SCBL, EBL and NIBL whereas one willing to take high risks in an effort to earn high rewards will invest in stocks of NBL.

4.4.5 Run Test

Run Test is a non-parametric test that checks randomness of hypothesis for a two-valued data sequence. Run Test is used for testing the randomness of sequence of sample events on the basis of the order of sample events. This technique is based on the order of sequence in which the individual scores or observation originally were obtained. In this research, Run Test is applied to test whether the MPS of the stocks of the sample commercial banks is random. Run and Z value is calculated by using the formula described in research methodology chapter.

For conducting Run Test for the study following hypothesis is developed.

Null Hypothesis (H_0) : The MPS of the stocks of the sample commercial banks is random.

Alternative Hypothesis (H_1) : The MPS of the stocks of the sample commercial banks is not random.

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

Table No: 16

Result of Run Test of the MPS of the Sample Commercial Banks

Commercial Banks	**Sample Size**	**r**	**N_1**	**N_2**	**Cal. Value (/Z/)**	**Tab. Value (Z_{tab})**	**Decision**
NIBL	34	6	17	17	-4.179	1.96	MPS is not random
SCBL	34	4	17	17	-4.876	1.96	MPS is not random
NBL	34	4	17	17	-4.876	1.96	MPS is not random
EBL	34	4	17	17	-4.876	1.96	MPS is not random
BOK	34	4	17	17	-4.876	1.96	MPS is not random
HBL	34	6	18	16	-4.174	1.96	MPS is not random

(Refer Annex-V for detailed calculation)

Table No: 16 shows the Run Test of the MPS of the sample commercial banks. The Run Test has been conducted for 34 observations from the sample commercial banks. The table shows that the run (r) of all the banks is four except NIBL and HBL which is six. Since the run of most of the banks is less which indicates that the fluctuation of MPS is less for most of the banks. Compared to most banks, the fluctuation of the NIBL and HBL is slightly higher than other banks under study.

The table also shows the Z-value of MPS. For large samples the Z statistics gives the probability of difference between the actual and expected number of runs. The tabulated value of Z is ± 1.96 at 5 % level of significance. If the Z value is greater than or equal to ± 1.96, the null hypothesis is rejected at 5% level of significance.

The Z value of most of the banks under study at 5% level of significance is 4.876 and it is 4.179 for NIBL and 4.174 for HBL. The calculated value is greater than the tabulated value for all the commercial banks under study which shows that the Null Hypothesis is rejected and Alternative Hypothesis is accepted. This means that the observed number of run is less than the expected number of runs at observed significance level i.e. 5% level of significance. This also signifies that change in the MPS of the commercial banks under study is not random and that the market over reacts to the available information.

4.4.6 Signaling Factors

NEPSE stock market is not perfect. Lack of investment knowledge in investors, lack of proper government policies, manipulated activities of the stock brokers, high margin lending in stocks, frequent demonstrations and instable political situations has directly affected the stock market. Moreover, in some cases other national and international signaling factors might me the price determining factor of the Nepalese stock market.

For analyzing the effects of signaling factor, statistical tools such as paired t-test is generally used. In this study also, impact of signaling effects on the NEPSE Index and the Banking Index is analyzed with the help of paired t-test. Following formula is used for the study.

$$t = \frac{\bar{d}}{\sqrt{\frac{S^2}{n}}}$$

Where,

$$S^2 = \frac{1}{n-1}\left[d^2 - \frac{(d)^2}{n}\right]$$

t = Paired t-test

N = Number of observations

$\bar{d}$ = Mean of difference

4.4.6.1 Impact of Signaling Factors on the NEPSE Index

For analyzing the impact of signaling factors on NEPSE Index during the period of FY 2005 to FY 2008, three major events in the political history of Nepal is selected. The major political events are:

i. Janaandolan II or the April Movement (April 2006)
ii. Signing of the Comprehensive Peace Agreement-CPA (November 2006)
iii. Constituent Assembly Election (2008)

After identifying the major events, Hypothesis between major event and NEPSE Index is created to find out the results. Following Hypothesis is created for analysis.

Null Hypothesis

i. There is no significant difference in NEPSE Index before and after Janaandolan II.
ii. There is no significant difference in NEPSE Index before and after the signing the CPA.
iii. There is no significant difference in NEPSE Index before and after the CA election.

Alterative Hypothesis

i. There is significant difference in NEPSE Index before and after Janaandolan II.
ii. There is significant difference in NEPSE Index before and after the signing of the CPA.
iii. There is significant difference in NEPSE Index before and after the CA election.

Table No: 17

Results of Paired t-test of NEPSE Index

Event	Tab Value (5% at 9 degree of freedom)	Cal. Value	Remarks
Jana-andolan II	2.262	7.966	Significant
Signing of CPA	2.262	8.92	Significant
After CA election	2.262	10.78	Significant

(Refer Annex-VI for detailed calculation)

The above table shows the results of the paired t-test of NEPSE Index at 9 degree of freedom and 5% level of significance. The tabulated value at 9 degree of freedom and 5% level of significance is 2.26. The calculated value is 7.966, 8.92 and 10.78 for Jana-andolan II, signing of CPA and CA elections respectively. The calculated value is greater than the tabulated value in all the three incidents which means that the alternative hypothesis is accepted for all the three incidents. This shows that the end of Jana-andolan II, signing of the CPA and CA election has affected the overall performance of the NEPSE Index. The end of Jana-andolan II and signing of the CPA and CA election brought hope and confidence in the investors which in turn had a positive effect on the overall performance of the NEPSE and contributed to its bullish trend It contributed to the bearish trend in NEPSE index.

4.4.6.2 Impact of Signaling Factors on Banking Index

For analyzing the impact of signaling factors on Banking Index during the period of FY 2005 to FY 2008, three major events in the political history of Nepal is selected. The major political events are:

i. Janaandolan II or the April Movement (April 2006)
ii. Signing of the Comprehensive Peace Agreement (November 2006)
iii. Constituent Assembly Election (2008)

After identifying the major events, Hypothesis between major event and Banking Index is created to find out the results. Following Hypothesis is created for analysis.

Null Hypothesis

i. There is no significant difference in Banking Index before and after Janaandolan II.

ii. There is no significant difference in Banking Index before and after the signing of the CPA.
iii. There is no significant difference in Banking Index before and after the CA election.

Alternative Hypothesis

i. There is significant difference in Banking Index before and after Janaandolan II.
ii. There is significant difference in Banking Index before and after the signing of the CPA
iii. There is significant difference in Banking Index before and after the CA election.

Table No: 18

Result of Paired t-test of Banking Index

Event	**Tab Value (5% at 9 degree of freedom)**	**Cal. Value**	**Remarks**
Janaandolan II	2.262	9.16	Significant
Signing of CPA	2.262	7.52	Significant
After CA election	2.262	8.86	Significant

(Refer Annex-VI for detailed calculation)

The above table shows the results of the paired t-test of Banking Index at 9 degree of freedom and 5% level of significance. The tabulated value at 9 degree of freedom and 5% level of significance is 2.26. The calculated value is 9.16, 7.52 and 8.86 for Jana-andolan II, signing of the CPA and CA elections respectively. The calculated value is greater than the tabulated value in all the three incidents which means that the alternative hypothesis is accepted for all the three incidents. This shows that the end of Jana-andolan II, signing of the CPA and CA election has affected the overall performance of the Banking Index. The end of Jana-andolan II and signing of the CPA and CA election brought hope and confidence in the investors which in turn had a positive effect on the overall performance of the Banking Index and contributed to more investors investing in banking stocks.

In general, it can be concluded that the signaling factors like the major political changes has direct effect on the overall performance of the NEPSE including the Banking Index.

CHAPTER V

FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Findings of the study

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

Behavior of Market Index

1. There are altogether 145 companies listed in NEPSE and the listing rate is in increasing trend.

2. Both the NEPSE index and Banking index is in an increasing trend which signifies satisfactory performance of the public limited companies listed in the NEPSE. The growth rate of the commercial banks is more than that of the NEPSE which indicates better performance of the commercial banks in comparison to the other public limited companies listed in the NEPSE. Although the percentage of the public limited companies in the overall economy is very less, it still shows that the Nepali economy is demonstrating better performance.

3. The monthly trend analysis of NEPSE index and Banking index during the FY 2007/08 demonstrated a fluctuating trend. The volatility of NEPSE and Banking index might be due to the change in the change political situation of the country and it might have directly influenced the investing decision of the investors.

4. The NEPSE SENSEX and Banking SENSEX demonstrated a fluctuating trend during the FY 2007/08. The growth of NEPSE SENSEX and Banking SENSEX is slightly less than the NEPSE index and Banking index. It shows that the performance of the "A" class companies including "A" class commercial banks listed in the NEPSE is slightly lower than that of other listed companies.

5. The market capitalization is in an increasing trend, annual growth rate of market capitalization is positive and high. The increase in the number of public limited companies and the end of the 13 year long armed conflict during the end of the study period might have positive results on the investment decisions of the investors which resulted in a positive increase in the value of market capitalization. The satisfactory

growth rate of the value of market capitalization shows that the Nepali capital market is recovering and that the investors are motivated to invest in public companies. Moreover, the contribution of the public companies in the overall economy is also increasing.

Analysis of Financial Indicators

6. The MPS of the SCBL is highest whereas that of BOK is the lowest among the commercial banks under study i.e. SCBL is the most appreciable bank with its shares in high demand. The MPS is less fluctuating for HBL, NIBL and SCBL however it is riskier to invest in NBL and EBL than in other commercial banks under study.

7. The EPS of most of the commercial banks under study is positive i.e. most of the commercial banks under study are earning adequately on its share which is an indicator for a positive demand of the stock of those banks. The EPS is less fluctuating for the SCBL and is most fluctuating for BOK. However, based on EPS investing in NBL, SCBL, EBL and BOK is riskier than investing in HBL and NIBL.

8. The DPS of most of the commercial banks under study is positive however, SCBL and NBL are the only banks which is paying regular and high dividends. Other banks under study are also paying dividends but the payment is not regular. The DPS is less fluctuating for SCBL and NBL whereas it is more fluctuating for NIBL, EBL, BOK and HBL.

Simple Regression Analysis

9. The Regression Coefficient between MPS and EPS of all the commercial banks under study is positive. The test of hypothesis shows significant correlation between MPS and EPS in case of NIBL and EBL whereas in case of NBL, SCBL, BOK and HBL it is not significantly correlated i.e. the MPS of most of the commercial banks is not influenced or determined by EPS.

10. The Regression Coefficient between MPS and NWPS of all the commercial banks except NIBL and BOK is positive. The test of hypothesis shows significant correlation between MPS and NWPS for SCBL, NBL and EBL whereas in case of NIBL, BOK and HBL it is not significantly correlated. This indicates that MPS for most of the commercial banks is not affected by increase or decrease in NWPS.

11. The Regression Coefficient between MPS and DPS of all the commercial banks except NIBL and SCBL is positive. The test of hypothesis shows significant correlation for NBL and BOK whereas in case of NIBL, SCBL, EBL and HBL it is not significantly correlated. This indicates that MPS for most of the commercial banks is not affected by increase or decrease in DPS.

Multiple Regression Analysis

12. The coefficient of determination of MPS with EPS and NWPS for most of the commercial banks under study is high which shows a strong relationship between MPS with EPS and NWPS for these banks. The test of hypothesis of MPS with EPS and NWPS together shows that MPS is significantly correlated with the EPS and NWPS together for all the commercial banks except NIBL and NBL. This demonstrates that the MPS of significant number of banks under study is influenced or determined by EPS and NWPS together.

13. The coefficient of determination of MPS with NWPS and DPS for most of the commercial banks under study is high which shows a good relationship between MPS with NWPS and DPS for these banks. However, the test of hypothesis of MPS with NWPS and DPS together shows that for SCBL, EBL and HBL the MPS is significantly correlated with NWPS and DPS together whereas for NIBL, NBL and BOK the MPS is not significantly correlated with NWPS and DPS together.

Risk and Return Analysis

14. The risk and return analysis shows that the expected return for the NBL is highest and it is lowest for HBL among the sample commercial banks. The investors who seek profit maximization will invest in stocks of NBL bank. Based on the total risk, stock of NBL is most risky whereas that of HBL is least risky with regards to the Market Price Per Share. Based on risk per unit of return, stock of EBL is the most risky and that of HBL is least risky with regards to the Market Price Per Share.

Market Sensitivity Analysis

15. The beta-coefficient of NBL is greater than one whereas it is less than one for HBL, BOK, SCBL, EBL and NIBL. The stock of the NBL is more volatile in comparison to the similar average stock in the market whereas the stocks of HBL, BOK, SCBL, EBL and NIBL are less volatile in comparison to the similar average stock in the market. A conservative investor whose main concern is preservation of capital will invest in stocks of HBL, BOK, SCBL, EBL and NIBL whereas one willing to take high risks in an effort to earn high rewards will invest in stocks of NBL.

Analysis of Run-test

16. The run-test shows that the calculated value is greater than the tabulated value for all the commercial banks under study i.e. Null Hypothesis is rejected and Alternative Hypothesis is accepted. This indicates that the change in the MPS of the commercial banks under study is not random and that the market over reacts to the available information.

Analysis of Signaling Factors

17. The calculated value is greater than the tabulated value in all the three signaling incidents for both the NEPSE Index and Banking Index i.e. alternative hypothesis is accepted for all the three incidents. It shows that the end of Jana-andolan II, signing of the CPA and successfully completion of the CA election has affected the overall performance of the NEPSE Index and Banking Index. The end of Jana-andolan II and signing of the CPA and successful of the CA election brought hope and confidence in the investors which in turn had a positive effect on the overall performance of the NEPSE and contributed to its bullish trend, whereas the lack of political satiability in the country and after formation of the Maoist lead government decreased the confidence of the investors which in turn had a negative effect on the NEPSE. It contributed to the bearish trend in NEPSE index.

5.2 Conclusions

Securities market plays a pivotal role in mobilizing savings and channeling them in productive purposes. There has been some positive development in regulation of the share market. In 2007, the Government of Nepal issued some regulations governing Stock Broker, Dealer and Market Maker. These Regulations paved the way for opening a new stock exchange, increase the number of stock brokers and reduce the brokerage commission. In addition, NEPSE has also initiated some improvements. It has started a process to induct 27 additional stock brokers and an automated trading system is already in place. The SEBON

has recently allowed the NEPSE to function as a profitable agency. This shows that there have been some positive developments in the capital market through policy and legal changes.

The study on the share price behavior of the commercial banks in Nepal reveals that the Nepalese share market is following a bullish trend and this trend is quite encouraging. The overall growth and performance of the security market is satisfactory though it is fluctuating during the FY 07/08. The NEPSE index increased by 200% and the Banking Index increased 259% during the study period because of a tremendous increase in the share prices of commercial banks, financial institutions, Hydropower companies and development banks. The restoration of peace, improvement in the financial performance of the listed companies and, most importantly, the directive that the Central Bank gave to banks and financial institutions on March 2007 to double their paid-up capital also contributed to a remarkable increase in share prices and subsequently the stock market indices.

Most of the 145 listed companies which are listed in the NEPSE and performing well are the commercial banks. Therefore, the shares of commercial banks in Nepal are heavily traded and these shares play a key role in the determination of NEPSE Index.

The EPS and DPS of most of the commercial banks under study are positive, however, for most of the commercial banks these indicators are fluctuating. It indicates that except for few well established commercial banks the EPS and DPS is not regular and that the financial position is not consistent throughout the study period.

There is no significant relationship between the Market Price of the shares and important financial indicators like the EPS, NWPS and DPS when taken individually. However, there was a significant relationship between Market Price and other financial indicators like EPS, DPS and NWPS when analyzed together. This shows that the overall NEPSE Index and Banking Index movement is not determined by each financial indicator whereas it is determined by the overall composite of these indicators. Moreover, it can also be stated that the influence of financial indicators of the NIBL and NBL to the MPS is weak as compared to other commercial banks under study.

The risk and return analysis shows that the risk per unit of return is high for most of the commercial banks under study. It shows that the risk is high for these banks in comparison to the return. Analysis of the beta-coefficient of the shares of the commercial banks shows that the stocks of NBL is more volatile and aggressive whereas the HBL, BOK, SCBL, EBL and NIBL is less volatile i.e. it is less aggressive. A conservative investor wishing to preserve

capital will invest in stocks of HBL, BOK, SCBL, EBL and NIBL whereas one willing to take high risks in an effort to earn high rewards will invest in stocks of NBL.

The run-test shows that the Market price of the shares of the commercial banks under study is not random and that the market over reacts to the available information. This shows that the NEPSE do not provide true picture of the financial condition of the commercial banks. It also signifies that the share price of the commercial banks is fluctuated by intangible considerations and speculations rather than by the true net worth of those banks. Moreover, Insiders trading practice can also be blamed for the over reaction of the NEPSE.

Relative to the overall economy, the size of securities market is very small. Moreover, the relationship between the stock market activity and the economic growth is very weak. The weak relationship between the share prices and the economy is because of the excessive speculation in determining share prices and that the share prices have little correspondence with the real performance of the economy.

The study also shows that the general public is investing in the shares without analyzing the financial situation of the companies in which they are investing. The investors in Nepal are not so educated about the stock exchange more importantly about the indicators that are to be looked into while investing on a particular stock. Investment decision in most cases is guided by a peer's expectation/decision to invest rather than the analysis of the performance of the stock. Moreover, some investors also depend on the broker's advice for investing in stocks. However, even the brokers in most cases do not have real education and knowledge about the market which means that the brokers themselves don't have correct analysis and advice on the stocks.

5.3 Recommendations

Capital markets are a vital part of the financial development and economic development of a country. They provide an alternative vehicle for financial resource mobilization. In the developing country like Nepal, there is a strong need of financial resources for the overall development of the country. The development of stock market is one of the ways of mobilizing the needed financial resources. However, it is important that the financial sector is seen to be stable and a credible place to invest in. the stock exchange must provide the necessary avenues to assist in funding Nepal's economic growth.

On the basis of analysis and findings of the study, following strategies have been recommended to overcome weakness, inefficiency and to improve the overall stock market in Nepal.

1. The role of the stock exchange is to facilitate the marketability and liquidity of securities through market intermediaries. To fulfill this role, the Nepal Stock Exchange needs to make the securities market competitive, modern, efficient and reliable. Recently, the NEPSE has made some improvements by introducing automated trading system, implementation of Wide Area Network, and imposing circuit breakers. However, the NEPSE should further modernize it so that it can keep a track of even minor developments in the market which will in-turn help it to regulate the market effectively. Another way of modernizing itself could be making trading paperless. Paperless trading will discourage speculation and make the market more efficient.

2. Insiders trading and speculation has been one of the important features of NEPSE. It is important that the brokers, individual companies and other market players understand that the insiders trading approach might be beneficial to few individuals in a short run, however, it will not be beneficial to the overall economic growth and capital market in the long run. The market intermediaries including the brokers should follow the market ethics and trade rationally. Moreover, the government should implement regulations to check insider trading and to develop good corporate governance.

3. To promote a healthy and competitive share market and to check monopoly and undue speculation it is important to have adequate market intermediaries in the stock exchange. Although the NEPSE is in the process of increasing the stock brokers to 50, it is important that the NEPSE conduct a proper research to ensure that there are enough brokers and market intermediaries for a competitive functioning of the stock market.

4. The government should ensure that there is a favorable legal environment for developing healthy and competitive stock market. The market should be operated on a carrot and stick concept. The government should bring policies that provide fiscal incentives and that helps minimizes the costs of companies to go public. However, the regulators should be given stronger and on-going powers to implement legislations. The legal environment should be such that the regulation of markets and the financial sector is an ongoing exercise, not just a reaction to a problem.

5. The shares of commercial banks in Nepal are heavily traded in the stock market and these shares play a key role in the determination of NEPSE index. To avoid such situation, the government should provide proper financial and legal incentives to the manufacturing and other businesses which plan to go public and listed with the stock exchange.

6. Informed investors are the pillars of the stock market. To prevent the possibility of price manipulation and to reduce the chances of fraud and malpractices, individual companies as well as SEBON and NEPSE should develop a mechanism which will facilitate dissemination of accurate and reliable market related information to the investors. Moreover, these organizations should conduct regular promotional programs at the different levels to encourage investors to invest in the stocks.

7. Lack of experience and inadequate information on the part of corporate management, bankers, financial intermediaries, regulators and government official has led to an imperfect stock market. Credit rating agency, financial consultancy and research institutions should be established to address the investor's and institutional need for the professional stock analysis and stock rating services.

8. At present, the service of the stock market is limited to Kathmandu only. The issuance of some legislation in 2007 governing stock market opened a door for the establishment of another stock exchange. SEBON should conduct a study on the feasibility and need for an establishment of regional stock exchanges. Regional stock exchanges might help ensure accessibility of the stock market to the general public.

9. The NEPSE does not truly represent the national economy. To ensure that the NEPSE is representative of the national economy, big corporations should be turned public and listed in NEPSE. Moreover, government should come up with a policy so that private companies which are making profit are also attracted to go public.

10. The government, SEBON and NEPSE should conduct a thorough research on the functioning of the NEPSE and introduce appropriate measures for reforming the weaknesses. The government and public companies should encourage researchers to conduct timely research on the functioning of the overall stock market by providing proper incentives.

11. The companies listed with the NEPSE as well as prospective companies that plans to go public should adopt modern management and technology. The companies should use financial experts to assess their financial condition and their share behavior. Moreover, the SEBON should make mandatory to provide financial statements and financial analysis to the potential investors and their shareholders.

12. The investors should be clear of their motive before investing in the stocks. If any investors wanted to buy the stock of commercial banks under study than the investor

wishing to preserve capital should invest in stocks of HBL, BOK, SCBL, EBL and NIBL whereas one willing to take high risks in an effort to earn high rewards should invest in stocks of NBL.

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APPENDEX I

Summary of Financial Indicators of the Commercial Banks under Study

A. Value of MPS, EPS, NWPS and DPS of the Sample Commercial Banks

S.N.	Description	01/02	02/03	03/04	04/05	05/06	06/07
1.	**NIBL**						
	MPS	401	255	307	335	612	1176
	EPS	9.61	11.47	14.26	13.29	18.27	39.25
	NWPS	131.88	134.03	146.80	159.54	151.78	178.04
	DPS	-	8	-	-	5	47.59
2.	**SCBL**						
	MPS	1575	1640	1745	2345	3775	5900
	EPS	141.13	149.30	143.55	143.14	175.84	167.37
	NWPS	363.86	403.15	399.25	422.38	468.22	512.12
	DPS	100	110	110	120	130	80
3.	**NBL**						
	MPS	700	740	1000	1505	2240	5050
	EPS	55.25	84.66	92.61	105.49	129.21	137.08
	NWPS	233	267	301	337	381	418
	DPS	30	50	65	70	85	100
4.	**EBL**						
	MPS	405	445	680	870	1379	2430
	EPS	32.91	29.90	45.58	54.22	62.78	78.4
	NWPS	170.76	150.10	171.52	219.87	217.67	292.75
	DPS	0	20	20	0	25	10
5.	**BOK**						
	MPS	254	198	295	430	850	1375
	EPS	2	17.72	27.50	30.10	43.67	43.50
	NWPS	171.83	192.52	218.38	213.60	230.67	162.81
	DPS	10	5	10	15	18	20
6.	**HBL**						
	MPS	1000	836	840	920	1100	1740
	EPS	60.26	49.45	49.05	47.91	59.24	60.66
	NWPS	220	247.81	246.93	239.59	228.72	264.74
	DPS	25	1.32	0	11.58	30	15

APPENDEX II

Simple Regression Analysis between MPS and Various Financial Indicators

A. Simple Regression Analysis between MPS and EPS

1. Nepal Investment Bank Ltd.

Year	MPS (X)	EPS (Y)	X^2	Y^2	XY
01/02	760	33.59	577600	1128.288	25528.4
02/03	795	39.56	632025	1564.994	31450.2
03/04	940	51.7	883600	2672.89	48598
04/05	800	39.5	640000	1560.25	31600
05/06	1260	59.35	1587600	3522.423	74781
06/07	1729	62.57	2989441	3915.005	108183.5
N=6	X X6284	Y X286.27	X^2 X7310266	Y^2 X14363.85	XY X320141.1

2. Standard Chartered Bank Ltd.

Year	MPS (X)	EPS (Y)	X^2	Y^2	XY
01/02	1575	141.13	2480625	19917.68	222279.8
02/03	1640	149.3	2689600	22290.49	244852
03/04	1745	143.55	3045025	20606.6	250494.8
04/05	2345	143.14	5499025	20489.06	335663.3
05/06	3775	175.84	14250625	30919.71	663796
06/07	5900	167.37	34810000	28012.72	987483
N=6	X X16980	Y X920.33	X^2 X62774900	Y^2 X14223 6.3	XY X2704569

3. Nabil Bank Ltd.

Year	MPS (X)	EPS (Y)	X^2	Y^2	XY
01/02	700	55.25	490000	3052.563	38675
02/03	740	84.66	547600	7167.316	62648.4
03/04	1000	92.61	1000000	8576.612	92610
04/05	1505	105.49	2265025	11128.14	158762.5
05/06	2240	129.21	5017600	16695.22	289430.4
06/07	5050	137.08	25502500	18790.93	692254
N=6	X X11235	Y X604.3	X^2 X34822725	Y^2 X65410.78	XY X1334380

4. Everest Bank Ltd.

Year	MPS (X)	EPS (Y)	X^2	Y^2	XY
01/02	405	32.91	164025	1083.068	13328.55
02/03	445	29.9	198025	894.01	13305.5
03/04	680	45.58	462400	2077.536	30994.4
04/05	870	54.22	756900	2939.808	47171.4
05/06	1379	62.78	1901641	3941.328	86573.62
06/07	2430	78.4	5904900	6146.56	190512

N=6	X X6209	Y X303.79	X^2 X9387891	Y^2 X17082.31	XY X38188 5.5

5. Bank of Kathmandu

Year	MPS (X)	EPS (Y)	X^2	Y^2	XY
01/02	254	2	64516	4	508
02/03	198	17.72	39204	313.9984	3508.56
03/04	295	27.5	87025	756.25	8112.5
04/05	430	30.1	184900	906.01	12943
05/06	850	43.67	722500	1907.069	37119.5
06/07	1375	43.5	1890625	1892.25	59812.5
N=6	X X3402	Y X164.49	X^2 X2988770	Y^2 X5779.577	XY X12200 4.1

6. Himalayan Bank Ltd.

Year	MPS (X)	EPS (Y)	X^2	Y^2	XY
01/02	1000	60.26	1000000	3631.268	60260
02/03	836	49.45	698896	2445.303	41340.2
03/04	840	49.05	705600	2405.903	41202
04/05	920	47.91	846400	2295.368	44077.2
05/06	1100	59.24	1210000	3509.378	65164
06/07	1740	60.66	3027600	3679.636	105548.4
N=6	X X6436	Y X326.57	X^2 X7488496	Y^2 X17966.85	XY X35759 1.8

B. Simple Regression Analysis between MPS and NWPS

1. Nepal Investment Bank Ltd.

Year	MPS (X)	NWPS (Y)	X^2	Y^2	XY
01/02	760	307.95	577600	94833.2	234042
02/03	795	216.24	632025	46759.74	171910.8
03/04	940	246.89	883600	60954.67	232076.6
04/05	800	200.8	640000	40320.64	160640
05/06	1260	239.67	1587600	57441.71	301984.2
06/07	1729	234.37	2989441	54929.3	405225.7
N=6	X X6284	Y X1445.92	X^2 X7310266	Y^2 X355239.3	XY X1505 879

2. Standard Chartered Bank Ltd.

Year	MPS (X)	NWPS (Y)	X^2	Y^2	XY
01/02	1575	363.86	2480625	132394.1	573079.5
02/03	1640	403.15	2689600	162529.9	661166
03/04	1745	399.25	3045025	159400.6	696691.3
04/0	2345	422.38	5499025	178404.9	990481.1

5					
05/06	3775	468.22	14250625	219230	1767531
06/07	5900	512.12	34810000	262266.9	3021508
N=6	X X16980	Y X2568.98	X^2 X62774900	Y^2 X1114226	XY X7710456

3. Nabil Bank Ltd.

Year	MPS (X)	NWPS (Y)	X^2	Y^2	XY
01/02	700	233	490000	54289	163100
02/03	740	267	547600	71289	197580
03/04	1000	301	1000000	90601	301000
04/05	1505	337	2265025	113569	507185
05/06	2240	381	5017600	145161	853440
06/07	5050	418	25502500	174724	2110900
N=6	X X11235	Y X1937	X^2 X34822725	Y^2 X649633	XY X4133205

4. Everest Bank Ltd.

Year	MPS (X)	NWPS (Y)	X^2	Y^2	XY
01/02	405	170.76	164025	29158.98	69157.8
02/03	445	150.1	198025	22530.01	66794.5
03/04	680	171.52	462400	29419.11	116633.6
04/05	870	219.87	756900	48342.82	191286.9
05/06	1379	217.67	1901641	47380.23	300166.9
06/07	2430	292.75	5904900	85702.56	711382.5
N=6	X X6209	Y X1222.67	X^2 X9387891	Y^2 X262533.7	XY X1455422

5. Bank of Kathmandu

Year	MPS (X)	NWPS (Y)	X^2	Y^2	XY
01/02	254	171.83	64516	29525.55	43644.82
02/03	198	192.52	39204	37063.95	38118.96
03/04	295	218.38	87025	47689.82	64422.1
04/05	430	213.6	184900	45624.96	91848
05/06	850	230.67	722500	53208.65	196069.5
06/07	1375	162.81	1890625	26507.1	223863.8
N=6	X X3402	Y X1189.81	X^2 X2988770	Y^2 X239620	XY X657967.1

6. Himalayan Bank Ltd.

Year	MPS (X)	NWPS (Y)	X^2	Y^2	XY
01/02	1000	220	1000000	48400	220000
02/03	836	247.81	698896	61409.8	207169.2
03/04	840	246.93	705600	60974.42	207421.2
04/05	920	239.59	846400	57403.37	220422.8

05/06	1100	228.72	1210000	52312.84	251592
06/07	1740	264.74	3027600	70087.27	460647.6
N=6	X X6436	Y X1447.79	X^2 X7488496	Y^2 X350587.7	XY X1567253

C. Simple Regression Analysis between MPS and DPS

1. Nepal Investment Bank Ltd.

Year	MPS (X)	DPS (Y)	X^2	Y^2	XY
01/02	760	0	577600	0	0
02/03	795	20	632025	400	15900
03/04	940	15	883600	225	14100
04/05	800	12.5	640000	156.25	10000
05/06	1260	20	1587600	400	25200
06/07	1729	5	2989441	25	8645
N=6	X X6284	Y X72.5	X^2 X7310266	Y^2 X1206.25	XY X73845

2. Standard Chartered Bank Ltd.

Year	MPS (X)	DPS (Y)	X^2	Y^2	XY
01/02	1575	100	2480625	10000	157500
02/03	1640	110	2689600	12100	180400
03/04	1745	110	3045025	12100	191950
04/05	2345	120	5499025	14400	281400
05/06	3775	130	14250625	16900	490750
06/07	5900	80	34810000	6400	472000
N=6	X X16980	Y X650	X^2 X62774900	Y^2 X71900	XY X1774000

3. Nabil Bank Ltd.

Year	MPS (X)	DPS (Y)	X^2	Y^2	XY
01/02	700	30	490000	900	21000
02/03	740	50	547600	2500	37000
03/04	1000	65	1000000	4225	65000
04/05	1505	70	2265025	4900	105350
05/06	2240	85	5017600	7225	190400
06/07	5050	100	25502500	10000	505000
N=6	X X11235	Y X400	X^2 X34822725	Y^2 X29750	XY X923750

4. Everest Bank Ltd.

Year	MPS (X)	DPS (Y)	X^2	Y^2	XY
01/02	405	0	164025	0	0
02/03	445	20	198025	400	8900
03/04	680	20	462400	400	13600
04/05	870	0	756900	0	0
05/06	1379	25	1901641	625	34475
06/07	2430	10	5904900	100	24300
N=6	X X6209	Y X75	X^2 X9387891	Y^2 X1525	XY X81275

5. *Bank of Kathmandu*

Year	MPS (X)	DPS (Y)	X^2	Y^2	XY
01/02	254	10	64516	100	2540
02/03	198	5	39204	25	990
03/04	295	10	87025	100	2950
04/05	430	15	184900	225	6450
05/06	850	18	722500	324	15300
06/07	1375	20	1890625	400	27500
N=6	X X3402	Y X78	X^2 X2988770	Y^2 X1174	XY X55730

6. Himalayan Bank Ltd.

Year	MPS (X)	DPS (Y)	X^2	Y^2	XY
01/02	1000	25	1000000	625	25000
02/03	836	1.32	698896	1.7424	1103.52
03/04	840	0	705600	0	0
04/05	920	11.58	846400	134.0964	10653.6
05/06	1100	30	1210000	900	33000
06/07	1740	15	3027600	225	26100
N=6	X X6436	Y X82.9	X^2 X7488496	Y^2 X1885.839	XY X95857.12

Calculation of Correlation Coefficient, Coefficient of Determination, Regression Analysis and t-test between MPS and EPS of Nepal Investment Bank Limited

A. Coefficient of Correlation

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

$$= \frac{6X320141.1 - (6284)(286.27)}{\sqrt{43861596 - 39488656}\sqrt{86183.04 - 81950.5129}} = 0.8962$$

B. Coefficient of Determination

$r^2 = 0.8032$

C. Calculation of Regression Constant (a) and Regression Coefficient (b)

Here,

Independent Variable (EPS) =Y
Dependent Variable (MPS) =X
Regression Equation of Y on X is

Y= a+bX

Where,

a = Regression Constant
b = Regression Coefficient (Slope of the regression line)

According to the principle of the least squares, two normal equations for estimating (a) and (b) is:

$$Y = na + b\sum X \quad \text{..... (I)}$$

$$XY = a\sum X + b\sum X^2 \quad \text{..... (II)}$$

Solving these two normal equations we get,

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

$$b = \frac{6 * 320141.13 - (6284)(286.27)}{43861596 - 39488656} = 0.0279$$

Substituting the value of (b) on equation I

$$Y = na + b\sum X$$

286.27=6a+0.0279X6284
a= 18.49

D. *<u>To Find the Calculated Value for t-test</u>*

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0.8962\sqrt{6-2}}{\sqrt{1-0.8032}} = 4.04$$

E. *<u>Tabulated Value of t at 5% level of significance</u>= 2.776*

[Note: Similar procedure has been applied to calculate the parameters of Simple Regression Analysis and t-test of the other Commercial Banks under Study]

APPENDEX III

Multiple Regression Analysis between MPS and Various Financial Indicators

A. Multiple Regression Analysis of MPS on EPS and NWPS

1. *Nepal Investment Bank Ltd.*

Year	MPS(X_1)	EPS(X_2)	NWPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	760	33.59	307.95	25528.4	234042	10344.04	577600	1128.288	94833.2
02/03	795	39.56	216.24	31450.2	171910.8	8554.454	632025	1564.994	46759.74
03/04	940	51.7	246.89	48598	232076.6	12764.21	883600	2672.89	60954.67
04/05	800	39.5	200.8	31600	160640	7931.6	640000	1560.25	40320.64
05/06	1260	59.35	239.67	74781	301984.2	14224.41	1587600	3522.423	57441.71
06/07	1729	62.57	234.37	108183.5	405225.7	14664.53	2989441	3915.005	54929.3
	X_1 X 6284	X_2 X286 .27	X_3 X14 45.92	X_1X_2 X 320141.1	X_1X_3 X 1505879	X_2X_3 X68 483.25	X_1^2 X7310 266	X_2^2 X1436 3.85	X_3^2 X35523 9.3

2. *Standard Chartered Bank Ltd.*

Year	MPS(X_1)	EPS(X_2)	NWPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	1575	141.13	363.86	222279.8	573079.5	51351.56	2480625	19917.68	132394.1
02/03	1640	149.3	403.15	244852	661166	60190.3	2689600	22290.49	162529.9
03/04	1745	143.55	399.25	250494.8	696691.3	57312.34	3045025	20606.6	159400.6
04/05	2345	143.14	422.38	335663.3	990481.1	60459.47	5499025	20489.06	178404.9
05/06	3775	175.84	468.22	663796	1767531	82331.8	14250625	30919.71	219230
06/07	5900	167.37	512.12	987483	3021508	85713.52	34810000	28012.72	262266.9
	X_1 X 16980	X_2 X920 .33	X_3 X25 68.98	X_1X_2 X 2704569	X_1X_3 X 7710456	X_2X_3 X39 7359	X_1^2 X6277 4900	X_2^2 X1422 36.3	X_3^2 X11142 26

3. *Nabil Bank Ltd.*

Year	MPS(X_1)	EPS(X_2)	NWPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	700	55.25	233	38675	163100	12873.25	490000	3052.563	54289
02/03	740	84.66	267	62648.4	197580	22604.22	547600	7167.316	71289
03/04	1000	92.61	301	92610	301000	27875.61	1000000	8576.612	90601
04/05	1505	105.49	337	158762.5	507185	35550.13	2265025	11128.14	113569
05/06	2240	129.21	381	289430.4	853440	49229.01	5017600	16695.22	145161
06/07	5050	137.08	418	692254	2110900	57299.44	25502500	18790.93	174724
	X_1 X 11235	X_2 X604 .3	X_3 X19 37	X_1X_2 X 1334380	X_1X_3 X 4133205	X_2X_3 X20 5431.7	X_1^2 X3482 2725	X_2^2 X6541 0.78	X_3^2 X64963 3

4. *Everest Bank Ltd.*

Year	MPS(X_1)	EPS(X_2)	NWPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	405	32.91	170.76	13328.55	69157.8	5619.712	164025	1083.068	29158.98
02/03	445	29.9	150.1	13305.5	66794.5	4487.99	198025	894.01	22530.01
03/04	680	45.58	171.52	30994.4	116633.6	7817.882	462400	2077.536	29419.11
04/05	870	54.22	219.87	47171.4	191286.9	11921.35	756900	2939.808	48342.82
05/06	1379	62.78	217.67	86573.62	300166.9	13665.32	1901641	3941.328	47380.23
06/07	2430	78.4	292.75	190512	711382.5	22951.6	5904900	6146.56	85702.56
	X_1 X 6209	X_2 X303 .79	X_3 X12 22.67	X_1X_2 X 381885.5	X_1X_3 X 1455422	X_2X_3 X66 463.86	X_1^2 X9387 891	X_2^2 X1708 2.31	X_3^2 X26253 3.7

5. *Bank of Kathmandu Ltd.*

Year	MPS(X_1)	EPS(X_2)	NWPS(X_3)	$X_1 X_2$	$X_1 X_3$	$X_2 X_3$	X_1^2	X_2^2	X_3^2
01/02	254	2	171.83	508	43644.82	343.66	64516	4	29525.55
02/03	198	17.72	192.52	3508.56	38118.96	3411.454	39204	313.9984	37063.95
03/04	295	27.5	218.38	8112.5	64422.1	6005.45	87025	756.25	47689.82
04/05	430	30.1	213.6	12943	91848	6429.36	184900	906.01	45624.96
05/06	850	43.67	230.67	37119.5	196069.5	10073.36	722500	1907.069	53208.65
06/07	1375	43.5	162.81	59812.5	223863.8	7082.235	1890625	1892.25	26507.1
	X_1 X 3402	X_2 X164 .49	X_3 X11 89.81	X_1X_2 X 122004.1	X_1X_3 X 657967.1	X_2X_3 X33 345.52	X_1^2 X2988 770	X_2^2 X5779 .577	X_3^2 X23962 0

6. *Himalayan Bank Ltd.*

Year	MPS(X_1)	EPS(X_2)	NWPS(X_3)	$X_1 X_2$	$X_1 X_3$	$X_2 X_3$	X_1^2	X_2^2	X_3^2
01/02	1000	60.26	220	60260	220000	13257.2	1000000	3631.268	48400
02/03	836	49.45	247.81	41340.2	207169.2	12254.2	698896	2445.303	61409.8
03/04	840	49.05	246.93	41202	207421.2	12111.92	705600	2405.903	60974.42
04/05	920	47.91	239.59	44077.2	220422.8	11478.76	846400	2295.368	57403.37
05/06	1100	59.24	228.72	65164	251592	13549.37	1210000	3509.378	52312.84
06/07	1740	60.66	264.74	105548.4	460647.6	16059.13	3027600	3679.636	70087.27
	X_1 X 6436	X_2 X326 .57	X_3 X14 47.79	X_1X_2 X 357591.8	X_1X_3 X 1567253	X_2X_3 X78 710.58	X_1^2 X7488 496	X_2^2 X1796 6.85	X_3^2 X35058 7.7

B. Multiple Regression Analysis of MPS on NWPS and DPS

1. Nepal Investment Bank Ltd.

Year	MPS(X_1)	NWPS(X_2)	DPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	760	307.95	0	234042	0	0	577600	94833.2	0
02/03	795	216.24	20	171910.8	15900	4324.8	632025	46759.74	400
03/04	940	246.89	15	232076.6	14100	3703.35	883600	60954.67	225
04/05	800	200.8	12.5	160640	10000	2510	640000	40320.64	156.25
05/06	1260	239.67	20	301984.2	25200	4793.4	1587600	57441.71	400
06/07	1729	234.37	5	405225.7	8645	1171.85	2989441	54929.3	25
	X_1 X 6284	X_2 X144 5.92	X_3 X72 .5	X_1X_2 X 1505879	X_1X_3 X 73845	X_2X_3 X16 503.4	X_1^2 X7310 266	X_2^2 X3552 39.3	X_3^2 X1206.2 5

2. Standard Chartered Bank Ltd.

Year	MPS(X_1)	NWPS (X_2)	DPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	1575	363.86	100	573079.5	157500	36386	2480625	132394.1	10000
02/03	1640	403.15	110	661166	180400	44346.5	2689600	162529.9	12100
03/04	1745	399.25	110	696691.3	191950	43917.5	3045025	159400.6	12100
04/05	2345	422.38	120	990481.1	281400	50685.6	5499025	178404.9	14400
05/06	3775	468.22	130	1767531	490750	60868.6	14250625	219230	16900
06/07	5900	512.12	80	3021508	472000	40969.6	34810000	262266.9	6400
	X_1 X	X_2 X256	X_3 X65	X_1X_2 X	X_1X_3 X	X_2X_3 X27	X_1^2 X6277	X_2^2 X1114	X_3^2 X71900

	16980	8.98	0	7710456	1774000	7173.8	4900	226	

3. Nabil Bank Ltd.

Year	MPS(X_1)	NWPS (X_2)	DPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	700	233	30	163100	21000	6990	490000	54289	900
02/03	740	267	50	197580	37000	13350	547600	71289	2500
03/04	1000	301	65	301000	65000	19565	1000000	90601	4225
04/05	1505	337	70	507185	105350	23590	2265025	113569	4900
05/06	2240	381	85	853440	190400	32385	5017600	145161	7225
06/07	5050	418	100	2110900	505000	41800	25502500	174724	10000
	X_1 X 11235	X_2 X193 7	X_3 X40 0	X_1X_2 X 4133205	X_1X_3 X 923750	X_2X_3 X13 7680	X_1^2 X3482 2725	X_2^2 X6496 33	X_3^2 X29750

4. Everest Bank Ltd.

Year	MPS(X_1)	NWPS(X_2)	DPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	405	170.76	0	69157.8	0	0	164025	29158.98	0
02/03	445	150.1	20	66794.5	8900	3002	198025	22530.01	400
03/04	680	171.52	20	116633.6	13600	3430.4	462400	29419.11	400
04/05	870	219.87	0	191286.9	0	0	756900	48342.82	0
05/06	1379	217.67	25	300166.9	34475	5441.75	1901641	47380.23	625
06/07	2430	292.75	10	711382.5	24300	2927.5	5904900	85702.56	100
	X_1 X 6209	X_2 X122 2.67	X_3 X75	X_1X_2 X 1455422	X_1X_3 X 81275	X_2X_3 X14 801.65	X_1^2 X9387 891	X_2^2 X2625 33.7	X_3^2 X1525

5. Bank of Kathmandu Ltd.

Year	MPS(X_1)	NWPS(X_2)	DPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	254	171.83	10	43644.82	2540	1718.3	64516	29525.55	100
02/03	198	192.52	5	38118.96	990	962.6	39204	37063.95	25
03/04	295	218.38	10	64422.1	2950	2183.8	87025	47689.82	100
04/05	430	213.6	15	91848	6450	3204	184900	45624.96	225
05/06	850	230.67	18	196069.5	15300	4152.06	722500	53208.65	324
06/07	1375	162.81	20	223863.8	27500	3256.2	1890625	26507.1	400
	X_1 X 3402	X_2 X118 9.81	X_3 X78	X_1X_2 X 657967.1	X_1X_3 X 55730	X_2X_3 X15 476.96	X_1^2 X2988 770	X_2^2 X2396 20	X_3^2 X1174

6. Himalayan Bank Ltd.

Year	MPS(X_1)	NWPS(X_2)	DPS(X_3)	$X_1 X_2$	$X_1 X_3$	X_2X_3	X_1^2	X_2^2	X_3^2
01/02	1000	220	25	220000	25000	5500	1000000	48400	625
02/03	836	247.81	1.32	207169.2	1103.52	327.1092	698896	61409.8	1.7424
03/04	840	246.93	0	207421.2	0	0	705600	60974.42	0
04/05	920	239.59	11.58	220422.8	10653.6	2774.452	846400	57403.37	134.0964
05/06	1100	228.72	30	251592	33000	6861.6	1210000	52312.84	900
06/07	1740	264.74	15	460647.6	26100	3971.1	3027600	70087.27	225
	X_1 X 6436	X_2 X144 7.79	X_3 X82 .9	X_1X_2 X 1567253	X_1X_3 X 95857.12	X_2X_3 X19 434.26	X_1^2 X7488 496	X_2^2 X3505 87.7	X_3^2 X1885.8 39

Calculation of Regression Analysis, Coefficient of Determination and F-test of MPS on EPS and NWPS of Nepal Investment Bank Limited

A. Calculation of Values of Intercept and Regression Coefficient

The values of constants a_1, b_1 and b_2 can be obtained by solving following three normal equations simultaneously

$$\Sigma X_1 = na_1 + b_1 \Sigma X_2 + b_2 \Sigma X_3 \quad \text{..... (I)}$$

$$\Sigma X_1 X_2 = a_1 \Sigma X_2 + b_1 \Sigma X_2^2 + b_2 \Sigma X_2 X_3 \quad \text{..... (II)}$$

$$\Sigma X_1 X_3 = a_1 \Sigma X_3 + b_1 \Sigma X_2 X_3 + b_2 \Sigma X_3^2 \quad \text{..... (III)}$$

Solving equation I, II and III we get

Intercept (a_1) = -585.2943291
Regression Coefficient of MPS on EPS when NWPS is held constant (b_1) = 29.47723307
Regression Coefficient of MPS on EPS when NWPS is held constant (b_2) = 0.938723072

B. Coefficient of Determination

$$R^2 = \frac{a_1 \Sigma X_1 + b_1 \Sigma X_1 X_2 + b_2 \Sigma X_1 X_3 - n(\bar{X}_1)^2}{\Sigma X_1^2 - n(\bar{X}_1)^2}$$

$R^2 = 0.810959414$

C. *To find the Calculated Value of F-test*

$$F \text{ X} \frac{\text{Re}\, gressionMeanSquares(MSR)}{ErrorMeanSquares(MSE)}$$

Source of Variation	df	Sum of Squares (SS)	Mean of Squares (MS)	F-ratio at 5% Level of Significance
Explained (Regression)	2	591046.1436	295523.1	$F \text{ X} \frac{MSR}{MSE} \text{X} \frac{295523.1}{45925.73} \text{X} 6.434804$
Unexplained (Error)	3	137777.1897	45925.73	
Total	5	728823.3333		

D. *Tabulated Value of* ($F_{2, 3}$) at 5% level of significance = *9.5521*

[Note: Similar procedure has been applied to calculate the parameters of Multiple Regression Analysis and F-test of the other Commercial Banks under Study]

APPENDEX IV

Rate of Return, Standard Deviation, Coefficient of Variation and Beta Coefficient of Market Index and Commercial Banks

A. Rate of Return and Standard Deviation of the Market Index

Year	Market Index	Realized Rate of Return (R_m)	$(R_m - \overline{R_m})$	$(R_m - \overline{R_m})^2$
01/02	227.54	-	-	-
02/03	204.86	-0.0997	-0.3783	0.1431
03/04	222.04	0.0839	-0.1947	0.0379
04/05	286.67	0.2911	0.0125	0.0002
05/06	386.83	0.3494	0.0708	0.0050
06/07	683.95	0.7681	0.48954	0.2396
		(R_m)=1.3928		$(R_m - \overline{R_m})^2$ =0.4258

Calculation of Realized Rate of Return, Expected Rate of Return and Standard Deviation of the Market

A. *Calculation of Realized Rate of Return*

$$R_m \times \frac{MI_t - MI_{t-1})}{MI_{t-1}} = -0.0997$$

B. Calculation of Expected Rate of Return

$$(\overline{R_m}) = \frac{R_m}{n} = 0.27856$$

C. Calculation of Standard Deviation

$$\pm_m \times \sqrt{\frac{(R_m - \overline{R_m})^2}{n}} = 0.29182$$

$$\pm_m^2 \times 0.08516$$

B. Rate of Return, Standard Deviation, Coefficient of Variation and Beta Coefficient of Commercial Banks

1. *Nepal Investment Bank Limited*

Year	Market Price	Cash Dividend	Realized Rate	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
01/02	760	0	-	-	-	-	-
02/03	795	20	0.0724	-0.1505	0.02264	-0.3783	0.0569
03/04	940	15	0.2013	-0.0216	0.0005	-0.1947	0.0042
04/05	800	12.5	-0.1356	-0.3585	0.1285	0.0125	-0.0045
05/06	1260	20	0.6	0.3771	0.1422	0.0708	0.0267
06/07	1729	5	0.3762	0.1533	0.0235	0.48954	0.0750
					$(R_j - \overline{R_j})^2$ = 0.31734		$(R_j - \overline{R_j})(R_m - \overline{R_m})$= 0.1583

2. *Standard Chartered Bank Limited*

Year	Market Price	Cash Dividend	Realized Rate	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
01/02	1575	100	-	-	-	-	-
02/03	1640	110	0.1111	-0.2697	0.0727	-0.3783	0.1020
03/04	1745	110	0.1311	-0.2497	0.0624	-0.1947	0.0486
04/05	2345	120	0.4126	0.0318	0.0010	0.0125	0.0004
05/06	3775	130	0.6652	0.2844	0.0809	0.0708	0.0201
06/07	5900	80	0.5841	0.2033	0.0413	0.4895	0.0995
					$(R_j - \overline{R_j})^2$ = 0.2583		$(R_j - \overline{R_j})(R_m - \overline{R_m})$= 0.2706

3. *Nabil Bank Limited*

Year	Market Price	Cash Dividend	Realized Rate	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
01/02	700	30	-	-	-	-	-
02/03	740	50	0.1286	-0.4688	0.2198	-0.3783	0.1773
03/04	1000	65	0.4392	-0.1582	0.0250	-0.1947	0.0308
04/05	1505	70	0.575	-0.0224	0.0005	0.0125	-0.0003
05/06	2240	85	0.5449	-0.0525	0.0028	0.0708	-0.0037
06/07	5050	100	0.2991	0.7017	0.4924	0.48954	0.3435
					$(R_j - \overline{R_j})^2$ = 0.7405		$(R_j - \overline{R_j})(R_m - \overline{R_m})$= 0.5476

4. *Everest Bank Limited*

Year	Market Price	Cash Dividend	Realized Rate	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
01/02	405	0	-	-	-	-	-
02/03	445	20	0.1481	-0.3286	0.1080	-0.3783	0.1243
03/04	680	20	0.5730	0.0963	0.0093	-0.1947	-0.0187
04/05	870	0	0.2794	-0.1973	0.0389	0.0125	-0.0025
05/06	1379	25	0.6138	0.1371	0.0188	0.0708	0.0097
06/07	2430	10	0.7694	0.2927	0.0857	0.48954	0.1433
					$(R_j - \overline{R_j})^2$ = 0.2607		$(R_j - \overline{R_j})(R_m - \overline{R_m})$= 0.2561

5. Bank of Kathmandu Limited

Year	Market Price	Cash Dividend	Realized Rate	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
01/02	254	10	-	-	-	-	-
02/03	198	5	-0.2009	-0.7025	0.4935	-0.3783	0.2658
03/04	295	10	0.5404	0.0388	0.0015	-0.1947	-0.0076
04/05	430	15	0.5085	0.0069	0.00005	0.0125	0.00009
05/06	850	18	1.0186	0.517	0.2673	0.0708	0.0366
06/07	1375	20	0.6412	0.1396	0.0195	0.48954	0.0683
					$(R_j - \overline{R_j})^2$ = 0.78185		$(R_j - \overline{R_j})(R_m - \overline{R_m})$= 0.36319

6. Himalayan Bank Limited

Year	Market Price	Cash Dividend	Realized Rate	$(R_j - \overline{R_j})$	$(R_j - \overline{R_j})^2$	$(R_m - \overline{R_m})$	$(R_j - \overline{R_j})(R_m - \overline{R_m})$
01/02	1000	25	-	-	-	-	-
02/03	836	1.32	-0.1627	-0.3177	0.1009	-0.3783	0.1202
03/04	840	0	0.0048	-0.1502	0.0226	-0.1947	0.0292
04/05	920	11.58	0.1090	-0.046	0.0021	0.0125	-0.0006
05/06	1100	30	0.2283	0.0733	0.0054	0.0708	0.0052
06/07	1740	15	0.5955	0.4405	0.1940	0.48954	0.2156
					$(R_j - \overline{R_j})^2$ = 0.325		$(R_j - \overline{R_j})(R_m - \overline{R_m})$= 0.3696

Calculation of Realized Rate of Return, Expected Rate of Return, Standard Deviation, Coefficient of Variation , Co-variance and Beta-Coefficient for NIBL

A. Calculation of Realized Rate of Return

$$R_J \text{ X} \frac{D_t \Gamma (P_t \text{ Z} P_{t\text{Z}1})}{P_{t\text{Z}1}}$$

[02/03=0.0724, 03/04=0.2013, 04/05= -0.1356, 05/06= 0.6, 06/07=0.3762]

B. Calculation of Expected Rate of Return

$$(\overline{R_j}) = \frac{R_j}{n} = 0.22286$$

C. *Calculation of Standard Deviation*

$$\pm_{\ j} \text{ X} \sqrt{\frac{(R_j \text{ Z} \overline{R_j})^2}{n}} = 0.2519$$

D. Calculation of Coefficient of Variation

$$CV_j \text{ X} \frac{\pm_j}{R_j} = 1.1304$$

E. Calculation of Co Variance

$$Cov(R_J R_m) \text{ X} \frac{(R_J \text{ Z} \overline{R_J})(R_m \text{ Z} \overline{R_m})}{n} = 0.03166$$

F. Calculation of Beta Coefficient

$$_J \text{ X} \frac{Cov(R_J R_m)}{\pm_m^2} = 0.3718$$

[Note: Similar procedure has been applied to calculate Realized Return, Expected Return, SD, C.V. and Beta Coefficient of the other Commercial Banks under Study.]

APPENDEX V

Run Test of the Sample Commercial Banks under Study

A. Summary of Monthly -Wise Market Price Per Share of the Sample Commercial Banks

1. Market Price of NIBL					2. Market Price of SCBL				3. Market Price of NBL				4. Market Price of EBL			
Month	**2005**	**2006**	**2007**	**2008**	**2005**	**2006**	**2007**	**2008**	**2005**	**2006**	**2007**	**2008**	**2005**	**2006**	**2007**	**2008**
Jan	---	930	1245	1627	---	2902	4500	6100	---	1832	3320	4134	---	930	1800	2280
Feb	---	976	1095	1355	---	3101	4215	4850	---	2065	3090	3810	---	1080	1675	2012
Mar	---	951	1100	1525	---	3145	4220	5200	---	2008	3150	4300	---	1111	1700	1960
Apr	---	1261	1170	1804	---	3700	4500	5500	---	2280	3500	4340	---	1355	1750	2548
May	---	1175	1475	---	---	3600	4850	---	---	2100	3790	---	---	1333	2030	---
Jun	---	1260	1729	---	---	3775	5900	---	---	2240	5050	---	---	1379	2430	---
Jul	850	1275	1980	---	2400	3740	6200	---	1634	2250	5010	---	980	1325	2290	---
Aug	790	1270	2425	---	2405	3625	7010	---	1561	2140	6000	---	870	1290	2675	---
Sep	795	1456	2675	---	2370	4000	7938	---	1620	2295	4263	---	972	1290	2830	---
Oct	829	1120	2440	---	2411	4355	8700	---	1625	2870	4335	---	860	1580	2774	---

Nov	788	1280	2600	---	2575	4650	5260	---	1625	3350	5425	---	886	1945	2690	---
Dec	800	1270	1750	---	2685	4600	6745	---	1742	3400	4600	---	885	1900	2500	---

5. Market Price of BOK					**6. Market Price of HBL**			
Month	**2005**	**2006**	**2007**	**2008**	**2005**	**2006**	**2007**	**2008**
Jan	---	616	1055	1688	---	402	651	1160
Feb	---	707	920	1502	---	450	595	932
Mar	---	673	935	1675	---	455	591	938
Apr	---	870	950	1930	---	630	620	1065
May	---	810	1110	---	---	600	729	---
Jun	---	850	1375	---	---	612	950	---
Jul	443	830	1250	---	385	600	590	---
Aug	469	818	1444	---	370	585	985	---
Sep	475	837	1570	---	358	575	1080	---
Oct	511	1120	1706	---	369	635	1290	---
Nov	527	1113	2185	---	365	796	1600	---

Dec	546	1100	2050	---	406	810	1345	---

Calculation of Number of Runs and Z Value of Nepal Investment Bank Limited

A. Calculation of Median

$$Median\ X\frac{(N\ \Gamma 1)^{th}}{2} = \frac{34\ \Gamma 1}{2} = 17.5^{th}\ \text{Place}$$

$$\text{Median} = \frac{1261\ \Gamma 1270}{2} = 1265.5$$

B. Calculation of Number of Runs

Number of Positive Runs (N_1) =17

Number of Negative Runs (N_2) =17

Number of Runs (r) =6

C. Calculation of Z Value

$$Z = \frac{r - \frac{2n_1n_2}{n_1 + n_2} + 1}{\sqrt{\frac{2n_1n_2(2n_1n_2 - n_1 - n_2)}{(n_1 + n_2)^2(n_1 + n_2 - 1)}}} = -4.179$$

D. *Tabulated Value of Z*

Tabulated Value of Z at 5% level of significance and 9 degree of freedom Z_{tab}= 1.96

[Note: Similar procedure has been applied to calculate the parameters of Run test and Z value of the other Commercial Banks under Study]

APPENDEX VI

Effect of Signaling Factors on the NEPSE Index and Banking Index

A. NEPSE and Banking Index before and after the End of Janaandolan II (25 April 2006)

NEPSE INDEX				Banking Index			
Before	**After**	**d**	**d^2**	**Before**	**After**	**d**	**d^2**
281.15	361.58	80.43	6468.985	298.63	410.17	111.54	12441.17
296.78	371.74	74.96	5619.002	322.47	423.04	100.57	10114.32
290.56	375.14	84.58	7153.776	311.05	422.81	111.76	12490.3
296.98	378.76	81.78	6687.968	316.67	424.28	107.61	11579.91
307.22	382.24	75.02	5628	333.16	426.39	93.23	8691.833
300.54	394.25	93.71	8781.564	325.48	443.78	118.3	13994.89
302.78	408.38	105.6	11151.36	328.31	463.22	134.91	18200.71
309.04	486.19	177.15	31382.12	334.90	562.00	227.1	51574.41
341.05	514.42	173.37	30057.16	380.62	582.02	201.4	40561.96
337.52	513.34	175.82	30912.67	374.90	566.88	191.98	36856.32
		d X11	d^2 X1			d X13	d^2 X2
		22.42	43842.6			98.4	16505.8

B. NEPSE and Banking Index before and after Comprehensive Peace Agreement (21 November 2007)

NEPSE INDEX				Banking Index			
Before	**After**	**d**	**d^2**	**Before**	**After**	**d**	**d^2**
309.04	486.19	177.15	31382.12	334.90	562.00	227.1	51574.41
341.05	514.42	173.37	30057.16	380.62	582.02	201.4	40561.96
337.52	513.34	175.82	30912.67	374.90	566.88	191.98	36856.32
361.58	511.81	150.23	22569.05	410.17	544.01	133.84	17913.15
371.74	480.99	109.25	11935.56	423.04	501.00	77.96	6077.762
375.14	513.69	138.55	19196.1	422.81	555.20	132.39	17527.11
378.76	541.38	162.62	26445.26	424.28	591.03	166.75	27805.56
382.24	591.65	209.41	43852.55	426.39	653.41	227.02	51538.08
394.25	678.97	284.72	81065.48	443.78	759.67	315.89	99786.49
408.38	739.53	331.15	109660.3	463.22	824.91	361.69	130819.7
		d X19	d^2 X4			d X20	d^2 X4
		12.27	07076.3			36.02	80460.5

C. NEPSE and Banking Index before and after the CA Election Postponement (June 2007)

NEPSE INDEX				Banking Index			
Before	**After**	**d**	**d^2**	**Before**	**After**	**d**	**d^2**
382.24	591.65	209.41	43852.55	426.39	653.41	227.02	51538.08
394.25	678.97	284.72	81065.48	394.25	759.67	365.42	133531.8
408.38	739.53	331.15	109660.3	463.22	824.91	361.69	130819.7
486.19	885.50	399.31	159448.5	562.00	995.52	433.52	187939.6
514.42	878.86	364.44	132816.5	582.02	951.46	369.44	136485.9
513.34	897.29	383.95	147417.6	566.88	952.23	385.35	148494.6
511.81	984.53	472.72	223464.2	544.01	979.70	435.69	189825.8
480.99	803.69	322.7	104135.3	501.00	785.90	284.9	81168.01
513.69	756.76	243.07	59083.02	555.20	739.29	184.09	33889.13
541.38	709.40	168.02	28230.72	591.03	690.48	99.45	9890.303
		d X31 79.49	d^2 X1 089174			d X31 46.57	d^2 X1 103583

Calculation of t-value for Analyzing Signaling Effects of Jana-andolan II on NEPSE Index

A. Calculation of Unbiased Estimate of Population Variance

$$S^2 \text{ X} \frac{1}{n \text{ Z} 1}[\quad d^2 \text{ Z} \frac{(\quad d)^2}{n}] = 1984.44$$

B. Calculation of Test Statistics

$$t \text{ X} \frac{\bar{d}}{\sqrt{\frac{S^2}{n}}} = 7.966$$

C. Tabulated value of t at 5% level of significance at 9 degree of freedom = 2.262

[Note: Similar procedure has been applied to calculate t-value of the other signaling factors of both the NEPSE and Banking Index]