STOCK PRICE AND RISK & RETURN ANALYSIS OF NEPALESE COMMERCIAL BANKS

(With Reference To NABIL, EBL, BOK & SBI)

A Thesis

Submitted By

Prakash Khanal

T.U. Registration No.: 7-2-470-61-2005

College Roll No.: 445/065

Second Year Symbol No.: 392141

Submitted To

Office of the Dean

Faculty of Management

Tribhuvan University

In the Partial Fulfillment of the Requirement for the

Degree of Master's in Business Studies (MBS)

Kathmandu, Nepal

2014

RECOMMENDATION

This is to certify that the Thesis

Submitted by

Prakash Khanal

Entitled:

A STUDY ON RISK & RETURN ANALYSIS OF NEPALESE COMMERCIAL BANKS

(With Reference to NABIL, EBL, BOK & SBI Bank Limited)

Has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

.....	……	……
Kapil Khanal	Prof. Dr. Kamal Deep Dhakal	Asso. Prof. Prakash Singh Pradhan
(Thesis Supervisor)	(Head of Research Department)	(Campus Chief)

VIVA-VOCE SHEET

We have conducted the viva-voce of the thesis presented

By

Prakash Khanal

Entitled:

A STUDY ON RISK & RETURN ANALYSIS OF NEPALESE COMMERCIAL BANKS

(With Reference to NABIL, EBL, BOK & SBI Bank Limited)

And found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for the

Degree of Master's in Business studies (M.B.S.)

Viva-Voce Committee

Head, Research Department ……..

Member (Thesis Supervisor) …….

Member (External Expert) ...…….

DECLARATION

I, hereby, declare that the work reported in this thesis entitled ***"A Study On Risk & Return Analysis Of Nepalese Commercial Banks (With Reference to NABIL, EBL, BOK & SBI Bank Limited)"*** submitted to office of the Dean, Faculty of Management, Tribhuvan University, is my original work done for the partial fulfillment of the requirement for the Masters of Business Studies (MBS) under the supervision of Kapil Khanal of Shanker Dev Campus, Putalisadak, Kathmandu.

……...

Prakash Khanal
Researcher
College Roll No: 445/065
Shanker Dev Campus
T.U. Regd. No. 7-2-470-61-2005

Date: - September, 2014

ACKNOWLEDGEMENT

This is an attempt to present thesis entitled ***"A Study On Risk & Return Analysis Of Nepalese Commercial Banks (With Reference to NABIL, EBL, BOK & SBI Bank Limited)"*** prepared for partial fulfillment of the requirement for the Degree of Master of Business Studies (MBS) is an outcome of continuous and immeasurable cooperation and support of several hands. I would like to express my heartfelt gratitude to all for their support.

I express my sincere honor and special sense of gratitude to my academic supervision, Kapil Khanal for their generous guidance, thoughtful encouragement and brilliant insight throughout this research work.

I owe great intellectual debt for support and immense contribution to Administrative of SBI, NABIL, BOK & EBL. I am thankful to library staffs of Shanker Dev Campus and T. U. library for their cooperation.

Prakash Khanal

TABLE OF CONTENTS

Page No.

Recommendation

Viva–Voce Sheet

Declaration

Acknowledgement

Table of Contents

List of Tables

List of Figures

Abbreviations

CHAPTER - I

INTRODUCTION

1.1 Background of the Study 1

1.2 Profile of Sample Companies 3

1.2.1 Everest Bank Limited (EBL) 3

1.2.2 Nepal SBI Bank Limited (SBI) 4

1.2.3 NABIL Bank Limited (NABIL) 5

1.2.4 Bank of Kathmandu (BOK) 6

1.3 Statement of the Problems 6

1.4 Objectives of the Study 8

1.5 Significance of the Study 8

1.6 Limitation of the Study 9

1.7 Organization of the Study 10

CHAPTER – II

REVIEW OF LITERATURE

2.1 Conceptual / Theoretical Review 12

2.1.1 Common stock 12

2.1.2 Features Common Stock 14

2.1.3 Advantages of Common Stock Financing 15
2.1.4 Disadvantages of Common Stock Financing 17
2.1.5 Right of Common Stock Holders 17
2.1.6 Earning Per Share 18
2.1.7 Retained Earning 19
2.1.8 Dividend per Share 19
2.1.9 Book Value per Share 19
2.1.10 Market Value per Share 20
2.1.4 Return on Common Stock 20
2.1.5 Risk on Common Stock 23
2.1.7 Relationship between Risk and Return 26
2.2 Review of Journal and Articles 27
2.3 Review of Previous Thesis 30
2.4 Research Gap 34

CHAPTER – III

RESEARCH METHODOLOGY

3.1 Research Design 36
3.2 Sources of Data 37 37
3.3 Method of Data Collection 37
3.4 Population & Sample of the Study 37
3.5 Data Analysis Tools 38
3.5.1 Financial Tools 38
3.5.2 Statistical Tools 40
3.6 Methods of Analysis and Presentation 43

CHAPTER – IV

PRESENTATION & ANALYSIS OF DATA

4.1 Analysis of NEPSE Index Movement 44

4.2 Analysis of Commercial Baking Industry Index Movement 45

4.3 Analysis of Major Financial Indicator, Stock Price & Risk and Return of Sample Bank 48

4.3.1 Everest Bank Limited (EBL) 63

4.3.2 NABIL Bank Limited (NABIL) 66

4.3.3 BOK Limited (BOK) 55

4.3.4 Nepal SBI Bank Limited (SBI) 58

4.4 Analysis of Common Stock's Price 61

4.6 Hypothesis Test 63

4.7 Major Findings 64

CHAPTER - V

SUMMARY, CONCLUSION & RECOMMENDATION

5.1 Summary 66

5.2 Conclusion 68

5.3 Recommendations 69

BIBLIOGRAPHY

APPENDICES

LIST OF TABLES

Table		Page No.
4.1	NEPSE Index Movement	44
4.2	Commercial Baking Industry Index Movement	46
4.3	Analysis of Major Financial Indicator of EBL	48
4.4	Summary of Risk and Return Indicators of EBL	50
4.5	Analysis of Major Financial Indicator of NABIL	51
4.6	Summary of Risk and Return Indicators of NABIL	53
4.7	Analysis of Major Financial Indicator of BOK	55
4.8	Summary of Risk and Return Indicators of BOK	57
4.9	Analysis of Major Financial Indicator of SBI	58
4.10	Summary of Risk and Return Indicators of SBI	60
4.11	Analysis of Common Stock's Price Based on Required Rate of Return and Eexpected Rate of Return	62
4.13	One Way ANOVA Table	63
4.14	Summary of Hypothesis Test	63

LIST OF FIGURES

Figure		Page No.
4.1	Graph of NEPSE Index Movement	45
4.2	Graph of Commercial Baking Industry Index Movement	46
4.3	Annual Realized Rate at Return from Banking Index	47
4.4	Graph of MVPS of EBL	48
4.5	Graph of Annual Return on Stock of EBL	49
4.6	Proportion of Systematic Risk & Unsystematic Risk of EBL	51
4.7	Graph of MVPS of NABIL	52
4.8	Graph of Annual Return on Stock of NABIL	52
4.9	Proportion of Systematic Risk & Unsystematic Risk of NABIL	54
4.10	Graph of MVPS of BOK	55
4.11	Graph of Annual Return on Stock of BOK	56
4.12	Proportion of Systematic Risk & Unsystematic Risk of BOK	58
4.13	Graph of MVPS of SBI	59
4.14	Graph of Annual Return on Stock of SBI	59
4.15	Proportion of Systematic Risk & Unsystematic Risk of SBI	61

ABBREVIATIONS

ABBS	Any Branch Banking System
ATM	Automated Teller Machine
BOK	Bank of Kathmandu
CAPM	Capital Assets Pricing Model
CV	Coefficient of Variation
DPS	Dividend Per Share
EBL	Everest Bank Limited
HBL	Himalayan Bank Limited
HPR	Holding Period Return
IFC	International Finance Corporation
LC	Letter of Credit
MBA	Masters' of Business Administration
MBS	Masters' of Business Studies
MVPS	Market Value Per Share
NCC	Nepal Credit and Commerce Bank Limited
NEPSE	Nepal Stock Exchange
NIC	Nepal Industrial & Commercial Bank
NP	Net Profit
NRB	Nepal Rastra Bank
NSBIL	Nepal SBI Bank Limited
P/E	Price Earning
PNB	Panjab National Bank
SCBNL	Standard Chartered bank Limited
SCT	Smart Choice Technology
SDC	Shankar Dev Campus
SEBON	Securities Boar of Nepal
SR	Systematic Risk
T. U.	Tribhuwan University
USR	Unsystematic Risk

CHAPTER - I

INTRODUCTION

1.1 General Background of the Study

Commercial banks are those, which pool together the saving of the community and arrange them for the productive use. They accept deposits from the public and provide same deposits to the public as loan and advances. In fact, they circulate the money and create credit. The concept of the commercial banks made the economy strong. And now it's playing important role to make country economically strong. According to the Black's law Dictionary "Commercial Bank" means a bank authorized to receive both demand and time deposits, to engage in trust services, to issue letter of credit, to rent time-deposit boxes, and to provide similar services. Commercial Bank means a bank which operates currency, exchanges transactions, accepts deposits, provides loan, perform, dealings, relating to commerce except the banks which have been specified for the co-operative, agricultural, industry of similar other specific object (Bhandari, 2003:5)

Capital is the lifeblood of the business organizations. Every business enterprise requires short term, intermediate and long term capital for the smooth operation and expansion of the organizational activities. Among these types of fund, the long term funds plays highly significant role for future growth and prosperity of the organizations. The economy of the country largely depends upon the utilization of its resources and mobilization of capital. The mobilization of the capital is an important tool to utilize the resources and hence it affects the overall economy. The Financial institutions contribute the national economy by accumulating the capital funds to meet the financial needs of different productive sectors. They actively participate in the money market and the capital market, as both suppliers and demanders of the funds.

Common stock is legal representation of equity for ownership position in a corporation. It lies under variable income security between two types of securities: fixed income and variable income and is a negotiable instrument. It can be bought and sold in the secondary market. The holders of common stock are called shareholders or stockholders. The common stock is the permanent and vital source of capital since they do not have a maturity date. As a return to the contribution of shareholders investment, they are entitled to dividends. It means, in the case of organizational profit, the shareholders are provided a certain sum of money as dividend. The amount or rate of dividend is fixed by the Board of Directors. Hence, the common stock is a kind of variable income security. Being the owner of the company, the shareholders bear the risk of ownership. They are entitled to dividends after the claim of outsiders are satisfied.

Financial Market can be defined as the centre which provides facilities for buying and selling of financial claims and services. Financial market includes the trading activities of financial institutions like Share, Bond, Debenture, etc. Hence it actually refers to the money market and capital market which facilitates the transfer of funds from the savers to users.

Primary Market is the place where corporations and government issue new securities. All securities, whether in money or capital markets, are initially issued in Primary Market. This is the only market in which the company or government is directly involved in the transactions and receives directly benefits from an issue that is the company actually receives the proceeds from the sale of securities. Once the securities begin to trade among individuals, businessman, governments, financial institutions, savers and investors, they become a part of the secondary market. The term Primary Market is used to denote the market for the original sale of securities by an issuer and to the public.

The issuer receives cash which may be invested in productive assets or retirement of debt. Corporatebodies issue new securities in the primary market hence, securities available for the first time are offered through the primary security market. The issuer may be a brand new company or that has been in business for years. The securities offered might be a new type for the issuer or additional amount of security- used in the past.

Secondary Market is the market in which securities are traded that has been issued in the past. Simply, secondary markets are markets in which existing outstanding securities are traded between the investors i.e. buyers and sellers. It creates the price and allow for liquidity. Thus, Secondary Market mainly deals with previously issued shares traded through stock exchange, over the counter market or directly selling.

The function of the secondary market is to provide liquidity for securities purchased in the primary market. Once investors have purchased securities in the primary markets, they need a place to sell those securities. Without the liquidity of the secondary market, firms would have difficulty raising.

1.2 Profile of Sample Companies

1.2.1 Everest Bank Limited (EBL)

Everest Bank Limited was registered on November 17, 1992 and come into operation on October 18, 1994 with an objective of extending professionalized and efficient banking services to various segments of the society. Today the bank has grown to become one of the leading banks in Nepal.

Panjab National Bank (PNB) joined hands with EBL as a Joint Venture in 1997 and turned it around to a highly profitable bank. There has been no looking back since then. PNB provides top management support under the Technical Service Agreement. PNB joint venture partner of EBL one of the largest

nationalized bank in India having 114 years of banking history holds 20% equity.

Everest Bank has recognized the value of offerings a complete range of services and has pioneered in extending various customer friendly products such as home loan, education loan, EBL flexi loan, EBL property plus (future lease rental), Home equity loan, vehicles loan, Loan against share, loan against life insurance policy and loan for professional. The bank is providing customer friendly services through a network of 22 branches.

Everest Bank Limited was the first bank to introduce Any Branch Banking System (ABBS) in Nepal. All the branches of the bank are connected with ABBS which enables the customers to do all their transactions from any branches other than where they have their account. Everest Bank has introduced the Mobile Vehicle Banking System to see the segment deprives of proper banking facilities through Birtamod branch, which is the first of its kind.

The bank has committed to provide excellent professional services & improve its position as a leader in the field of financial related services, use latest technology aimed at customer satisfaction & act as an effective catalyst for socio-economic developments. The bank was bestowed with the "NICCI Excellence award" twice in 1999 and 2003 by Nepal India chamber of commerce for its spectacular performance under finance sector and the bank has been conferred with "Bank of the Year 2006, Nepal" by the banker, a publication of financial times, London (www.ebl.com.np).

1.2.2 Nepal SBI Bank Limited (SBI)

Nepal SBI Bank Ltd. (NSBL) is the first Indo-Nepal joint venture in the financial sector sponsored by three institutional promoters, namely State Bank of India, Employees Provident Fund and Agricultural Development Bank of Nepal. Nepal SBI Bank was incorporated in Nepal on April 28, 1993, as a

public limited company. It commenced operations on July 7, 1993, and is principally engaged in the business of banking, as defined in the Banks and Financial Institutions Act, 2006.

The Bank is listed on Nepal Stock Exchange, Kathmandu. Nepal SBI Bank has since expanded into a network of 59 banking and non-banking outlets including 50 full-fledged commercial banking branches, 6 extension counters and 3 administrative offices. A network of 68 online ATMs covering all major cities in Nepal, 24 hours Mobile Banking and Internet Banking services support the delivery for speedier customer service. As on July 16, 2011, the Bank with a staff complement of 505 employees had equity of Rs. 2.1 billion and total assets of Rs. 46.1 billion, with more than 3,00,000 banking customers.

The Bank has been taking up diverse Community Service. Initiatives beyond the call of regular banking business, to establish itself as a responsible corporate citizen of this great nation. Its aim is to become "the banker to every Nepali" (Annual Reports of SBI; 2010/011: 7).

1.2.3 NABIL Bank Limited (NABIL)

Nabil bank Ltd., the first foreign joint venture bank in Nepal was established in 1984, under the Company Act 1964. It was incorporated with the objective of extending international standard modern banking services to the various sector of the society. Pursuing its objective, Nabil bank provides a full range of commercial banking services through its 19 points of representation across the country and over 170 reputed correspondent banks across the globe. The mission of Nabil bank is to be the "Bank of the 1st Choice". The slogan of NABIL Bank is "Your Bank at Your Service".

The bank expanded its banking services towards the different and parts of the country by expanding its branches. Besides banking, the bank also provides

Credit cards, International trade and bank guarantee, Tele banking, Society for worldwide interbank financial telecommunications, Safe deposit locker, Western Union Money Transfer, ATM (Automated Teller Machine), E-Banking and Remittance facilities to its clients (www.nabilbank.com.np)

1.2.4 Bank of Kathmandu Limited (BOK)

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. The vision of BOK is to become a significant contributor to the economic development of Nepal by distinguishing the Bank as an efficient, competitive, safe and top-quality financial institution and the mission of BOK is to offer financial services and become the "Bank of Choice" by dedicating the progress and growth of the institution to the community, customers, employees and stockholders.

November 30, 2011, will henceforth be marked as a milestone date in the history of the Bank, for it was on this day that an eminent panel of judges selected Bank of Kathmandu Ltd. as the deserving recipient of the “Bank of the Year – 2011” award. This prestigious award, established by The Banker – Financial Times, London, is the world’s longest running international banking title. It is a testament to the strong management, sound business model and prudent risk approach of the winner Bank (www.bok.com.np)

1.3 Statements of the 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.

Only few investors of Nepalese share market are aware of the causing agent of share price. It means that most of the investors are unknown about the financial performance of the company but tends to invest on the company without proper financial analysis. It causes the unusual relation of the financial indicators – EPS, BPS, DPS, etc. with the market price of the share. The market rumors relating the financial position of the company is the major analytic tool for the most of the Nepalese investors. That has caused that the MVPS of the most of the foreign joint venture commercial bank are high in comparison with the other banks and manufacturing companies. In this context, the research problem of this study can be presented in the following points.

- What is the trend of MVPS of common stock of Nepalese commercial banks?
- What are the major determinants of the stock price of Nepalese Commercial banks listed in NEPSE?
- Is there any relation between MVPS with the major financial indicators (EPS, BPS and DPS)?
- What is the risk & return associate in the common stock investment of commercial banks?
- Are the investors aware of financial indicators which influence the MVPS of the company?

1.4 Objectives of the Study

The major objective of this study is to find out the trend of MVPS of common stock of Nepalese commercial banks. The general objectives of this study are listed below.

- To examine and evaluate the relationship between Market Value Per Share with the various financial indicators like Earning per Share & Dividend Per Share etc.
- To analyze the market trends of MVPS of commercial banks with their financial indicators.
- To assess the risk & return on common stock investment of commercial banks?
- To provide a set of recommendations based on the findings of the study to the concerned.

1.5 Significance of the Study

The study focuses on the stock price movement 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.

1.6 Limitations of the Study

Due to the limitations of the time, cost and other resources this research work is not able to study thewhole Nepalese capital market in details. The major limitation of the study is presented below.

- This study covers only the relevant data of five years i.e. from fiscal year 2065/2066 to 2069/2070.
- The study is based on Primary and Secondary Data. So the validity and reliability of the data depends upon their sources.
- The study is done for the particular fulfillment for MBS degree in Management, so it is not a comprehensive study.
- Only few financial and statistical tools are used in the study.
- For the purpose of study only common stocks or ordinary stocks are taken.
- The study has been designed to concentrate on some of the banking sector, which is a part of total capital market. So, the conclusion cannot be generalized on the total capital market.
- The study is only concern to the stock price behavior.

1.7 Organization of the Study

Chapter - I - Introduction

This chapter deals with the subjects matters of the study consisting background of study, profile of sample companies, statement of problem, objective of the study, significance of the study, limitation of the study and organization of the study.

Chapter - II - Review of Literature

This chapter deals with review of the different literature of the study field. Therefore, it includes conceptual framework along with the review of major books, journal, research work etc.

Chapter - III - Research Methodology

This chapter includes research design, population & sample, sources and types of data, data processing and method of analysis.

Chapter - IV - Presentation and Analysis of Data

This chapter deals with analysis and interpretation of the data using financial and statistical tools describe in chapter three. Similarly, this chapter also includes the major findings of the study.

Chapter - V - Summary, Conclusion and Recommendation

This is the last chapter of the study. It summarizes the result of analysis and suggestive framework.

Besides these, bibliography and annexure are presented at the end of the thesis. Similarly recommendation, viva voice sheet, acknowledgements, table of

contents, list of tables, list of figures and abbreviations are included in the front part of the thesis report.

CHAPTER - II

REVIEW OF LITERATURE

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. A short glance of past studies in common stock and their determiners are present in this section. In the context of Nepalese Financial Market, no sufficient studies have been made in the past related to share market. Most of the investors have no sufficient knowledge about the share market. The literature review may also serve as a kind of bibliographic index and guide for the readers. It also demonstrates where the current study fits into the scheme of things. The objective of reviewing the literature is to develop certain expertise and knowledge in one's area.

2.1 Conceptual / Theoretical Review

2.1.1 Common stock

Common stock is a form of corporate equity ownership, a type of security. The terms "voting share" or "ordinary share" are also used in other parts of the world; common stock being primarily used in the United States. It is called "common" to distinguish it from preferred stock. If both types of stock exist, common stock holders cannot be paid dividends until all preferred stock dividends (including payments in arrears) are paid in full.

In the event of bankruptcy, common stock investors receive any remaining funds after bondholders, creditors (including employees), and preferred stock holders are paid. As such, such investors often receive nothing after a bankruptcy. On the other hand, common shares on average perform better than preferred shares or bonds over time. Common stock usually carries with it the

right to vote on certain matters, such as electing the board of directors. However, a company can have both a "voting" and "non-voting" class of common stock.

Holders of common stock are able to influence the corporation through votes on establishing corporate objectives and policy, stock splits, and electing the company's board of directors. Some holders of common stock also receive preemptive rights, which enable them to retain their proportional ownership in a company should it issue another stock offering. There is no fixed dividend paid out to common stock holders and so their returns are uncertain, contingent on earnings, company reinvestment, and efficiency of the market to value and sell stock.

Common stock is legal representation of equity for ownership position in a corporation. It lies under variable income security between two types of securities: fixed income and variable income and is a negotiable instrument. It can be bought and sold in the secondary market. The holders of common stock are called shareholders or stockholders. The common stock is the permanent and vital source of capital since they do not have a maturity date. As a return to the contribution of shareholders investment, they are entitled to dividends. It means, in the case of organizational profit, the shareholders are provided a certain sum of money as dividend. The amount or rate of dividend is fixed by the Board of Directors. Hence, the common stock is a kind of variable income security. Being the owner of the company, the shareholders bear the risk of ownership. They are entitled to dividends after the claim of outsiders are satisfied.

2.1.2 Features of Common Stock

a. Claim on Income

The common stockholders bear a right to claim on income, which is earning available for ordinary shareholders, after paying expenses, interest charges, taxes and preferred dividend, if any. The income may be distributed among shareholders in the form of dividend or retained earnings. Dividends are immediate cash flow to shareholders, whereas retained earnings are the income reinvested in the organization. Which ultimately increase the net worth of Shareholders Claim onAssets. The Common Stockholders have a residual claim on the company's assets in case of liquidation. Out of the realized value of assets, first the claims of debt-holders and then preference shareholders are satisfied, and the remaining balance, if any, is paid to the common stockholders.

b. Right to control

The ordinary shareholders have the legal power to elect directors to the board. If the board fails to protect their interests, they can replace the directors. They are able to participate in the management of the company through their voting right and right to maintain proportionate ownership.

c. Voting Right

For each share of common stock owned, the common stockholder has the right to cast one vote at the Annual General Meeting of stockholder. Common stockholders have the right to vote on stockholders matter, such as the selection or the board of directors, sale of fixed assets, merger of the company etc.

d. Pre – emptive Right

The law grants shareholders the right to purchase new share in proportion to their current ownership. Thus the pre-emptive right entitles a shareholder to maintain his proportionate share ownership in the company. The stockholder's option to purchase, a stated number of new shares at a specified price during a given period, is called right which can be exercised at a subscription price which is generally much below the current market price of shares.

e. Limited Liability

The common stockholders are the true owner of the company, but their liability is limited to the amount of their investment in shares. If a stockholder has already fully paid the issue price of share purchased, s/he has nothing more to contribute in the event of financial distress or liquidation. The limited liability feature of share encourages unwilling investors to invest their funds in the company which helps company to raise funds. (Pandey, 1999:905-908)

Most of the investors are wise to invest their saving funds in stocks, with the expectation of future cash inflow as dividends and maximization of value of their holdings in the market. Dividends and value of the firm are linked with the earning power of the firms, which ultimately affects the market price of shares. So, brief discussions have been presented in the following paragraphs, on earning per share, dividend per share, book value per share and market price per share.

2.1.3 Advantages of Common Stock Financing

There are several advantages of the corporation associated with the common stock financing, which can be mentioned as follows.

- Common Stock does not obligate the firm to make fixed payments to stockholders. If the company generates earnings and has no pressing

internal needs, it can pay common dividends. Had it used debt, it would have incurred a legal obligation to pay interest on it, regardless of its operating conditions, its cash flow, and so on.

- Common stock provides a cushion against losses from the creditor‟s viewpoint, the sale of common stock increase the creditworthiness of the firm. This, in turn, raises its bond rating lowers its cost of debt, and increases its future ability to use debt.
- Common stock carries no fixed maturity date – it is never has to be repaid as would a debt issue. If a company's prospects look bright, then common stock can often be sold on better terms than debt. Stock appeals to certain groups of investors because (a) it typically carries a higher expected total return (dividends plus capital gains) than does preferred stock or debt and (b) since stock represents the ownership of the firm, it provides the investor with a better hedge against unanticipated inflation than does preferred stock or bonds. Ordinarily, common stock increases in value when real asset values rise during inflationary periods.
- When a company is having operating problem, it often needs new funds to overcome its problem. However, investors are reluctant to supply capital to a troubled company, and if they do, they generally require some type of security. From a practical standpoint, this means that a firm which is experiencing problems can often obtain new capital only by issuing debt, which is safer from the investor‟s standpoint. Corporate treasures are well aware of this so they often have option to finance with common stock so as to maintain a reserve borrowing capacity- indeed surveys have indicated that maintenance of an adequate reserve of borrowing capacity is the primary consideration in most financing decisions. (Western and Brigham, 1987:678-679)

2.1.4 Disadvantages of Common Stock Financing

The disadvantages of common stock financing can be summarized in the following points.

- The sale of common stock may extend voting tight or control to the additional stock owners
- who are brought into the company. For this reason, additional equity financing is often avoided by small firms, whose owner-managers may be unwilling to share control of their companies with outsiders. Note, though, that firms can use special classes of common stock that do not carry voting rights.
- Common stock gives more owners the right to share in income. The use of debt enables the firm to acquire funds at a fixed cost, whereas common stock gives equal right to new stockholders to share in the net profits of the firm.
- The costs of underwriting and distributing common stock are usually higher than those for underwriting and distributing preferred stock or debt.
- The sale of new common stock may be perceived by investors as a negative signal, and hence cause the stock price to fall. (Brigham and Gapenski, 1990:472)

2.1.5 Right of Common Stock Holders

a. Right to Income

Common stockholders are entitled to share in the earning of the company only if cash dividends are paid. Shareholders also prosper from the market value appreciation of their shares but they are entirely dependent on the board of directors for the declaration of dividends that give them income from the

company. Thus the priorities of common stockholders differ markedly from that of the creditors.

b. Voting Right

Because the common stockholders of a company are its owners, they are entitled to elect a board of directors. In a large corporation, shareholders usually exercise only indirect control through the board of directors they elect. The board, in turn, selects the management and management actually controls the operations of the company. Voting can be done either in person at the shareholders annual meeting or by proxy.

c. Right to Purchase New Share

A firm's corporate charter or state statute may require that a new issue of common stock or an issue of securities convertible into common stock be offered first to existing common stockholders because of their preemptive right.

2.1.6 Earning Per Share

Earning per Share is calculated by dividing a company's net revenues by the outstanding shares. This gives a number that can be used to compare the earning of companies since it is unlikely any two companies will have the same number of shares outstanding. Accounting earnings that represent the different revenues and expenses, including the expenses associated with non-equity source of fund (such as interest to debt, dividend of preference shares) is known as total earning available for common stock. If this portion of income is divided by number of outstanding shares, we get earning per share. (Sharp and Bailey, 2001:633)

2.1.7 Retained Earning

The total amount of earning of the firm that has not paid out as dividend through its history and indicated in the Balance Sheet as earning is known as Retained Earnings. These earnings are reinvested in the firm.

2.1.8 Dividend per Share

Dividend per share is calculated by dividing the total dividend amount paid for the financial period by the number of ordinary shares in issue. The directors may pay an interim dividend during the accounting period and then recommend a final rate of dividend per share for approved by shareholders at the Annual General Meeting (AGM).

2.1.8.1Forms of Dividend

Cash dividend: Payment made in cash to shareholder are termed as cash dividends. Distribution of cash dividend causes the reduction in total assets and net worth of the company.

Stock Dividend: Distribution of bonus share as dividend to the stockholder is known as Stock Dividend. This increases the number of shares of the company.

2.1.9 Book Value per Share

The book value of the equity reflects the historical costs of – brick and meters the physical assets of the company. A well run company with strong management and an organization that functions effectively should have a market value greater than the historical book value of its physical assets. (Western & Brigham, 1987: 674)

2.1.10 Market Value per Share

Market value per Share is the current price at which the stock is traded. For activity traded stocks that have thin markets, prices are difficult to obtain. Even when obtainable, the information may reflect only the sale of a few shares of stock and non typing the market value of the form as a whole. For companies of this sort, care must be taken in interpreting market price information. The market price of share gives the value of shares, and the value of the organization. The market price is that price in which shares are traded or the stock amount which is paid by the buyer to the seller to purchase the stock of company. Since the common stock holders are owner of organization and have least priority to claim in liquidation, the price is highly volatile very sensible to environmental factors.

Due to the market imperfection and uncertainty, shareholders may give a higher value to the near dividends and capital gains. Thus, payment of dividend may significantly affect the market price of shares. Higher dividends increase the value of shares and low dividends reduce the value. (Pandey, 1995: 681)

2.1.4 Return on Common Stock

The meaning of return has different meaning to different investors. The rate of return from capital investment is a concept that has different meaning to different investors. Some competitive seek near term cash inflow and give less value to more distant returns. Return can be expressed by cash dividend or capital gain or loss. Some investors measure return using financial ratios. Single holding period return may be defined as all possible future cash flows that can be earned holding securities up to holding period. It can be also defined as the changes in the value plus any cash distribution expressed as a percentage of the beginning of the period of investment value. An investor can obtain two kind of income from the investment is a share or bonds.They are as follows;

- Income from price appreciation or losses from price depreciation. It is called capital losses and gain.
- Cash flows income from cash dividend or coupon interest payment.

Return shows financial position of any organization. The company position of any Organization may be better if it has higher return. Return is rewards for an investor from his or her organization. Investors always want to maximize expected return subject to their tolerance for risk. Return is motivating forces and it is the key method available to investors in capering investment alternatives. Realized rate of return and expected rate of return which are often used in language of investment. Realized rate of return is after the fact return that was earned or it is the historical return.

The return on investment can be measured as the total gain and losses expressed on the behalf of owner over the given period of time. It is commonly stated as the change in value plus any cash distribution expressed as percentage of the beginning period investment value. The expression for calculating the rate of return (Ks) earned any assets over the period (t) is commonly defined as;

Total Return = Capital Gain + Regular Gain (Ordinary Gain)

Capital Gain = Ending Price - Beginning Price

Regular Gain = Dividend Or Interest (Bhattarai; 2008:102)

2.1.4.1 Single Period Rate of Return

The investment return is defined as the after tax increase in the value of the initial investment. The increase in value can come from to sources direct cash payment to the investor or an increase in the market value of the investment relative to the original purchase price. The rate of return over the holding period, or HPR is computed as.

$$\text{HPR} = \frac{\text{Endng Price} - \text{Begnning Price} + \text{Cash Receipt}}{\text{Begnning price}}$$

2.1.4.2 Required Rate of Return

When setting the required rate of return on an Investment, an investor must consider the real rate of return, expected inflation and risk. Because consumption is foregone today, the investor is entitled to a rate of return that compensated for this deferred consumption since the investor expects to receive an increase in the real goods purchase later, and assuming for the moment, zero inflation and risk, the required rate could equal to the real rate of return, in which case it would represent the pure time value of money. The capital markets determine this real based upon the supply of money to be invested relative to the demand for borrowed money (Cheney and Moses; 1995: 33).

The required rate of Return is the minimum rate of return that an investor expects from his/her investment in risky assets. It is the function of real rate of return and risk. The required rate of return is the return on risk free assets.

2.1.4.3 Expected Rate of Return

If an investment is to be made, the expected rate of return or the expected holding period return, should be equal to or greater than the required rate of return for that investment. The expected rate of return is based upon the expected cash receipt (e.g. divided and interest) over the holding period and the expected ending or selling price. The expected rate of return is unknown future return. The investor has forecast possible outcomes each based upon a possible state of the economic. Each economic state will result in a different expected rate of return. Subjective probabilities are assigned to each out come. The overall expected rate of return, E (HPR) can be calculated as a weighted average of the three forecasts (Cheney and Moses; 1995: 35).

2.1.5 Risk on Common Stock

Risk, in simple word, is an uncertainty. Risk and uncertainties are the facts of life so to the common stock holder. Technically, their meanings are different. Risk, simply in Investment, means a chance of happening some unfavorable event or danger of losing some value. Risk suggests that a decision maker knows the possible consequences of a decision and their relative livelihoods at the times he makes decision.

"The practice is to translate the uncertainty into a mathematical value which represents the uncertainty into a mathematical value which represent the best estimate of all uncertainty value. But risk is treated differently. Although risk arises from uncertainty, its magnitude depends upon the degree of variability in uncertain cash flows, it is measured in terms of standard deviation. In project analysis the project risk indicated of the probability of return being less than the expected value higher the probability of such loss or less return, higher the project risk" (Pradhan, 1992: 244).

"Risk is defined in Webster's dictionary as a „hazard: a peril: exposure to loss or journey", thus for most, risk refers to the chance that some unfavorable event will occur. If u invest in speculative stock (or, really, any stock), you are taking a risk in the hope of making an appreciable return" (Weston, Basely and Brigham; 1995: 182).

2.1.5.1Sources of Risk

a. Interest Rate Risk

Interest rate risk is potential variability of return caused by changed in the market interest rate. If market interest rates rise, then investment's values and market price will fall and vice versa. The variability of return that results is interest rate risk. This interest rate risk affects the price of bond and stock etc.

b. Purchasing Power Risk

It is the variability of return an investor suffers because of inflation. Economists measure the rate of inflation by using a price index. The percentage change in the consumers price index is a widely followed measure of the rate of inflation.

c. Bull-Bear Market Risk

Bull bear risk arise from the variability in market return resulting from alternating bull and bear market forces. When a security index arises fairly consistently from a low point, called a though, for a period of time, this upward trend is called a bull market. The bull market ends when the market Index reached a peak and starts a downward trend. The period during which the market declined to the next through is called a bear market.

e. Management Risk

Though many top executives earn princely salaries, occupy luxuries offices and wield enormous power within their organization, they are mortal and capable of making a mistake or a poor decision. Furthermore errors made by business managers can harm those who invested in their firm forecasting management errors is difficult work that may not be worth the effort and, as a result, impacts a needlessly skepticism with informed insight as they endeavor to analyze subjective management risks.

f. Default Risk

Default risk is that portion of an investments total risk that results from changed in the financial integrity of the investment.

g. Liquidity Risk

Liquidity risk is that portion of an assets total variability of return which results from the price discounts given or sales commissions paid in order to sell the asset without delay.

h. Call Ability Risk

That portion of a securities total variability of return that derives from the possibility that the issue may be called is the call ability risk. Call ability risk commands a risk premium that comes in the form of a slightly higher than average rate of return. This additional return should increase as the risk that the issue will be called increases.

i. Convertibility Risk

Convertibility risk is that portion of the total variability of return from a convertible preferred stock that reflects the possibility that the investment may be converted into the issuer's common stock at a time harmful to the investors best interests.

j. Political Risk

Political risk arises from the exploitation of a politically weak group for the benefit of a politically strong group, with the efforts of various group to improve their relative positions increasing the variability of return from the affected assets (Frank, & Keith, :2004).

k. Industry Risk

An industry may be viewed as a group of companies that complete with each other to market a homogeneous product. Industry risk is that portion of an investments total variability of return caused by events that effect the products and firms that make up an industry. The stage of the industry's life cycle,

international tariffs and or quotas on the products produced by an industry, product or industry related taxes, industry wide labor union problems, environmental restrictions. Raw materials availability and similar factors interact and affect all the firms in an industry simultaneously (Cheney and Moses; 1995: 33).

2.1.7 Relationship between Risk and Return

The relationship between risk and return is described by investor perception about risk and their demand for compensation. Those investors who can tolerate higher level of risk should be regarded with higher level of return. This statement is supported by the most empirical studies of historical risk return relationship. No investors like to invest in risky security unless he is assured of adequate compensation for the assumption of risk. Therefore, it is the investors required risk premium that establishes a link between risk and return. In a market dominated by rational investors, higher risk will command higher premiums, the trade-off between the two assumes a liners relationship between risk and risk premium.

The observe different in both the levels and variability of the rates of return across securities are indicative of the underlying risk return relation in the market (Lorie, Dodd and Kempto, 1983:33).

Generally, there is a positive relationship between rate of return and risk. It means an investor can usually attain more return by selecting dominant assets that involve more risk. While it is not always true that a riskier asset will pay. A higher average rate of return, It is usually. The reason is that investors are risk averse. As a result, high risk assets most offer investors high return to induce them to make this riskier investment. Naturally, investors are likely to prefer more return and less risk. It means investors will not choose an investment that guarantee less return when investment promising higher return

in the same level of risk class are readily available. Risk and Return relationship can be shown by following figure.

2.2 Review of the Journals and Articles

Review of articles, journals, bulletins and previous studies 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.

Gurung (2004) in his article *"Growth and Performance of Securities Market in Nepal"* explain growth trend and analyze the performance of Nepalese securities market. Likewise, the variables such as number of listed and traded companies and their securities, number of transactions, trading turnovers, paid up value, market capitalization and NEPSE index were analyzed for the secondary market. His study on the securities market performance revealed that there was no synchronization among different securities market performance indicators, but it was true that they almost have depicted an erratic trend during the observed period. This indicated the unstable and poor performance of securities market. Relative to the overall economy,

the size of securities market was very small and the liquidity of securities was also poor. The study suggested that the Nepalese capital market was passing through a bearish situation. The growth and performance of Nepalese securities market was not satisfactory though it was improving gradually.

Dahal (2007) in his article *"The Performance of Nepalese IPO"* the performance of initial public offerings (IPOs) is one of those empirical questions that continuously draw the attention of many researchers in finance. Several researches have been carried out to examine the performance of IPOs in the developed countries like United States, France, Germany, United Kingdom, Japan, Israel etc. and in the developing countries

like India, Malaysia, China, etc. where IPO market mechanisms may not be identical. Several empirical studies put forward that IPOs are sold at a significant discount, a phenomenon known as under pricing, from the prices that prevail in the aftermarket that results into significantly better performance of IPOs than that of equity market in general. The deeper the under pricing, the higher will be the initial returns resulting into the better performance of IPOs for the investors. On the other hand, the deeper the under pricing, the lesser will be the net proceeds for the issuing companies resulting into the loss of wealth of the company as it represents the part of the cost of going public for the companies. Various explanations have been laid down to explain why IPOs outperform the market initially due to the under pricing of IPOs under varying IPO market mechanisms. There are both supporting and opposing evidence for these explanations in the finance literature. This study aims to examine the mechanism of Nepalese IPOs market, which stands out as an emerging market and their performance.

Robert & Nardin (2009) entitled *"Commonality in the Determinants of Expected Stock Returns"* they presented with evidence that the determinants of the cross section of expected stock return were stable in their identify and influence from period to period and from country. The determinants were related to risk, liquidity, price level, growth potential and stock price history. Out of sample predications of expected returns, using moving average values for the pay-offs to these firm characteristics were strongly and consistently accurate. Two findings, however, distinguished their paper form others in the contemporary literature. First, the stock with higher expected and realized rate of return was unambiguously of lower risk than the stocks with lower returns. Second, they found that the important determinants of expected stock returns were strikingly common to the major equity markets of the world. Given the nature of the texts, it was highly unlikely that those results may be attributed to

bias or data snooping. Consequently, the result seems to reveal a major failure in the efficient market hypothesis.

Himalayan Times (2011) published an article on the *"Stock Investment Behavior in Nepal".* The article stated that the problems at the NEPSE are twofold. 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 ongoing 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 health.

2.3 Review of Previous Research Work

Gurung (2007) conducted a study on the topic *"Share Price Behavior of Listed Companies in Nepal"* the main objectives of the study were as follows.

- To provide the conceptual glimpses of capital market.
- To evaluate the trend of trading turnover.
- To analyze the trends in paid value and market capitalization.
- To analyze the behavior of NEPSE index.
- To analyze the share price behavior of listed companies.
- To identify the market behavior in Nepal.

The major findings of the study were;

- The correlation coefficient of 0.97 between the number of traded and listed companies is significant, where as it is negative in trading group and perfectly positive in the case of banking group.
- The market capitalization value is in erratic trend in every group in each year. The proportion of market capitalization of banking group is the highest amongst six groups.
- During the study, the number of transactions in banking group is the highest, whereas it is lower in other groups. Hence, the investment on banking group is highly attractive and liquid.
- The prices of shares are fluctuating during the study period.

Shrestha (2008) conducted a study on the topic *"A Study on Stock Prices Behavior in Nepal"* with the following main objectives.

- To examine the efficiency of the stock market of Nepal
- To examine the serial correlation of successive daily price changes of the individual stocks.

- To determine whether the sequence of price changes are consistent with the changes of the series of random number expected under the independent Bernoulli process.
- To determine the efficiency of the stock market through the theoretical model of Efficient Market Hypothesis in the stock market.

The major findings of the study were;

- The price changes of the past and present can be very helpful to forecast future price changes. Therefore, there exists the sufficient amount of opportunities for the sophisticated investors.
- When log days increases, the mean value of serial correlation of coefficient is lower, that indicates that the past price changes may have low power to predict the future price changes in the long run.
- The price changes in the present and future stock market may not be independent of the price changes in the past and present respectively.
- There exist no profitable trading rules to make greater profit than they would make under the buy-and-hold strategy in their speculation through the information on past price changes.
- Nepal stock market is not efficient in pricing shares.

Paude, (2009) conducted a study on the topic *"A Study on Share Price Movements of Joint Venture Commercial Banks in Nepal"* with the following major objectives.

- To examine Nepal Stock Exchange Market and to judge whether the market shares of different banking indicators (book value per share and major financial ratio) explain the share price movements.
- To analyze the scenario why the shares of selected banks emerge as blue-chips to the potential investors and to make a conclusion on the basis of financial ratios analysis.

- To examine how risky the investments in commercial bank's shares are.

The main findings of the study were;

- The market share and the growth rates of different banking indicators used are not captured by the market shares of these banks.
- The ordinary least square equation of book value per share on market value per share reveals that the independent variable does not fully explain the dependent variable on the basis of the above mentioned two points; Nepal Stock Exchange operates in a weak form of efficient market hypothesis, indicating that the market prices move randomly. The market value per share does not accommodate all the available historical information.
- Having good track record of the financial position, the market potential investors buy the shares of joint venture commercial banks. Therefore, the shares of joint venture commercial banks emerge as blue-chip in the Nepalese stock market.
- The beta coefficient, which measures the riskiness of individual security in relative term, suggests that none of the shares of eight sampled banks are risky. Therefore, even a risk averter can go for making an investment in shares of these banks. The shares of publicly quoted joint venture commercial banks are less risky as compared to other average stocks traded in the stock exchange.

Manandhar (2010) conducted a study on the topic "A *Study on Risk and Return Analysis on Common Stock of Listed Commercial Bank in Nepal"* the main objective of the study was to analyze the risk return and other relevant variables that help in making decisions about investment on securities of the listed commercial banks. The other specific objectives of this study were as follows;

- To evaluate common stock of listed commercial bank in terms of risk and return and to perform sector wise comparison on the basis of market capitalization.
- To identity whether the share of commercial banks are overpriced, under priced or at equilibrium price.
- To identify the correlation between returns of commercial banks.
- To construct optimum portfolio from listed common stock.
- To make relevant suggestion and practical idea and materialize recommendations based on findings.

The major Findings of the study were;

- Among all the securities common stock is known to be must risky security.
- Higher the risk higher will be the return.
- Most of investors attached to common stock securities because of its higher expected returns.
- As for the investors it is important to analyze each investment, company to pentagonal returns with the risk and average the potential returns form an investment should compensate for the level of risk undertaken.

Baniya (2011) conducted a research on *"Share Price Behavior of Commercial* Banks and Effect of *Macroeconomic Variables in Nepalese Stock Market".* The specific objectives of the study were;

- To study and analyses stock price trend and behavior of the selected commercial banks
- To find out the main influencing factors of share price and to examine the impacts of GDP, rate of interest and rate of inflation on NEPSE Index.

- To establish the relationship between the NEPSE index and the macroeconomic variables GDP, rate of interest and rate of inflation during the study period.
- 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.

2.4 Research Gap

The review of past 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.

Moreover, the review also statistical tools such as correlation coefficient and regression analysis have often been used in most of these studies. Most of the thesis has taken sample of few commercial banks. Keeping in view the above research gap, this research has analyzed the share price behavior of the 4 commercial banks has been used as sample banks. This research work also presents the risk and return associated with the common stock investment.

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology is the way in which the data are collected for a research project. It refers to various sequential steps to be adopted by a researcher in studying a problem with a certain objective on view. It describes the method and process of getting to the solution process applied in the entire subject of the study. It is a way to systematically solve a research problem It embraces different dependent and independent variables, types of research design, research questions and hypothesis, sample, data collection activities, technique of analysis etc. Thus, research methodology is the process of arriving at the solution of the problem through planned and systematic dealing with the collection, analysis and interpretation of facts and figures (Kothari; 1990:39).

3.1 Research Design

Research design is a plan, structure and strategy of investigations conceived so as to obtain answer to research questions and to control variance. It is the arrangement of conditions for collection and analysis of data in a manner aiming at combining relevance to the research purpose with economy in procedure. Considering this study objectives, the analysis is based on certain research design. In order to achieve the objectives, descriptive and analytical research design has been adopted .Descriptive research design describes the general pattern of investors, business environment, problem of portfolio management etc. The analytical research design carries out the analysis of information and data. Most of the data and information of the study were related with the past phenomenon. On this background it can be considered as a historical research (Wolf; 1975:51)

The study covers the data from the FY 2063/064 to FY2067/068. It deals with the study of risk and return analysis and optimal portfolio creation of common stock investment. As the title of the study itself indicates that it is more analytical and empirical and less descriptive.

3.2 Sources of Data

The study is mainly based on secondary data. Data are collected from concern bank Nepal Rastra Bank, NEPSE, SEBO and various libraries. Likewise, the micro-level data have been derived the different libraries, such as Shanker Dev Campus, TU central library etc. Furthermore, several data and information were gathered from periodicals, economic journals and the other published and unpublished reports. Informal interview with the authorities of related institutions are also the other sources of data.

3.3 Method of Data Collection

It indicates the sources of data and how they collected. In this study, data are collected through published sources. They were collected from the correspondent offices and their respective websites.

The annual reports of sample banks for the period of five years are obtained from the website of selected banks. The data regarding the profile of sample banks and other related documents were collected from internet websites. Unpublished master's thesis, books, research papers, articles, journals have been collected mainly form Centre Library of Tribhuvan University, library of Shanker Dev Campus, Campus and NRB Magazines and newspapers are from concerned authorities.

3.4 Population & Sample

The term population of data denotes for the data of each organization which is within the boundary of specific organization whereas sample data are the data

of those organization which has been selected from that whole population for study. Random selected method is to be used while selecting sample organizations for this study. The population data for this study comprises 30 commercial banks, which are currently operating in Nepal. This study covers only the relevant data of five years i.e. from fiscal year 2065/2066 to 2069/2070. The sample consists of four selected bank. The selected sample bank for the analysis are as follows.

1. Nabil Bank Limited (NABIL)
2. Everest Bank Limited (EBL)
3. Bank Of Kathmandu (BOK)
4. Nepal SBI Bank (SBI)

3.5 Data Analysis Tools

A host of analytical tools can be applied to perform risk and return analysis of a firm. Following the nature of the study, a set of appropriate tools, particularly financial and statistical may be used for effective and significant analysis to meet the research objective.

3.5.1 Financial Tools

Financial analysis is the process of identifying the financial strengths and weaknesses of the organization by properly establishing relationships between the items of the balance sheet and the profit and loss account.

3.5.1.1Market Price of Stock (P)

In this study, market price is one of the major data. In this study we have taken closing price of the stock as market price because it is difficult to get all the required data accurately. The closing price is used as market price of stock that has a specific time of one year.

3.5.1.2Dividend (D)

Dividend is relevant during the computation of rate of return. This is a reward to the shareholders for their investment. If a company declares only the cash dividend, there are no problems to take the dividend amount. But, if the company declares stock dividend (Bonus Share), it is difficult to obtain the amount that really shareholders has gained. In this case, they get extra numbers of shares as dividend and simultaneously price the stock declines because of increased number of stocks. To get a real amount of dividend there are no any model. Therefore, the models have been developed considering practical as well as theoretical aspect.

Divided per share (DPS) = $\frac{Total\ Amount\ of\ Dividend\ Paid}{No.\ of\ Common\ Stock\ Outstanding}$

If company declares only cash dividend, there is no problem while taking the exact amount of dividend that is relevant. But if the company declares stock dividend (bonus share), it is difficult to obtain the amount that really shareholders have gained. In this case, they get extra numbers of shares as dividend and simultaneously price of stock declines as a result of increased number of stocks.

3.5.1.3 Return on Common Stock (R)

Return is the income received on as investment plus any change in market price, usually expressed as a percent of the beginning market price of the investment. The single period rate of return can be calculated by using the following formula.

Return on Share and Debenture (Rs) = $\frac{P_1 - P_0 + D_1}{P_0} \times 100$

Where,

P_1= Ending Value of Share

P_0= Beginning Value of Share

D_1 = Dividend per Share

3.5.1.4Beta coefficient (β)

The beta coefficient is an idea of systematic risk. It may be used for ranking the systematic risk of different assets. It is an index of the degree of movement of an assents return in response to a charge in the market return. An asset's historical returns are used in finding the asset's beta coefficient.

Beta coefficient shows the market sensitivity of stock. Higher the beta greater the sensitivity and reaction to the market movement. Beta coefficient of a particular stock will be less than equal or more than 1, but the beta of market beta serves. As a benchmark or measuring scale for the evaluation of risk of individual stock. Beta coefficient can be expressed as follows.

$$\text{Beta coefficient } (\beta j) = \frac{\text{cov}(r_i r_m)}{\sigma m^2}$$

Where,

$\text{cov}(r_i r_m)$ = Covariance of the return on assets j, and market portfolio.

σm^2 = Variance of the return on the market portfolio.

R_m = required rate of return on the market portfolio of securities.

3.5.2 Statistical Tools

Statistical tools are used to analyzed the relationship between two or more variables and to find how these variables are related.In this study,following statistical tools are used.

3.5.2.1Expected Rate of Return $E(R_j)$ / Average

Expected rate of return $E(R_j)$ is the arithmetic mean of the past years return. It can be calculated using the following formula,

$$E(R_j) = \sum Pj \times Rj$$

Where,

Pj = probability distribution of stock j

Rj = Rate of return of stock j

In another way, when historical data (time series data) are given, it can be calculated as,

$$E(R_j) = \frac{\sum Rj}{N}$$

Where,

$E(R_j)$ = Expected rate of return on stock j

N = Number of years that the return is taken

Σ = Sign of summation

3.5.2.2 Standard Deviation (S.D) of the Stock Return

Standard deviation measure the dispersion from the mean. In other words, it is the statistical measure of the variability of the distribution of return around its mean. It is the square root of the variance and measures the risk on the stock investment.

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum(R_A - \bar{R}_A)^2}{n-1}}$$

Where,

R_A = Rate of return of individual asset

$\bar{R}_A$ = Expected Return of Asset 'A'

σ = Standard deviation or risk

n = no. of years

3.5.2.3 Coefficient of Variation (C.V)

It is applicable to calculate the risk per unit of the expected return. "It is the ratio of standard of returns to the mean of that distribution. It is the measure of

reliable risk". (Van Horne and Wachowicz, 1995: 94). The CV is a measure of relative dispersion that is useful in comparing the risk of assets with differing expected return. The higher the coefficient of variation the greater the risk, which is expressed as follows.

$$CV_j = \frac{\sigma_j}{\overline{R}_j} \times 100$$

Where,

CV_j = Coefficient of variation of stock j.

σj = Standard deviation of return on stock j.

$\overline{R}_j$ = Average rate of return of stock j.

3.5.2.4 Correlation Coefficient

Correlation coefficient defines the degree of relationship between two assets whether they are going in same direction or opposite direction. It always ranges from +1 to -1. It can be calculated by using following formula.

Correlation between Assets A & B (r_{AB}) = $\frac{COV_{AB}}{\delta_A \delta_B}$

Where,

δ_A = Risk on Asset 'A'

δ_B = Risk on Asset 'B'

COV_{AB} = Covariance between Assets 'A' and Assets 'B'

- If r_{AB}= +1, Correlation between two assets is perfectly positive in this condition a single unit of risk cannot be minimized.
- If r_{AB}= -1, Correlation between two assets is perfectly Negative in this condition all the risk can be minimized.
- If r_{AB}= 0, There is no correlation between two assets in this condition a little bit of risk can be minimized.

3.5.2.5 Covariance

It defines the combined risk or accumulated risk between two assets. Covariance and correlation are closely related, covariance between two assets can be calculated by using following formula.

Covariance between Assets 'A' and Assets 'B'

$$(\mathrm{COV_{AB}}) = \frac{\sum[(R_A - \bar{\mathrm{R}}_{\mathrm{A}})\,(R_B - \bar{\mathrm{R}}_{\mathrm{B}})]}{n-1}$$

Where,

$\mathrm{R_A}$ = Rate of return of individual asset 'A'

$\bar{\mathrm{R}}_{\mathrm{A}}$ = Expected Return of Asset 'A'

$\mathrm{R_B}$ = Rate of return of individual asset 'B'

$\bar{\mathrm{R}}_{\mathrm{B}}$ = Expected Return of Asset 'B'

3.6 Methods of Analysis and Presentation

Methods of analysis are applied as simple as possible. Results are presented in tabular form and clear interpretation on it is given simultaneously. Detail calculations, which can not be shown in the body part of the report, are presented as annexes at the end of the report. To make report simpler and easily understandable; charts, bar diagrams and charts have been used. Summary, findings and recommendations are presented finally.

CHAPTER – IV

PRESENTATION AND ANALYSIS OF DATA

To find the answer of research problem, the collected data are necessary to present and analyze by processing. This chapter will present the data on table & figure.The main objective of the study is to present data and analyze them with the help of various financial and statistical tools.

4.1 NEPSE Index Movement

Index is one of the most important indicators of secondary market which is considered as mirror of country's economic tend. NEPSE index group consists of various indices and they are calculated on the basis of market capitalization. Out of them overall NEPSE index is the oldest one which is being calculated from the initial days of NEPSE. Similarly the other indices are sensitive index, group wise index and Float index. NEPSE Index is calculated by considering all listed share including that of promoter share of all listed companies at NEPSE.

Table : 4.1

NEPSE Index Movement

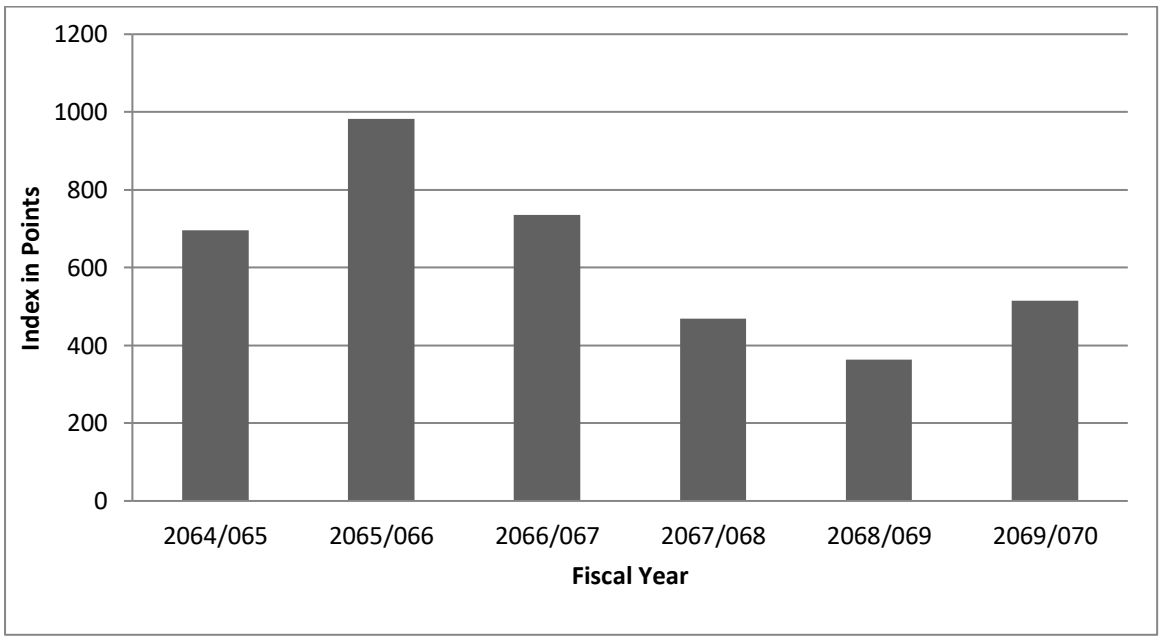
Fiscal Year	Index (In Point)
2064/065	696.58
2065/066	982.12
2066/067	735.87
2067/068	468.53
2068/069	362.85
2069/070	514.77

Source: Annual Report of NEPSE From 2064 to 2069 (www.nepse.com)

Above table shows that the NEPSE Index is in increasing trend at the beginning of the study period, it has highly increase in the fiscal year 2065/066 after that it is decreasing trend and NEPSE index falls less than 500 point in the fiscal year 2068/069. The highest index is 982.12 points in the fiscal year 2065/066 and that of lowest is 362.85 in the fiscal year 2068/069. The trend of NEPSE index is shows in the following figure.

Figure: 4.1

Graph of NEPSE Index Movement



4.2 Analysis of Commercial Baking Industry Index Movement

Commercial Banking Index is a sub index of NEPSE, which is calculated based on only Banking sector, the number of listed commercial bank operating in Nepal increase to 31, mid April 2013. The study take sample five commercial bank for analyze. Banking Index represent the banking sector, it is the mirror of Banking sector Development and growth.

Table : 4.2

Commercial Baking Industry Index Movement

Fiscal Year	Commercial Banking Index (In Point)	Annual Return (R) From Banking Industry (In %)
2064/065	804.26	-
2065/066	1098.5	36.585
2066/067	864.48	-21.30
2067/068	541.87	-37.31
2068/069	412.70	-23.83
2069/070	690.69	67.36
Expected Return ($\bar{R}$)		4.30
Risk (δ)		45.27
Coefficient of Variation (CV)		10.54

Source: Annual Report of NEPSE From 2064 to 2069 (www.nepse.com) & Appendix I

Figure: 4.2

Graph of Commercial Baking Industry Index Movement

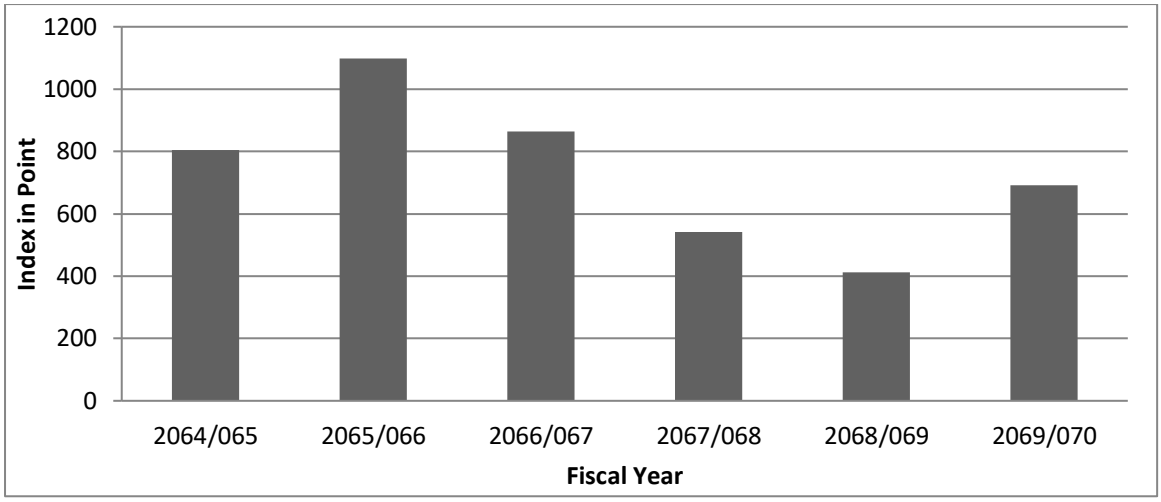


Table 4.2 & Figure 4.2 show the Industry Movement or Commercial Banking Index Movement in several years, it can be seen that there is fluctuation at Index from 2063/064 2068/069. There is maximum Index touch at point 1098.5 in the fiscal year 2065/066. While NEPSE Index at Boom point then after NEPSE Index falls downward that affected all sub-Index and current stock market situations is very critical, NEPSE Index is struggled at 514.77 point and Banking Index is struggled at 690.69 point at the end of the fiscal year 2069/070.

Table 4.2 shows that The Expected rate of return of banking sector is 4.30% with the Standard deviation of 45.27% and coefficient of variation of banking index is 10.54. This denotes that to get per unit return 10.54 risk must be bearded.

Figure : 4.3

Annual Realized Rate at Return from Banking Index

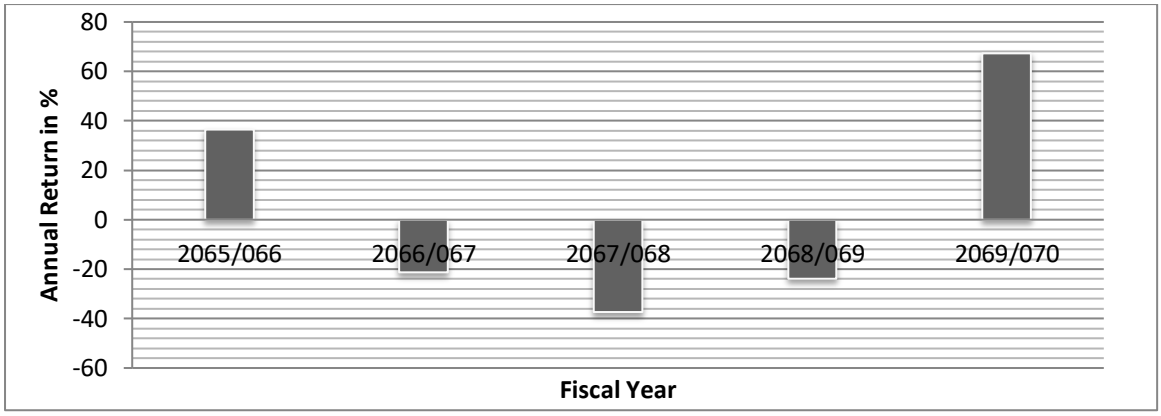


Figure 4.3 shows that annual Realized Rate of Return of commercial Banking Sector, the annual return of Banking Sector is in the fiscal year 2065/0656 i.e. 36.58% which shows that in this year investor are Received profit from Commercial Banking Sector's Common stock but after the fiscal year 2065/066 the annual rate of return of Banking Sector is Negative. The high negative return is 37.31% in the fiscal year 2067/068. In these year investor bear lose from banking investment but in the fiscal year 2069/070 the banking sector return is 67.36%.

4.3 Analysis of Major Financial Indicator, Stock Price & Risk and Return of Sample Bank

4.3.1 Everest Bank Limited (EBL)

Table: 4.3

Analysis of Major Financial Indicator of EBL

FY	MVPS	Cash Dividend (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	Annual Return (%)	EPS (Rs.)	P/E Ratio (Times)
065/66	2455	30	30	519	-0.0504	99.99	24.55
066/67	1630	30	30	358	-0.1902	100.16	16.27

067/68	1094	50	10	153	-0.2350	83.19	13.15
068/69	1033	-	30	477	0.3803	88.55	11.67
069/70	1591	50	10	255	0.7870	91.88	17.23

Source: Annual Report of EBL from 2063 to 2068 & Appendix II & III

Above table 4.3 shows that the EBL is paying cash dividend and stock dividend in each fiscal year except the fiscal year 2068/069 the cash dividend is in increasing trend and the stock dividend is fluctuating. The highest cash dividend is paid in the year 2069/070 i.e. Rs. 50 per share. The P/E Ratio of EBL is maximum in the year 2065/066 and minimum in the year 2068/069 i. e. 24.55 times and 11.67 times respectively similarly the earning per share is fluctuating each year it is highest in the fiscal year 2066/067 i.e. Rs. 100.16 and that of lowest is Rs. 83.19 in the fiscal year 2067/068.

Figure: 4.4

Graph of MVPS of EBL

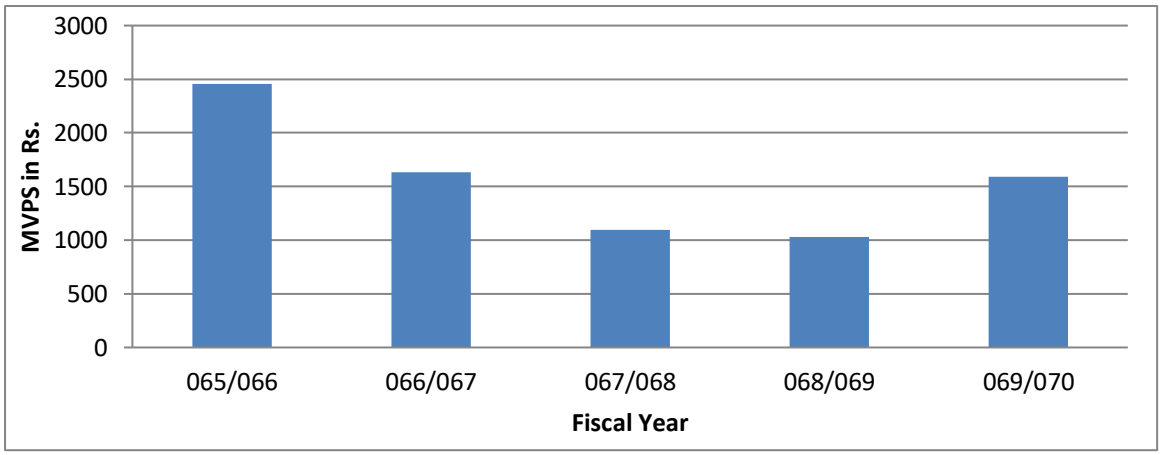


Figure 4.4 shows the trend line of Closing market price of EBL, the closing MVPS of EBL is highest in the year 2065/066 i.e. Rs. 2455 and minimum in the fiscal year 2068/069 i.e Rs. 1033 and the market price of EBL is decreases from the fiscal year 2065/066 to 2068/069 but in the fiscal year 2069/070 the market price is increases from Rs. 1033 to Rs. 1591.

Figure: 4.5

Graph of Annual Return on Stock of EBL

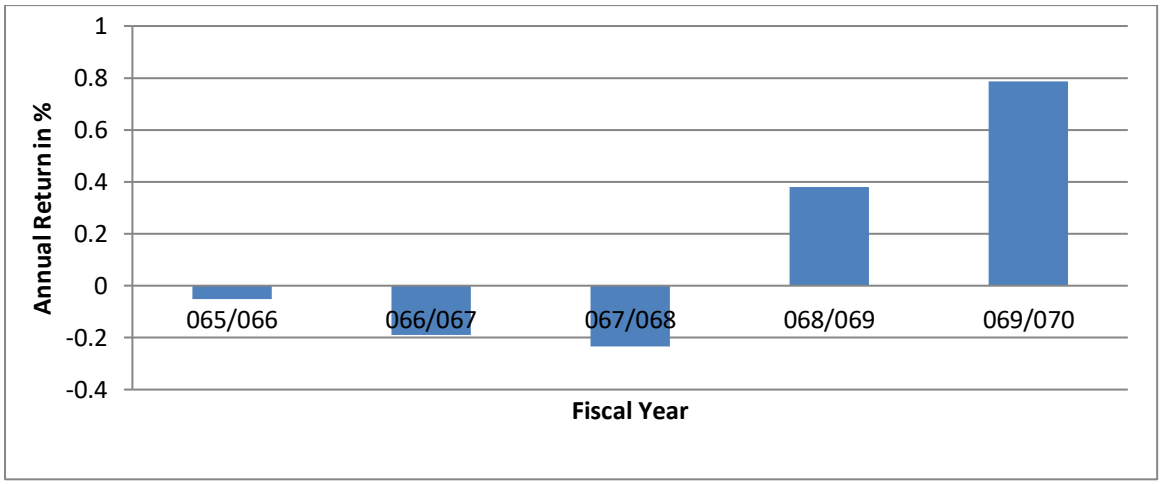


Figure 4.5 shows the annual return on stock of EBL over the study period. The annual return on stock of EBL is negative from the fiscal year 2065/066 to 2067/068 the highest negative return is 0.2350 in the fiscal year 2067/068 and that of lowest is 0.0504 in the fiscal year 2065/066. However, in the fiscal year 2068/069 and 2069/070 the return on stock is 0.3803 & 0.7870. The annual return shows the investor's annual return who invested in the common stock of EBL. From the analysis it is conclude that the negative return bay be the cause of heavy fall in share price of company stock.

Table: 4.4

Summary of Risk and Return Indicators of EBL

Variables	Value
Expected Return ($\bar{R}_{EBL}$)	0.1383
Risk (δ_{EBL})	0.4365
Variance $(\delta_{EBL})^2$	0.1905
Coefficient of Variation (CV)	3.1562
Covariance between Return of Banking Industry & Return of EBL ($COV_{EBL\,\&\,BI}$)	0.1299
Correlation between Return of EBL & Return of Banking Industry ($r_{EBL\,\&\,BI}$)	0.6574
Beta Coefficient (β_{EBL})	0.6339
Systematic Risk (SR)	0.2870
Unsystematic Risk (USR)	0.1495
Proportion of Systematic Risk in Total Risk	65.75%
Proportion of Unsystematic Risk in Total Risk	34.25%

Source: Appendix III

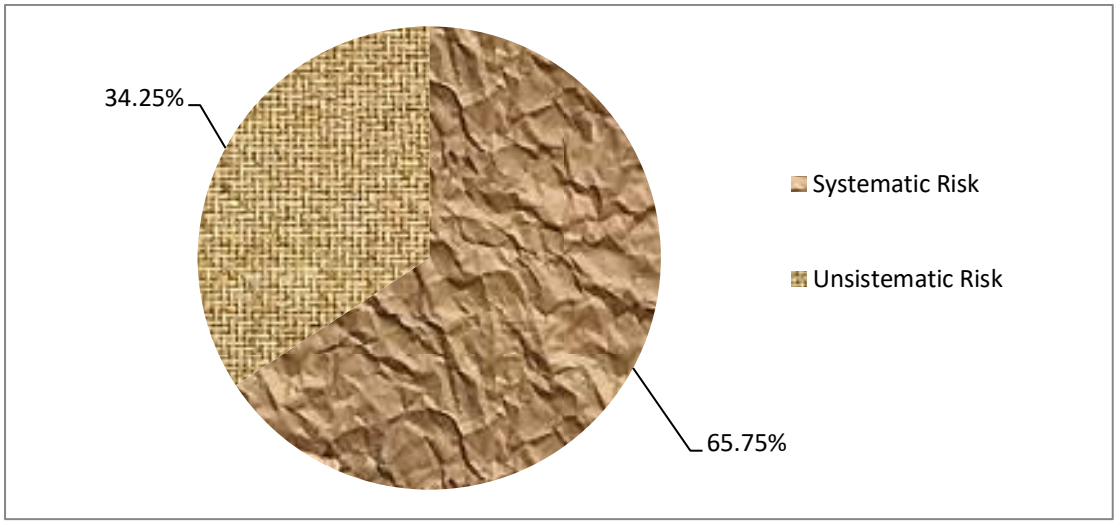
Above table 4.4 shows, the expected rate of return of EBL is positive of 0.1383 with the standard deviation of 0.4365 and coefficient of variation of EBL is 3.1562 this denotes that to get per unit return 3.1562 unit of risk must be beared.

According to table, beta coefficient of EBL is found 0.6339 that is lower than one (1) therefore, this is a defensive asset. That means stock of EBL is less volatile than the industry. Beta is an indicator of systematic risk and that is found to be lower than one (1). So, this is defensive type of assets and found to be less risky. Correlation coefficient between industry and EBL is 0.6574, which is positive this shows the positive relation between industry and EBL's

stock. EBL has 0.2870 systematic risk from the total risk and 0.1495 unit unsystematic risks.

Figure: 4.6

Proportion of Systematic Risk & Unsystematic Risk of EBL



According to figure 4.6, EBL has 65.75% systematic risk which can not be diversifiable and 34.25% unsystematic risk which can be diversifiable. The systematic risk is very high in the company so it may be harmful to the company.

4.3.2 NABIL Bank Limited (NABIL)

Table: 4.5

Analysis of Major Financial Indicator of NABIL

FY	MVPS	Cash Dividend (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	Annual Return (%)	EPS (Rs.)	P/E Ratio (Times)
065/66	4899	35	50	1227	-0.2629	113.44	43.19
066/67	2384	30	40	531	-0.2521	83.81	28.45

067/68	1252	30	0	30	0.1062	70.67	17.72
068/69	1355	40	20	403	0.6369	83.23	16.21
069/70	1815	40	25	518	0.3377	95.14	19.08

Source: Annual Report of NABIL from 2063 to 2068 & Appendix VI & VII

Above table 4.5 shows that the NABIL is paying cash dividend and stock dividend in each fiscal year the cash dividend is Rs. 35 in the fiscal year 2065/066 and decrease to Rs. 30 in the fiscal year 2067/068 after that it is increase to Rs. 40. The P/E Ratio of NABIL is maximum in the year 2065/066 and minimum in the year 2068/069 i.e. 43.19 times and 16.21 times respectively and the earning per share is highest in the fiscal year 2065/066 i.e. Rs. 113.44 and that of lowest is Rs. 60.67 in the fiscal year 2067/068.

Figure: 4.7

Graph of MVPS of NABIL

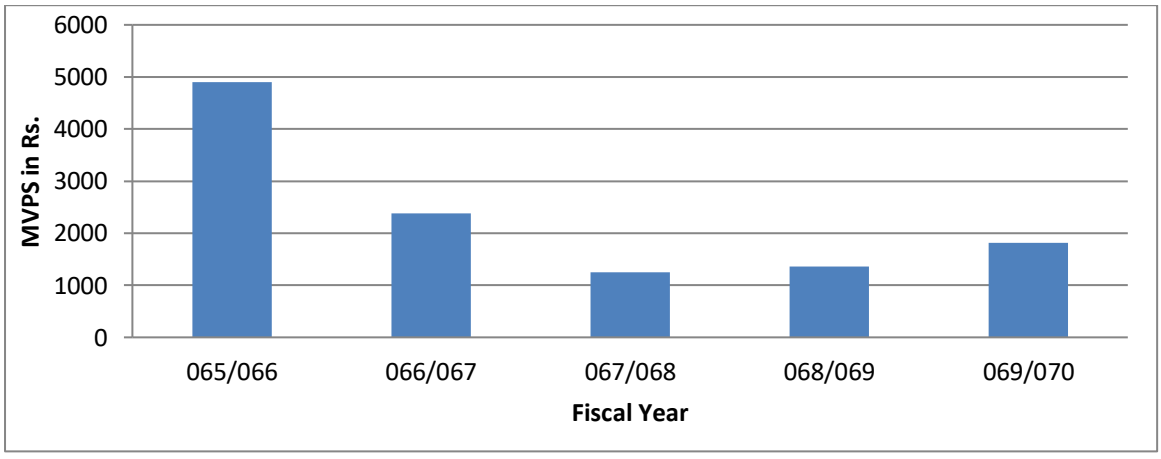


Figure 4.7 shows the trend line of Closing market price of NABIL, the closing MVPS of NABIL is highest in the year 2065/066 i.e. Rs. 4899 and minimum in the fiscal year 2067/068 i.e Rs. 1252 and the market price of NABIL is decreases from the fiscal year 2065/066 to 2067/068 after that it is increases to Rs. 1355 & Rs. 1815 in the fiscal year 2068/069 & 2069/070 respectively.

Figure: 4.8

Graph of Annual Return on Stock of NABIL

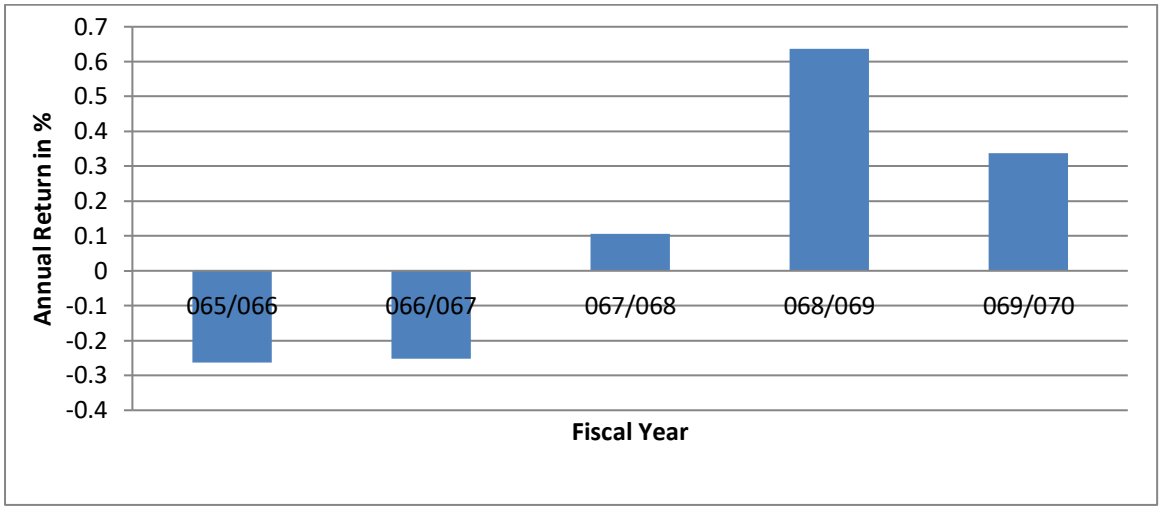


Figure 4.8 shows the annual return on stock of NABIL over the study period. The annual return on stock of NABIL is negative from the fiscal year 2065/066 to 2066/067 the highest negative return is 0.2629 in the fiscal year 2065/066 and that of lowest is 0.2521 in the fiscal year 2066/067. However, in the fiscal year 2067/068, 2068/069 & 2069/070 the return on stock is 0.1062, 0.6360 & 0.33377 respectively. The annual return shows the investor's annual return who invested in the common stock of NABIL. From the analysis it is conclude that the negative return bay be the cause of heavy fall in share price of company stock.

Table: 4.6

Summary of Risk and Return Indicators of NABIL

Variables	Value
Expected Return ($\bar{R}_{NABIL}$)	0.1132
Risk (δ_{SCBNL})	0.3872
Variance $(\delta_{NABIL})^2$	0.1499

Coefficient of Variation (CV)	3.4205
Covariance between Return of Banking Industry & Return of NABIL ($COV_{NABIL\,\&\,BI}$)	0.0077
Correlation between Return of NABIL & Return of Banking Industry ($r_{NABIL\,\&\,BI}$)	0.0439
Beta Coefficient (β_{NABIL})	0.0376
Systematic Risk (SR)	0.017
Unsystematic Risk (USR)	0.3702
Proportion of Systematic Risk in Total Risk	4.39%
Proportion of Unsystematic Risk in Total Risk	95.61%

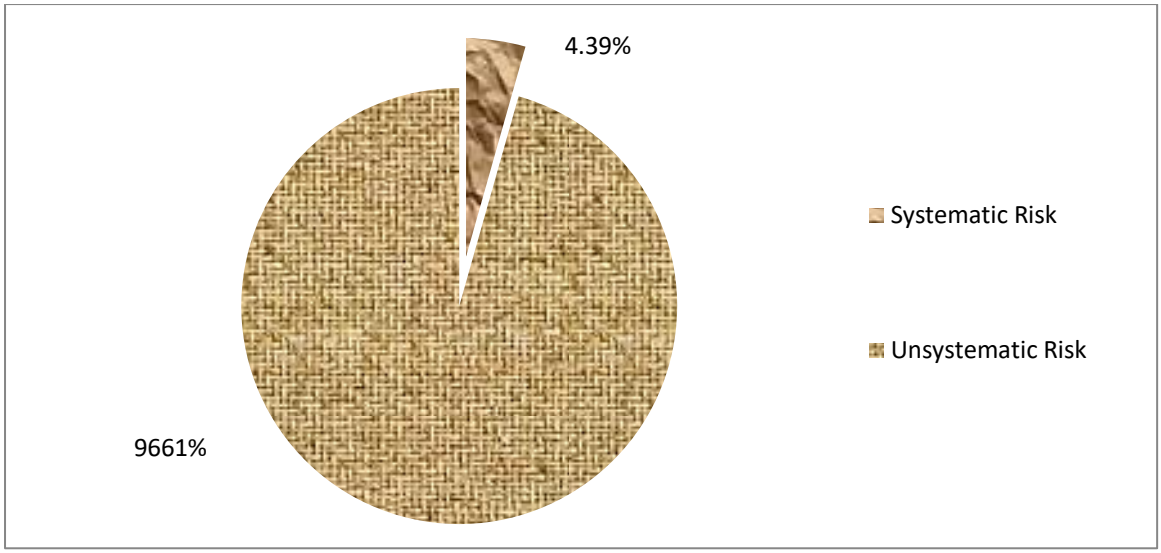
Source: Appendix VII

Above table 4.6 shows the expected rate of return of NABIL is positive of 0.1132 with the standard deviation of 0.3872 and coefficient of variation of NABIL is 3.4205. This denotes that to get per unit return 3.4205 unit of risk must be beared.

According to table, beta coefficient of NABIL is found 0.0376 that is lower than one (1) therefore, this is a defensive asset. That means stock of NABIL is less volatile than the industry. So, this is defensive type of assets and found to be less risky. Correlation coefficient between industry and NABIL is 0.0439, which is positive this shows the positive relation between industry and EBL's stock. EBL has 0.017 systematic risk from the total risk and 0.3702 unit unsystematic risks.

Figure: 4.9

Proportion of Systematic Risk & Unsystematic Risk of NABIL



According to figure 4.9, NABIL has 4.39% systematic risk which can not be diversifiable and 95.61% unsystematic risk which can be diversifiable. The unsystematic risk is very high in the company so it may be harmful to the company the management could try to minimize it.

4.3.3 Bank of Kathmandu Limited (BOK)

Table: 4.7

Analysis of Major Financial Indicator of BOK

FY	MVPS	Cash Dividend (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	Annual Return (%)	EPS (Rs.)	P/E Ratio (Times)
065/66	1825	7.37	40	343	-0.0774	54.68	33.37
066/67	840	15	15	101	-0.4844	43.08	19.50
067/68	570	16.75	18	130	-0.1667	44.51	12.81
068/69	628	21.23	5	49	0.1877	37.88	16.58

069/70	553	0.74	14	80	0.0080	36.64	15.09

Source: Annual Report of BOK from 2064 to 2069 & Appendix IV & V

Above table 4.7 shows that the BOK is paying cash dividend in each fiscal year the cash dividend is increases up to the fiscal year 2068/069 after that it is decrease to Rs. 0.74. The highest cash dividend is paid Rs. 21.23 in the fiscal year 2068/069 and that of lowest is Rs. 0.74 in the fiscal year 2069/070. The P/E Ratio of BOK is maximum in the fiscal year 2065/066 and minimum in the fiscal year 2067/068 i.e. 33.37 times and 12.81 times respectively and the earning per share is highest in the fiscal year 2065/066 i.e. Rs. 54.68 and that of lowest is Rs. 36.64 in the fiscal year 2069/070

Figure: 4.10

Graph of MVPS of BOK

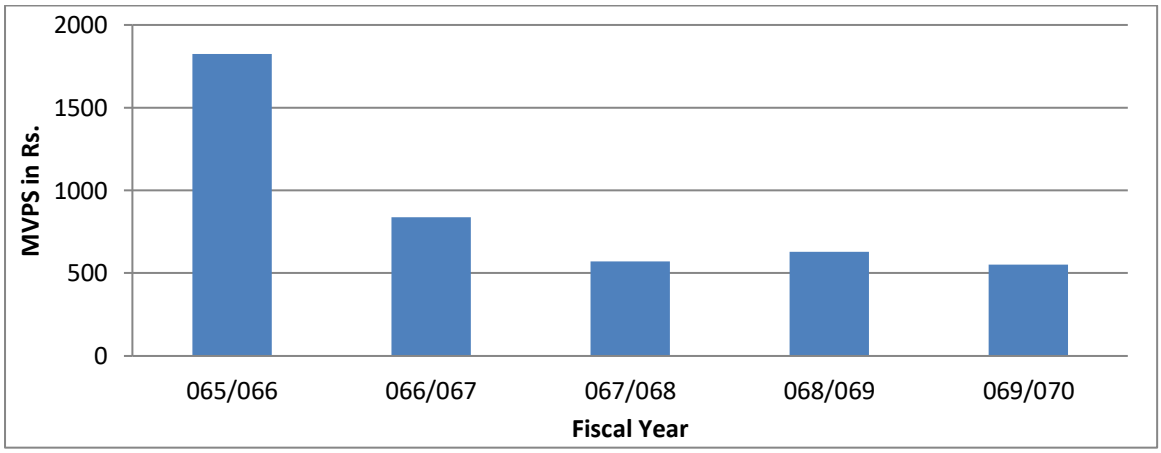


Figure 4.10 shows the trend line of Closing market price of BOK, the closing MVPS of BOK is highest in the year 2065/066 i.e. Rs. 1825 and minimum in the fiscal year 2069/070 i.e Rs. 553 and the market price of BOK is decreases from the fiscal year 2065/066 to 2067/068 but in the fiscal year 2068/069 the MVPS of BOK is increase to Rs. 628.

Figure: 4.11

Graph of Annual Return on Stock of BOK

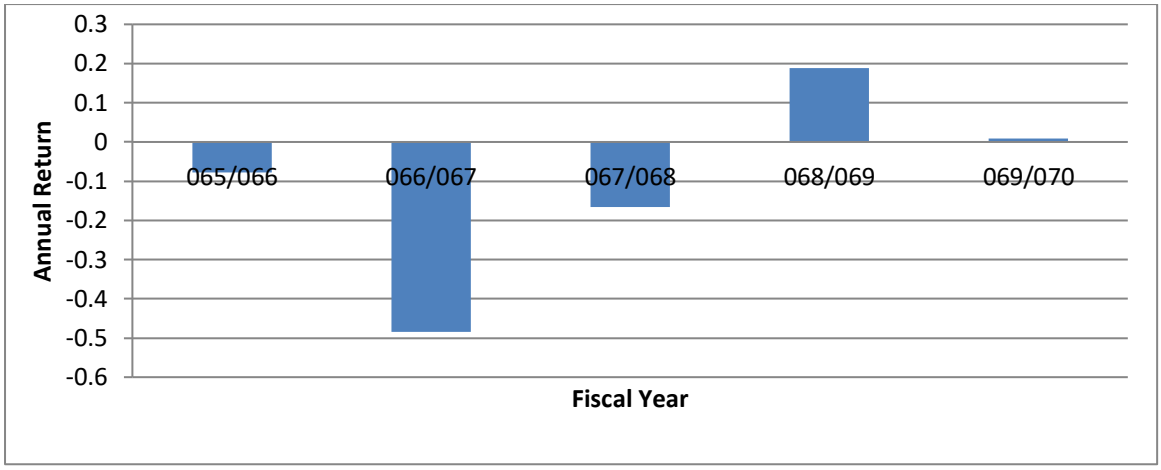


Figure 4.11 shows the annual return on stock of BOK over the study period. The annual return on stock of BOK is negative from the fiscal year 2065/066 to 2067/068 the highest negative return is 0.4844 in the fiscal year 2066/067 and that of lowest is 0.0774 in the fiscal year 2065/066. However, in the fiscal year 2068/069 & 2069/070 the return on stock is 0.1877 & 0.0080 respectively. The annual return shows the investor's annual return who invested in the common stock of BOK. From the analysis it is conclude that the negative return bay be the cause of heavy fall in share price of company stock.

Table: 4.8

Summary of Risk and Return Indicators of BOK

Variables	Value
Expected Return ($\bar{R}_{BOK}$)	-0.1066

Risk (δ_{BOK})	0.2484
Variance $(\delta_{BOK})^2$	0.0617
Coefficient of Variation (CV)	2.3302
Covariance between Return of Banking Industry & Return of BOK ($COV_{BOK\ \&\ BI}$)	0.0301
Correlation between Return of BOK & Return of Banking Industry ($r_{BOK\ \&\ BI}$)	0.2677
Beta Coefficient (β_{BOK})	0.1469
Systematic Risk (SR)	0.0665
Unsystematic Risk (USR)	0.1819
Proportion of Systematic Risk in Total Risk	26.77%
Proportion of Unsystematic Risk in Total Risk	73.23%

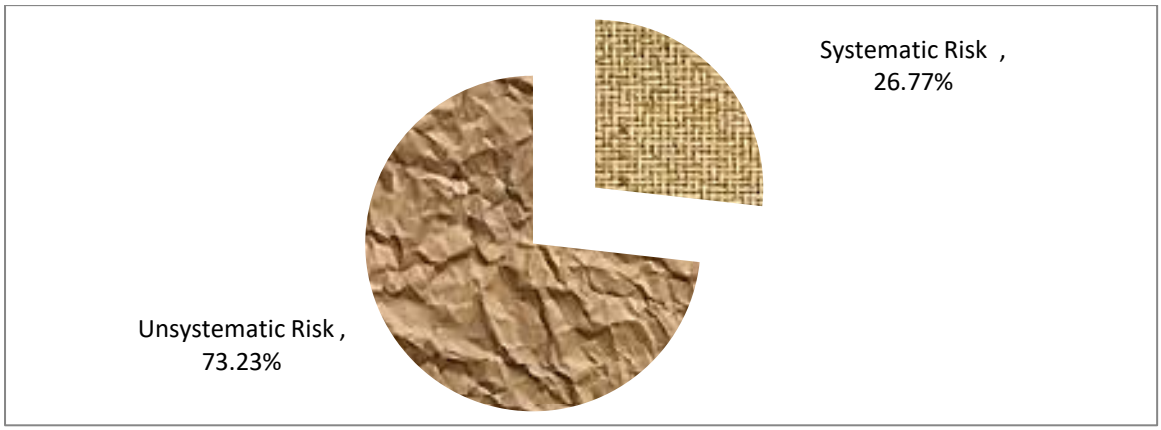
Source: Appendix V

Above table 4.8 shows, the expected rate of return of BOK is negative of 0.1066 with the standard deviation of 0.2484 and coefficient of variation of BOK is 2.3302. This denotes that to get per unit return 2.3302 unit of risk must be beared.

According to table, beta coefficient of BOK is found 0.1469 that is lower than one (1) therefore, this is a defensive asset. That means stock of BOK is less volatile than the industry. So, this is defensive type of assets and found to be less risky. Correlation coefficient between industry and BOK is 0.2677, which is positive this shows the positive relation between industry and BOK's stock. BOK has 0.0665 systematic risks from the total risk and 0.1819 unit unsystematic risks.

Figure: 4.12

Proportion of Systematic Risk & Unsystematic Risk of BOK



According to figure 4.12, BOK has 26.77% systematic risk which can not be diversifiable and 73.23% unsystematic risk which can be diversifiable. The unsystematic risk is high in the company so the management of the company focuses to reduce the risk.

4.3.4 Nepal SBI Bank Limited (SBI)

Table: 4.9

Analysis of Major Financial Indicator of SBI

FY	MVPS	Cash Dividend (Rs.)	Stock Dividend (%)	Total Dividend (Rs.)	Annual Return (%)	EPS (Rs.)	P/E Ratio (Times)
065/66	1900	2.11	40	299	0.4553	36.18	52.52
066/67	741	5	12.50	76	-0.5700	23.69	31.28
067/68	565	5	12.50	84	-0.1242	24.85	22.73
068/69	635	5	12.50	111	0.3204	22.93	27.69
069/70	850	7.50	12.50	131	0.5449	32.75	25.95

Source: Annual Report of SBI from 2064 to 2069 & Appendix VIII & IX

Above table 4.9 shows that the SBI is paying cash dividend and stock dividend in each fiscal year during the study period the cash dividend is Rs. 2.11 in the fiscal year 2065/066 after that the cash dividend is constant at Rs.5 and stock dividend is constant at 7.50% up to the fiscal year 2068/069 and in the fiscal year 2068/069 the cash dividend is increase to Rs. 7.50. The P/E Ratio of SBI is maximum in the year 2065/066 and minimum in the year 2067/068 i.e. 52.52 times and 22.73 times respectively and the earning per share is highest in the fiscal year 2065/066 i.e. Rs. 36.18 and that of lowest is Rs. 22.93 in the fiscal year 2068/069.

Figure: 4.13

Graph of MVPS of SBI

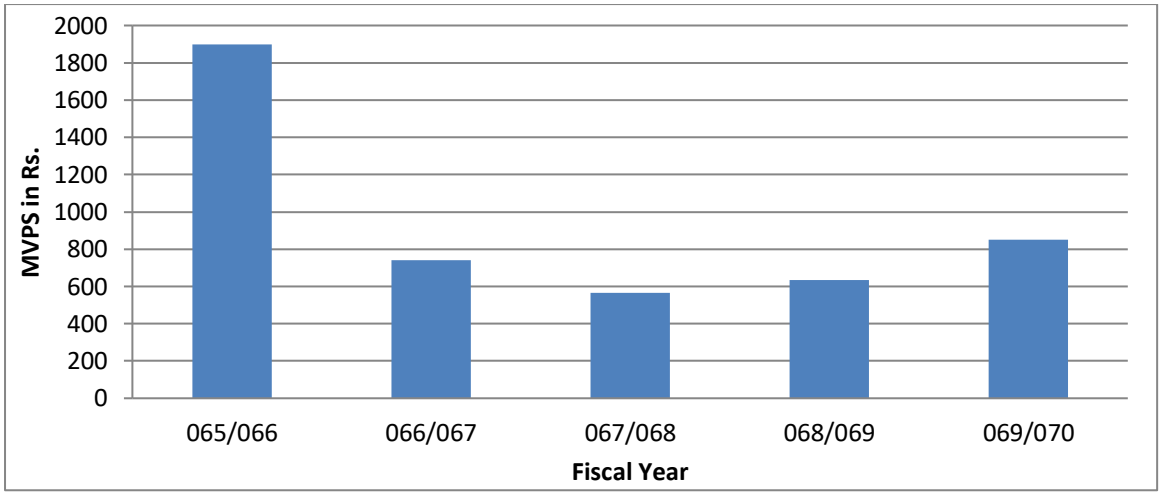


Figure 4.13 shows the trend line of Closing market price of SBI, the closing MVPS of SBI is highest in the year 2065/066 i.e. Rs. 1900 and minimum in the fiscal year 2067/068 i.e Rs. 565 and the market price of SBI is decreases from the fiscal year 2065/066 to 2067/068 but in the fiscal year 2068/069 & 2069/070 the MVPS of SBI is increase to Rs. 635 & Rs. 850 respectively.

Figure: 4.14

Graph of Annual Return on Stock of SBI

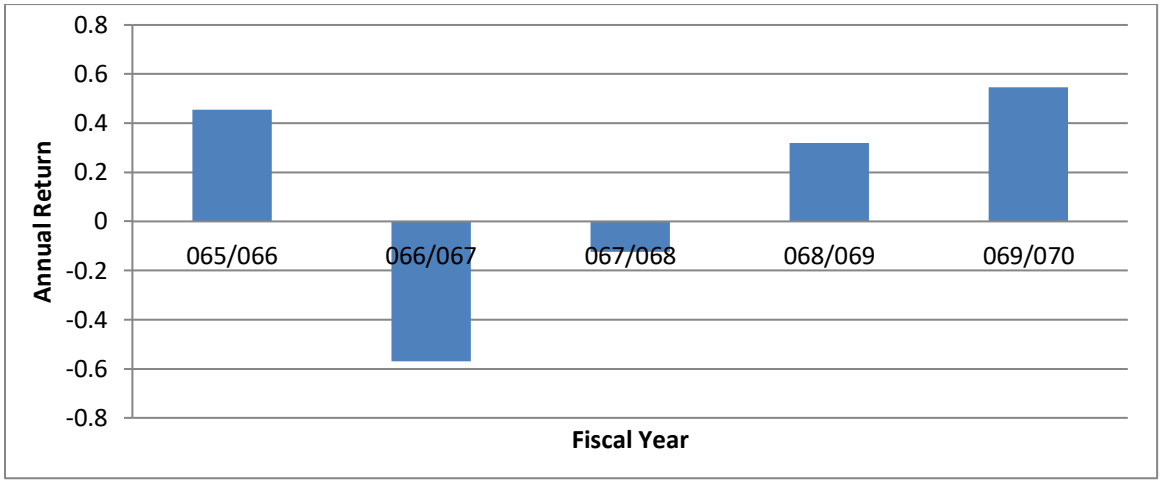


Figure 14 shows the annual return on stock of SBI over the study period. The annual return on stock of SBI is 0.4553 in the fiscal year 2065/066 after that the return is negative from the fiscal year 2066/067 to 2067/068. However, in the fiscal year 2068/069 & 2069/070 the return on stock is 0.3204 & 0.5449 respectively. From the analysis it is conclude that the negative return bay be the cause of heavy fall in share price of company stock

Table: 4.10

Summary of Risk and Return Indicators of SBI

Variables	Value
Expected Return ($\bar{R}_{SBI}$)	0.1253
Risk (δ_{SBI})	0.466
Variance $(\delta_{SBI})^2$	0.2172
Coefficient of Variation (CV)	3.7197
Covariance between Return of Banking Industry & Return of SBI ($COV_{SBI\ \&\ BI}$)	0.1495
Correlation between Return of SBI & Return of Banking Industry ($r_{SBI\ \&\ BI}$)	0.7087
Beta Coefficient (β_{SBI})	0.7295
Systematic Risk (SR)	0.3303

Unsystematic Risk (USR)	0.1357
Proportion of Systematic Risk in Total Risk	70.88%
Proportion of Unsystematic Risk in Total Risk	29.12%

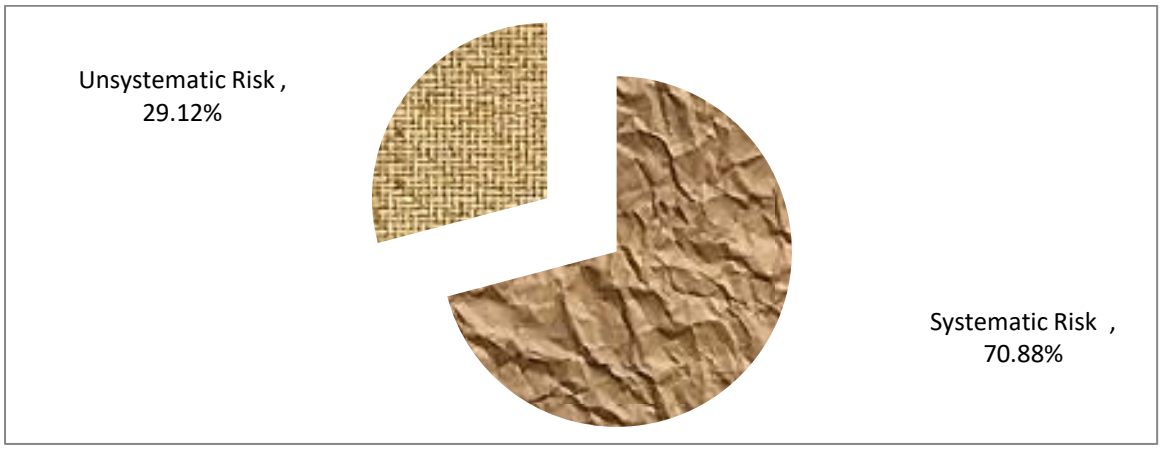
Source: Appendix IX

Above table 4.10 shows, the expected rate of return of SBI is 0.1253 with the standard deviation of 0.466 and coefficient of variation of SBI is 3.7197. This denotes that to get per unit return 3.7197 unit of risk must be beared.

According to table, beta coefficient of SBI is found 0.7295 that is lower than one (1) therefore, this is a defensive asset. That means stock of SBI is less volatile than the industry. So, this is defensive type of assets and found to be less risky. Correlation coefficient between industry and SBI is 0.7087, which is positive this shows the positive relation between industry and SBI's stock. SBI has 0.3303 systematic risks from the total risk and 0.1357 unit unsystematic risks.

Figure: 4.15

Proportion of Systematic Risk & Unsystematic Risk of SBI



According to figure 4.15, SBI has 70.88% systematic risk which can not be diversifiable and 29.12% unsystematic risk which can be diversifiable. The

systematic risk is very high in the company so it may be harmful to the company.

4.4 Analysis of Common Stock's Price

Comparison of required rate of return and expected rate of return gives that result whether the common stock in under priced or overpriced. Generally for the price evaluation, the calculation of required rate of return is necessary and it can be calculated by using the following formula,

Required rate of return (R) = $R_f + (\overline{R}_{BI} - R_f)\ \beta$

Where,

R_f = Risk free rate of return i.e. 3.4%

$\overline{R}_{BI}$ = Average return of commercial banking sector for the study Period i.e. 0.0430

β = Beta coefficient of each bank

In the above equation, the risk free rate of return (R_f) is needed to determine required ratef of return. The discount rate of Treasury bill (T-bill) issued by Nepal Ratra Bank is taken as risk free rate (R). In Nepal, NRB issued two types of T-bill i.e. 91 days and 365 days but according to the suggestion of T-bill section of NRB. It is better to take 91 days's weighted average discount rate as risk free rate. T-bill rate will be differs in various issues but in the study it is taken weighted average discount rate of 91 days T-bill of mid July (2013) fiscal year (2012/13). As provided by the T-bill section T-bill rate for fiscal year 2012/013 is 3.49%.

Table: 4.11

Analysis of Common Stock's Price Based on Required Rate of Return and Eexpected Rate of Return

Bank	Beta	Required Rate of Return	Expected Rate of Return	Price Evaluation
EBL	0.6339	0.0397	0.1383	Underpriced
NABIL	0.0376	0.0343	0.1132	Underpriced
BOK	0.1469	0.0353	-0.1066	Overpriced
SBI	0.7295	0.0406	0.1253	Underpriced

Source: Appendix X

From the above table 4.11 it is observed that the pricing of common stock of all sampled banks under study are under priced except the BOK. The common stocks of all sample banks are underpriced. In this situation the investors can gain from purchases the underpriced stocks. It is recommended to purchase under priced stock but rational and efficient investment decision-maker need to analyze other dimensions as well as invest from the investment point of view.

4.6 Hypothesis Test

Null hypothesis (H_0); $\square_1 = \square_2 = \square_3 = \square_4$ i.e. There is no significant difference between the annual return of different sample banks.

Alternative Hypothesis (H_1); $\square_1 \neq \square_2 \neq \square_3 \neq \square_4$ i.e. there is significant difference between the annual return of different sample banks.

Table: 4.13

One Way ANOVA Table

Source of Variation	Sum of Square	Degree of Freedom	Mean Sum of Square	F- ratio
Between Samples	0.0901	4 – 1 = 3,	$\frac{0.0901}{3}$ = 0.0300	$\frac{0.03}{0.1676}$ = 0.1790
Within Samples	2.6823	16	$\frac{2.6823}{16}$ = 0.1676	
Total	**-0.4275**	**20 – 4 = 16**		

Source: Appendix XIV & XV

Table: 4.14

Summary of Hypothesis Test

Variables	Degree of Freedom	Level of Significance	Calculated 'F' Value	Tabulated 'F' Value	Result
Annual Return	3, 16	5%	0.1790	3.24	H_0 Accepted

Source: Appendix XIV & XV

Table 4.13 & 4.14 shows the testing of hypothesis of annual return of sample banks from the analysis it is found that the calculated 'F' value is less than the tabulated value i.e. 0.1790 < 3.24 therefore the null hypothesis is accepted and alternative hypothesis is rejected it means there is no significant difference between the annual return of different sample banks.

4.7 Major Findings

- NEPSE index falls less than 500 point in the fiscal year 2068/069. The highest index is 982.12 points in the fiscal year 2065/066 and that of lowest is 362.85 in the fiscal year 2068/069.
- The banking sector index touch at point 1098.5 in the fiscal year 2065/066. NEPSE Index is struggled at 514.77 point and Banking Index is struggled at 690.69 point at the end of the fiscal year 2069/070.

- The Expected rate of return of banking sector is 4.30% with the Standard deviation of 45.27% and coefficient of variation of banking index is 10.54.
- The expected rate of return of BOK is negative of 0.1066 with the standard deviation of 0.2484 and coefficient of variation of BOK is 2.3302. Similarly, beta coefficient of BOK is found 0.1469, correlation coefficient between industry and BOK is 0.2677 and BOK has 0.0665 systematic risks from the total risk and 0.1819 unit unsystematic risks.
- The expected rate of return of SBI is negative of 0.1253 with the standard deviation of 0.466 and coefficient of variation of SBI is 3.7197. Similarly, correlation coefficient between industry and SBI is 0.7087 and SBI has 0.3303 systematic risks from the total risk and 0.1357 unit unsystematic risks.
- The expected rate of return of EBL is 0.1318 with the standard deviation of 0.4365 and coefficient of variation of EBL is 3.1562. Similarly, beta coefficient of EBL is finding 0.6339, Correlation of coefficient between industry and EBL is 0.6574 and EBL has 0.2870 systematic risks from the total risk and 0.1495 unsystematic risks.
- The expected rate of return of NABIL is 0.1132 with the standard deviation of 0.3872 and coefficient of variation of NABIL is 3.4205. Similarly, beta coefficient of NABIL is found 0.0376, correlation coefficient between industry and NABIL is 0.0439 and NABIL has 0.017 systematic risks from the total risk and 0.3702 unit unsystematic risks.
- The common stocks of all sample banks except BOK are underpriced. In this situation the investors can gain from purchases the underpriced stocks.
- The proportion of systematic risk and unsystematic risk from the total risk is 65.75% & 34.25% of EBL, 4.39% & 95.61% of NABIL, 26.77% & 73.23% of BOK and 70.88% & 29.12% of SBI.

- From the hypothesis test it is found that there is no significant difference between the annual return of different sample banks.

CHAPTER - V

SUMMARY, CONCLUSION & RECOMMENDATIONS

5.1 Summary

The study deals about the share stock price behavior of Nepalese commercial banks. The Nepalese capital market is in the developing phase. Different new technologies are adopted and uses. Central depository system is upcoming technologies in Nepalese market. Different political philosophies and rules and regulations governed by the government used to affect the Nepalese capita market time and again. Nepalese Stock Market is in developing stage. Generally speaking, most of the people citizens are still unaware of stock market. Though share market plays the vital role on mobilization of capital in national economy, in the case of Nepal, it is still crawling towards the betterment. The history of Security Market in Nepal is not old. It was started with the floatation of share by Biratnagar Jute Mills Ltd. and Nepal Bank Ltd. in 1937. Introduction of Company Act in 1964, the first issuance of Government Bond in 1964 and the establishment of Securities Exchange Center Ltd. in 1976 were significant developments of the Capital Market in Nepal.

Investors invest their savings in the Common Stock of public companies through Primary and Secondary Markets. Generally, the investors aimed to maximize their profit from their investment. But due to lack of proper knowledge and poor regulatory performance of Nepalese Capital Market, the investors may not achieve return as expected. Only the few educated city dwellers know what share market is and how they are regulated. Besides, government has not prioritized the development of capital market sufficiently. The emerging trend of Nepalese share market shows that new investors are

being very interested in share investment. But it has been observed that most of the investors are interested to invest their business.

Common stock is the most risky security and life blood of stock market. An investment in common stock of corporate firm neither ensures the rate of return nor ensures the return of principle. Common stock is the residual claimant to the earnings of the company. Common stocks holders receive whatever is left after all the other claimholder have taken their rightful share. Therefore, investment in common stock is very sensitive on the ground of risk.

The study has adopted historical and analytical research design. The data utilized are mostly secondary in nature. Various financial tools are applied to used for analyze and present for the data. Among the 31 commercial banks listed in the NEPSE, four banks are taken as sample for the study. Data of the last five years are used for the study. Market price per share and dividend per share of the banks are used to analyze the share price movement, risk and returns of the banks together with the commercial banking index.

The major objective of this study is to find out the trend of MVPS of common stock of Nepalese commercial banks. Secondary, data are collected from NEPSE, previous studies, NRB publications and publications of selected commercial banks journals, books and Internet. Other types of information are collected through personal visit to the executives and officers of the companies and official of security board of Nepal (SEBON) and NEPSE.

This study divided into five chapters. First chapter is introduction chapter, introduction chapter include background of the study, profile of sample companies, statement of the problem, objectives of the study, focus of the study, significance of the study, limitation of the study and organization of the study. Second chapter is review of literature. This chapter includes conceptual review, review of journal and article, review of related articals and related unpublished thesis. Third chapter is research design. This chapter

include population and sample, sources of data, data collection technique and analysis tools. Fourth chapter is presentation and analysis of data, this chapter shows related table, figure and describes of the study. Fifth and last chapter is summary, conclusion and recommendation and bibliography, annexed presented at the end of the study.

5.2 Conclusion

Nepalese stock market is in emerging stage. Its development is acceleration since the political change in effect of openness and liberalization in National economy. But due to lack of information and poor knowledge, Nepalese individual investor cannot analyze the securities as well as market properly. From the analysis of various financial indicators of all the sample banks, the following conclusion can be found.

Due to the inadequate knowledge of share market among Nepalese investors, capital market of Nepal has not been well developed yet. EPS and DPS are the major influencer of the share price. Besides this, political situation, annual general meeting, assets structure and capital structure of the organization also influence the share price of the company. The commercial banks are the first choice of Nepalese investors but the systematized and managed regulatory system is required for further improvement of share market. The reputed and established commercial banks have very good trend of their financial performance whereas new banks are penetrating their market. Most of the banks are operating in profit in recent years though they suffered some losses during their initial stages. Still, the investors are positive towards the share of these banks.

All the sample banks have positive return except the BOK. BOK has the lowest rate of return i.e. -10.66% and EBL has the highest rate of return i.e. 13.83 percentages. All the sample banks stock is less risky assets. BOK is the best security measuring than others in terms of CV. Stock of SBI is most aggressive

and the stock of NABIL is the most defensive stock than other due to the highest and lowest beta coefficient.

Considering the banking sectors risk and return, expected return of overall banking index is 4.30% which is the lowest than the expected return of all sampled banks. The standard deviation found in banking index is 45.27%, which represent the sensitivity on investment in the banking sectors. The stock of NABIL has more USR i.e. 95.61% that can be diversifiable and SBI bank has lowest USR i.e. 29.12%. Comparing the expected rate of return and equilibrium rate of return there is found common stock of NABIL, EBL & SBI are underpriced and common stock of BOK has overpriced. It is conclude that there is no significance deferent between the annual return of sample banks and the negative annual return BOK may be the cause of continuously decrease in the stock price.

5.3 Recommendation

The finding of this study might be useful for those who are concerned with the investment in common stock of commercial bank directly or indirectly. On the basis of major finding of the study the researcher thinks appropriate to recommend the concerned institutions to individual authorities as well as other in order to consider the following suggestions.

- The investors perceive the increase in EPS as better performance of the organization and hence they increase the demand of share which ultimately causes the increase in share price.

- Expected return recommends that commercial banks common stock are the best option for the investment as they are providing attractive rate of return.

- Among selected four commercial banks, the stocks of all commercial banks except BOK are underpriced so the investor should purchases the stock to make more beneficial.
- Investors who want to have high return should invest in EBL & NABIL because the return on stock of these company is higher and risk is lower than other in comparison to return involved in their securities.
- Investment should be done with clear objective i.e. to make additional money not to cover up losses and better to investigate.
- Stock market is very risky job so investors should know his need, desires, risk taking capabilities, adaptability in the changing market to win the stock market. Good forecasting ability self knowledge and sound understanding on information of stock market can give a winning edge to the investors.
- Before making an investment decision in stock market, analyze your own risk attitude yours needs and requirements make several discussion with stock broker and make your decision on the basis of reliable information rather than rumor and imagination.
- The development of stock market is also dependent on political stability of the nation. So, government should be stable for the development of the stock market.
- In case of the stocks are undervalued and some are overvalued thus investors are recommended to sell the overvalued stocks and to buy the undervalued stock.
- Investors must concern with the portion of systematic risk in the total risk if portion of which is arises form external factors which can not be diversifiable but Unsystematic risk can be diversifiable risk this type risk arises from internal factor.
- It is recommended that for future student they can prepare new thesis based on this study and they can increase sample size and study period for advance result.

• BIBILOGRAPHY

- **Books**

- Alexander, J. G. Sharpe, W. F. & Bailey, J. (2003). *Fundamental of Investment.* (3rd Edition). Singapur: Prentice Hall.
- Bajracharya, S. & Bhattarai, R. (2005). *Corporate Financial Management.* (2nd Edition).
- Bhalla, V. K. (2001). *Investment Management.* (8th Edition). New Delhi: S. Chanda and company.
- Bhandari, D. R. (2003). *Banking and Insurance: Principle and Practice.* Kathmandu: Ayush Publication.
- Bhattrai, R. (2008). *Investment Theory and Practice.* (1st edition). Kathmandu: Buddha Academic Publication.
- Brealey, R. A. & Stewart, M. (1991). *Principles of Corporate Finance.* New Delhi: Tata Publishing House.
- Cheney, J. M. & Mosses, E. A. (1992). *Fundamentals of Investment.* St. Paul: West Publishing Company Limited.
- Cheny. J. M & Mosses, E. A. (1995). *Fundamental of Investment.* St. Paul: West Publication Company.
- Fisher, D. E. & Jordan, R. J. (2000). *Security Analysis and Portfolio Management.* (6th Edition). New Delhi: Hall of India Pvt. Ltd.
- Francis, J. C. (1997). *Investment Analysis and Management.* New York: Mc- Graw Hill Publication.
- Frank, K. R. & Keith, C. B. (2004). *Investment Analysis & Portfolio Management.* (7th Edition). City Thomson south- Western.
- Hampton, J. (1998). *Financial Decision Making.* New Delhi: Prentice Hall of India Pvt. Ltd.
- Kothari, C. R. (1999). *Research Methodology Methods & Techniques.* New Delhi: Vishwa Prakashan.

- Pradhan, S. (1993). *Basic of Financial Management.* Kathmandu: Educational Enterprises.
- Reilly, F. K. & Brown, K. C. (2003). *Investment Analysis & Portfolio Management.* Singapore: Thompson Asia Ptv. Ltd.
- Shrestha, R. (2002). *Investment Analysis.* Kathmandu: Ayush Publication.
- Van Horn, J. C. & Wachowicz, J. (2001). *Fundamental of Financial Management.* New Delhi: Pearson Education Inc.
- Van Horn, J. C. (1997). *Financial Management & Policy.* New Delhi: Prentice Hall of India.
- Weston, J. F. & Brigham, E. F. (1987). *Essentials of Managerial Finance.* Forth Worth: The Dryden Press.
- **Journal & Reports**
- Adhikari, K. (2011), *Stock Investment Behavior in Nepal.* Himalayan Times
- BOK (2008-2012). *Annual Report.* Bank of Kathmandu.
- Dahal, D. (2007). *The Performance of Nepalese IPO.* NEPSE Journal, Vol-6 (I).
- EBL (2008-2012). *Annual Report.* Everest Bank Limited.
- Gurung, K. (2004). *Growth and Performance of Securities Market in Nepal.* NEPSE Journal, Vol-4 (III).
- Manandhar, K. D. (2004). *Capital Market Development in Nepal.* Journal of Management & Development. 1(5): 39.
- NABIL (2008-2012). *Annual Report.* NABIL Bank Limited.
- NEPSE (2006-2012). *Trading Report.* Nepal Stock Exchange.
- Rishi, R. & Dhungana, B. (2002). *Expected Return, Realized Return and Asset Pricing Tests.* Journal of Finance.Volume XIV. P-22

- Robert, R. & Nardin, C. (2009). *Commonality in the Determinants of Expected Stock Returns.* Journal of Corporate Finance. Vol: IX. P-22
- SBI (2008-2012). *Annual Report.* Nepal SBI Bank Limited.
- SEBON (2008-2012). *Annual Report.* Securities Board of Nepal.
- Smith, S. (1996). *The Application of Economic Theory to financial markets.* Journal of Financial Economics. Vol: VI. P-16
- **Theses**
- Baniya, S. (2011). *Share Price Behavior of Commercial* Banks and Effect of *Macroeconomic Variables in Nepalese Stock Market.* Kathmandu: An Unpublished Master Degree Thesis. Faculty of Management. T. U.
- Gurung, P. (2007). *Share Price Behavior of Listed Companies in Nepal.* Kathmandu: An Unpublished Master Degree Thesis. Faculty of Management. T. U.
- Manandhar, T. (2010). A *Study on Risk and Return Analysis on Common Stock of Listed Commercial Bank in Nepal.* Kathmandu: An Unpublished Master Degree Thesis. Faculty of Management. T. U.
- Paudel, N. (2009), *A Study on Share Price Movements of Joint Venture Commercial Banks in Nepal.* Kathmandu: An Unpublished Master Degree Thesis. Faculty of Management. T. U.
-
-
-
-
-
- **Websites**

- Bank of Kathmandu Limited (2011). Retrieved August 1, 2012, from http://www.bok.com.np
- Dell, R. M. (2009). *Investment.* Retrieved August 26, 2012, from http://www.investopedia.com
- Everest Bank Limited (2011). Retrieved August 1, 2012, from http://www.ebl.com.np
- NABIL Bank Limited (2011) Retrieved August 1, 2012, from http://www.nabilbank.com.np
- Nepal Rasstra Bank (2011). Retrieved August 16, 2012, from http://www.nrb.org.np
- Security Board of Nepal (2011). Retrieved August 1, 2012, from http://www.sebon.com

Appendix - I

Commercial Baking Industry Index Movement

Fiscal Year	Commercial Banking Index (In Point)	Annual Return (R_{BI})	R_{BI} - $\bar{R}_{BI}$	$(R_{BI}$ - $\bar{R}_{BI})^2$
2064/065	804.26	-	-	-
2065/066	1098.5	0.3659	0.3229	0.1042
2066/067	864.48	-0.2130	-0.2560	0.0656
2067/068	541.87	-0.3732	-0.4162	0.1732
2068/069	412.7	-0.2384	-0.2814	0.0792
2069/070	690.69	0.4822	0.6306	0.3976
Total		$\sum R_{BI}$= 0.2148	$\sum(R_{BI} - \bar{R}_{BI})^2$ = 0.8198	

Calculation of Annual Return from Banking Index, which is calculated with the use of following formula;

$$R_{BI} = \frac{P_1 - P_0}{P_0} \times 100$$

For the fiscal year, 2065/066,

$$= \frac{1098.5 - 804.26}{804.26} \times 100 = 0.3659 \text{ or, } 36.59\%$$

For the calculation of other fiscal year, same process will be repeated.

Expected Return ($\bar{R}_{BI}$) = $\frac{\sum R_{BI}}{N} = \frac{0.2148}{5}$ = 0.0430 or, 4.30%

Risk (δ_{BI}) = $\sqrt{\frac{\sum(R_{BI} - \bar{R}_{BI})^2}{N-1}} = \sqrt{\frac{0.8198}{5-1}}$ = 0.4527 or, 45.27%

Coefficient of Variation (CV) = $\frac{\delta_{BI}}{\bar{R}_{BI}} = \frac{0.4527}{0.0430}$ = 10.5360

Appendix – II

Calculation of Total Dividend of EBL

Year	MVPS (Rs.)	Cash Dividend (Rs.)	Stock Dividend		Total Dividend (Rs.)
			%	Amount (Rs.)	
2065/066	2455	30	30	489	519
2066/067	1630	30	30	328	358
2067/068	1094	50	10	103	153
2068/069	1033	0	30	477	477
2069/070	1591	50	10	205	255
2070/071	2049				

Stock Dividend (In Rs.) = $\frac{Next\ Year\ MVPS \times Current\ Year\ Stock\ Dividend\ In\ \%}{100}$

For the fiscal year 2065/066,

$$\frac{1630 \times 30}{100} = \text{Rs. } 489$$

Same process will be repeated for the calculation of other year stock dividend.

Appendix III

Calculation of Annual Return, Expected Return, Risk, Coefficient of Variation, Covariance, Correlation and Beta Coefficient of EBL

F/y	MVPS (Rs.)	Dividend (Rs.)	Return (R_{EBL})	$R_{EBL} - \bar{R}_{EBL}$	$(R_{EBL} - \bar{R}_{EBL})^2$	$R_{BI} - \bar{R}_{BI}$	$(R_{EBL} - \bar{R}_{EBL})(R_{BI} - \bar{R}_{BI})$
064/065	3132						
065/66	2455	519	-0.0504	-0.1892	0.0358	0.3229	-0.06109
066/67	1630	358	-0.1902	-0.329	0.1082	-0.256	0.084224
067/68	1094	153	-0.2350	-0.3738	0.1397	-0.4162	0.155576
068/069	1033	477	0.3803	0.2415	0.0583	-0.2814	-0.06796
069/070	1591	255	0.7870	0.6482	0.4202	0.6306	0.408755
Total		**$\sum R_{EBL}$ = 0.6917**		**$\sum(R_{EBL} - \bar{R}_{EBL})^2$ = 0.7622**		**$\sum(R_{EBL} - \bar{R}_{EBL})(R_{BI} - \bar{R}_{BI})$ = 0.5195**	

$$R_{EBL} = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

For the fiscal year, 2065/066,

$$= \frac{2455 - 3132 + 519}{3132} \times 100 = -0.0504$$

For the calculation of other fiscal year, same process will be repeated.

Expected Return ($\bar{R}_{EBL}$) = $\frac{\sum R_{EBL}}{N}$ = 0.1383

Risk (δ_{EBL}) = $\sqrt{\frac{\sum(R_{EBL} - \bar{R}_{EBL})^2}{N-1}}$ = 0.4365

Variance $(\delta_{EBL})^2$ = 0.1905

Coefficient of Variation (CV) = $\frac{\delta_{EBL}}{\bar{R}_{EBL}}$ = 3.1562

Covariance between Return of Banking Industry & Return of EBL ($COV_{EBL\ \&\ BI}$)

= $\frac{\sum(R_{BI} - \bar{R}_{BI})\,(R_{EBL} - \bar{R}_{EBL})}{N-1} = \frac{0.5195}{5-1}$ = 0.1299

Correlation between Return of EBL & Return of Banking Industry ($r_{EBL\ \&\ BI}$)

= $\frac{COV_{EBL\ \&\ BI}}{\delta_{EBL} \times \delta_{BI}} = \frac{0.1299}{0.4365 \times 0.4527}$ = 0.6574

Beta Coefficient (β_{EBL}) = $\frac{COV_{EBL\ \&\ BI}}{\delta_{BI}{}^2} = \frac{0.1299}{0.4527^2}$ = 0.6339

Systematic Risk (SR) = $r_{EBL\ \&\ BI} \times \delta_{EBL}$ = 0.6574 × 0.4365 = 0.2870

Unsystematic Risk (USR) = $\delta_{EBL} - (r_{EBL\ \&\ BI} \times \delta_{EBL})$ = 0.4365 – 0.2870 = 0.1495

Proportion of Systematic Risk in Total Risk = $\frac{SR}{Total\ Risk} = \frac{0.2870}{0.4365}$ × 100 = 65.75%

Proportion of Unsystematic Risk in Total Risk = $\frac{USR}{Total\ Risk} = \frac{0.1495}{0.4365}$ × 100 = 34.25%

Appendix – IV

Calculation of Total Dividend of BOK

Year	MVPS (Rs.)	Cash Dividend (Rs.)	Stock Dividend		Total Dividend (Rs.)
			%	Amount (Rs.)	
2065/066	1825	7.37	40	336	343
2066/067	840	15	15	86	101
2067/068	570	16.75	18	113	130
2068/069	628	21.23	5	28	49
2069/070	553	0.74	14	79	80
2070/071	565				

Stock Dividend (In Rs.) = $\frac{Next\ Year\ MVPS \times Current\ Year\ Stock\ Dividend\ In\ \%}{100}$

For the fiscal year 2065/066,

$$\frac{840 \times 40}{100} = \text{Rs. } 336$$

Same process will be repeated for the calculation of other year stock dividend.

Appendix - V

Calculation of Annual Return, Expected Return, Risk, Coefficient of Variation, Covariance, Correlation and Beta Coefficient of BOK

F/y	MVPS (Rs.)	Dividend (Rs.)	Return (R_{BOK})	R_{BOK} - $\bar{R}_{BOK}$	(R_{BOK} - $\bar{R}_{BOK}$)²	R_{BI} - $\bar{R}_{BI}$	(R_{BOK} - $\bar{R}_{BOK}$) (R_{BI} - $\bar{R}_{BI}$)
064/65	2350						
065/66	1825	343	-0.0774	0.0291	0.0008	0.3229	0.0094
066/67	840	101	-0.4844	-0.3778	0.1427	-0.256	0.0967
067/68	570	130	-0.1667	-0.0601	0.0036	-0.4162	0.0250
068/069	628	49	0.1877	0.2943	0.0866	-0.2814	-0.0828
069/070	553	80	0.0080	0.1145	0.0131	0.6306	0.0722
Total		**$\sum R_{BOK}$ = -0.5328**		**$\sum(R_{BOK} - \bar{R}_{BOK})^2$ = 0.2469**		**$\sum(R_{BOK} - \bar{R}_{BOK})(R_{BI} - \bar{R}_{BI})$ = 0.1205**	

$$R_{BOK} = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

For the fiscal year, 2065/066,

$$= \frac{1825 - 2350 + 343}{2350} \times 100 =$$

For the calculation of other fiscal year, same process will be repeated.

Expected Return ($\bar{R}_{BOK}$) = $\frac{\sum R_{BOK}}{N}$ = -0.1066

Risk (δ_{BOK}) = $\sqrt{\frac{\sum(R_{BOK} - \bar{R}_{BOK})^2}{N-1}}$ = 0.2484

Variance $(\delta_{BOK})^2$ = 0.0617

Coefficient of Variation (CV) = $\frac{\delta_{BOK}}{\bar{R}_{BOK}} = \frac{0.2484}{0.1066} = 2.3302$

Covariance between Return of Banking Industry & Return of BOK ($COV_{BOK\ \&\ BI}$)

$= \frac{\sum(R_{BI} - \bar{R}_{BI})\,(R_{BOK} - \bar{R}_{BOK})}{N-1} = \frac{0.1205}{5-1} = 0.0301$

Correlation between Return of BOK & Return of Banking Industry ($r_{BOK\ \&\ BI}$)

$= \frac{COV_{BOK\ \&\ BI}}{\delta_{BOK} \times \delta_{BI}} = \frac{0.0301}{0.2484 \times 0.4527} = 0.2677$

Beta Coefficient (β_{BOK}) = $\frac{COV_{BOK\ \&\ BI}}{\delta_{BI}{}^2} = \frac{0.0301}{0.4527^2} = 0.1469$

Systematic Risk (SR) = $r_{BOK\ \&\ BI} \times \delta_{BOK} = 0.2677 \times 0.2484 = 0.0665$

Unsystematic Risk (USR) = $\delta_{BOK} - (r_{BOK\ \&\ BI} \times \delta_{BOK}) = 0.2484 - 0.0665 = 0.1819$

Proportion of Systematic Risk in Total Risk = $\frac{SR}{Total\ Risk} = \frac{0.0665}{0.2484} \times 100 = 26.77\%$

Proportion of Unsystematic Risk in Total Risk = $\frac{USR}{Total\ Risk} = \frac{0.1819}{0.2484} \times 100 = 73.23\%$

Appendix – VI

Calculation of Total Dividend of NABIL

Year	MVPS (Rs.)	Cash Dividend (Rs.)	Stock Dividend		Total Dividend (Rs.)
			%	Amount (Rs.)	
2065/066	4899	35	50	1192	1227
2066/067	2384	30	40	501	531
2067/068	1252	30	0	0	30
2068/069	1355	40	20	363	403
2069/070	1815	40	25	478	518
2070/071	1910				

Stock Dividend (In Rs.) = $\frac{Next\ Year\ MVPS \times Current\ Year\ Stock\ Dividend\ In\ \%}{100}$

For the fiscal year 2065/066,

$\frac{2384 \times 50}{100}$ = Rs. 1192

Same process will be repeated for the calculation of other year stock dividend.

Appendix – VII

Calculation of Annual Return, Expected Return, Risk, Coefficient of Variation, Covariance, Correlation and Beta Coefficient of NABIL

F/y	MVPS (Rs.)	Dividend (Rs.)	Return (R_{NABIL})	R_{SCBNL} - $\bar{R}_{NABIL}$	(R_{NABIL} - $\bar{R}_{NABIL}$)²	R_{BI} - $\bar{R}_{BI}$	(R_{NABIL} - $\bar{R}_{NABIL}$) (R_{BI} - $\bar{R}_{BI}$)
064/65	5275						
065/66	4899	1227	-0.2629	-0.3761	0.1415	0.3229	-0.1214
066/67	2384	531	-0.2521	-0.3653	0.1334	-0.256	0.0935
067/68	1252	30	0.1062	-0.007	0.0000	-0.4162	0.0029
068/069	1355	403	0.6369	0.5237	0.2743	-0.2814	-0.1474
069/070	1815	518	0.3377	0.2245	0.0504	0.6306	0.1416
Total		**$\sum R_{NABIL}$ = 0.5659**		**$\sum(R_{NABIL}$ - $\bar{R}_{NABIL})^2$ = 0.5996**		**$\sum(R_{NABIL}$ - $\bar{R}_{NABIL})$ (R_{BI} - $\bar{R}_{BI}$) = -0.0308**	

$$R_{NABIL} = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

For the fiscal year, 2063/064,

$$= \frac{4899 - 5275 + 1227}{5275} \times 100 = -0.2629$$

For the calculation of other fiscal year, same process will be repeated.

Expected Return ($\bar{R}_{NABIL}$) = $\frac{\sum R_{NABIL}}{N} = 0.1132$

Risk (δ_{NABIL}) = $\sqrt{\frac{\sum(R_{NABIL} - \bar{R}_{NABIL})^2}{N-1}} = 0.3872$

Variance $(\delta_{NABIL})^2$ = 0.1499

Coefficient of Variation (CV) = $\frac{\delta_{NABIL}}{\bar{R}_{NABIL}} = \frac{0.3872}{0.1132} = 3.4205$

Covariance between Return of Banking Industry & Return of NABIL ($COV_{NABIL\ \&\ BI}$)

$= \frac{\sum(R_{BI} - \bar{R}_{BI})\ (R_{NABIL} - \bar{R}_{NABIL})}{N-1} = \frac{-0.0308}{5-1} = 0.0077$

Correlation between Return of NABIL & Return of Banking Industry ($r_{NABIL\ \&\ BI}$)

$= \frac{COV_{NABIL\ \&\ BI}}{\delta_{NABIL} \times \delta_{BI}} = \frac{0.0077}{0.3872 \times 0.4527} = 0.0439$

Beta Coefficient (β_{NABIL}) = $\frac{COV_{NABIL\ \&\ BI}}{\delta_{BI}{}^2} = \frac{0..0077}{0.4527^2} = 0.0376$

Systematic Risk (SR) = $r_{NABIL\ \&\ BI} \times \delta_{NABIL}$ = 0.0439 × 0.3872= 0.017

Unsystematic Risk (USR) = $\delta_{NABIL} - (r_{NABIL\ \&\ BI} \times \delta_{NABIL})$ = 0.3872 – 0.017 = 0.3702

Proportion of Systematic Risk in Total Risk = $\frac{SR}{Total\ Risk} = \frac{0.017}{0.3872} \times 100 = 4.39\%$

Proportion of Unsystematic Risk in Total Risk = $\frac{USR}{Total\ Risk} = \frac{0.3702}{0.3872} \times 100 = 95.61\%$

Appendix – VIII

Calculation of Total Dividend of SBI

Year	MVPS (Rs.)	Cash Dividend (Rs.)	Stock Dividend		Total Dividend (Rs.)
			%	Amount (Rs.)	
2065/066	1900	2.11	40	296	299
2066/067	741	5	12.50	71	76
2067/068	565	5	12.50	79	84
2068/069	635	5	12.50	106	111
2069/070	850	7.50	12.50	123	131
2070/071	984				

Stock Dividend (In Rs.) = $\frac{Next\ Year\ MVPS \times Current\ Year\ Stock\ Dividend\ In\ \%}{100}$

For the fiscal year 2065/066,

$\frac{741 \times 40}{100}$ = Rs. 269

Same process will be repeated for the calculation of other year stock dividend.

Appendix - IX

Calculation of Annual Return, Expected Return, Risk, Coefficient of Variation, Covariance, Correlation and Beta Coefficient of SBI

F/y	MVPS (Rs.)	Dividend (Rs.)	Return (R_{SBI})	R_{SBI} - $\bar{R}_{SBI}$	$(R_{SBI} - \bar{R}_{SBI})^2$	R_{BI} - $\bar{R}_{BI}$	$(R_{SBI} - \bar{R}_{SBI})(R_{BI} - \bar{R}_{BI})$
064/65	1511						
065/66	1900	299	0.4553	0.3300	0.1089	0.3229	0.1066
066/67	741	76	-0.5700	-0.6953	0.4834	-0.256	0.1780
067/68	565	84	-0.1242	-0.2495	0.0622	-0.4162	0.1038
068/069	635	111	0.3204	0.1951	0.0380	-0.2814	-0.0549
069/070	850	131	0.5449	0.4196	0.1760	0.6306	0.2646
Total		**$\sum R_{SBI}$ = 0.6264**		**$\sum(R_{SBI} - \bar{R}_{SBI})^2$ = 0.8687**		**$\sum(R_{SBI} - \bar{R}_{SBI})(R_{BI} - \bar{R}_{BI})$ = 0.5981**	

$$R_{SBI} = \frac{P_1 - P_0 + D_1}{P_0} \times 100$$

For the fiscal year, 2065/066,

$$= \frac{1900 - 1511 + 299}{1511} \times 100 = 0.4553$$

For the calculation of other fiscal year, same process will be repeated.

Expected Return ($\bar{R}_{SBI}$) = $\frac{\sum R_{SBI}}{N}$ = 0.1253

Risk (δ_{SBI}) = $\sqrt{\frac{\sum(R_{SBI} - \bar{R}_{SBI})^2}{N-1}}$ = 0.466

Variance $(\delta_{SBI})^2$ = 0.2172

Coefficient of Variation (CV) = $\frac{\delta_{SBI}}{\bar{R}_{SBI}} = \frac{0.466}{0.1253}$ = 3.7197

Covariance between Return of Banking Industry & Return of SCBNL ($COV_{SBI\ \&\ BI}$)

$= \frac{\sum(R_{BI} - \bar{R}_{BI})(R_{SBI} - \bar{R}_{SBI})}{N-1} = \frac{0.5981}{5-1}$ = 0.1495

Correlation between Return of SBI & Return of Banking Industry ($r_{SBI\ \&\ BI}$)

$= \frac{COV_{SBI\ \&\ BI}}{\delta_{SBI} \times \delta_{BI}} = \frac{0.1495}{0.4660 \times 0.4527} = 0.7087$

Beta Coefficient (β_{SBI}) $= \frac{COV_{SBI\ \&\ BI}}{\delta_{BI}^2} = \frac{0.1495}{0.4527^2} = 0.7295$

Systematic Risk (SR) = $r_{SBI\ \&\ BI} \times \delta_{SBI} = 0.7087 \times 0.466 = 0.3303$

Unsystematic Risk (USR) = $\delta_{SBI} - (r_{SBI\ \&\ BI} \times \delta_{SBI}) = 0.466 - 0.3303 = 0.1357$

Proportion of Systematic Risk in Total Risk = $\frac{SR}{Total\ Risk} = \frac{0.3303}{0.466} \times 100 = 70.88\%$

Proportion of Unsystematic Risk in Total Risk = $\frac{USR}{Total\ Risk} = \frac{0.1357}{0.466} \times 100 = 29.12\%$

Appendix X

Calculation of Required Rate of Return

Bank Name	R_f	$\bar{R}_{BI}$	R_f	β	R
EBL	0.034	0.0430	0.034	0.6339	0.0397
NABIL	0.034	0.0430	0.034	0.0376	0.0343
BOK	0.034	0.0430	0.034	0.1469	0.0353
SBI	0.034	0.0430	0.034	0.7295	0.0406

Required rate of return (R) = $R_f + (\bar{R}_{BI} - R_f)\ \beta$

Appendix XI

Calculation of Coefficient of Variation between NABIL & EBL Bank

F/Y	R_{EBL} - $\bar{R}_{EBL}$	R_{NABIL} - $\bar{R}_{NABIL}$	$(R_{EBL}$ - $\bar{R}_{EBL})$ $(R_{NABIL}$ - $\bar{R}_{NABIL})$
065/66	-0.1892	-0.3761	0.0712
066/67	-0.329	-0.3653	0.1202
067/68	-0.3738	-0.007	0.0026
068/069	0.2415	0.5237	0.1265
069/070	0.6482	0.2245	0.1455
$\sum(R_{EBL} - \bar{R}_{EBL})$ $(R_{NABIL}$ - $\bar{R}_{NABIL})$			0.466

Covariance between Return of EBL & Return of NABIL ($COV_{EBL\ \&\ NABIL}$)

$$= \frac{\sum(R_{EBL} - \bar{R}_{EBL})\,(R_{NABIL} - \bar{R}_{NABIL})}{N-1} = \frac{0.466}{5-1} = 0.1165$$

Portfolio return ($\bar{R}_P$) = $W_A \bar{R}_A + W_B \bar{R}_B$

Portfolio Risk (δ_P) = $\sqrt{W_A^2 \delta_A^2 + W_B^2 \delta_B^2 + 2COV_{AB} W_A W_B}$

If,

W_A = 0.50 and W_B = 0.50

For, EBL & NABIL

$\bar{R}_P = 0.50 \times 0.1383 + 0.50 \times 0.1132 = 0.1258$

$\delta_P = \sqrt{0.50^2 \times 0.4365^2 + 0.50^2 \times 0.3872^2 + 2 \times 0.1165 \times 0.50 \times 0.50}$

= 0.1910

Appendix XII

Calculation of Coefficient of Variation between EBL & SBI Bank

F/Y	R_{EBL} - $\bar{R}_{EBL}$	R_{SBI} - $\bar{R}_{SBI}$	$(R_{EBL}$ - $\bar{R}_{EBL})$ $(R_{SBI}$ - $\bar{R}_{SBI})$
065/66	-0.1474	0.2781	-0.1892
066/67	-0.2646	-0.5881	-0.329

067/68	-0.239	-0.2115	-0.3738
068/069	0.0034	0.152	0.2415
069/070	0.6478	0.3697	0.6482
$\sum(\boldsymbol{R_{EBL}} - \bar{\boldsymbol{R}}_{\boldsymbol{EBL}})\ (\boldsymbol{R_{SBI}} - \bar{\boldsymbol{R}}_{\boldsymbol{SBI}})$			0.5787

Covariance between Return of EBL & Return of SBI ($COV_{EBL\ \&\ SBI}$)

$= \frac{\sum(R_{EBL} - \bar{R}_{EBL})\ (R_{SBI} - \bar{R}_{SBI})}{N-1} = \frac{0.5787}{5-1} = 0.1447$

Portfolio return ($\bar{R}_P$) = $W_A \bar{R}_A + W_B \bar{R}_B$

Portfolio Risk (δ_P) = $\sqrt{W_A^2 \delta_A^2 + W_B^2 \delta_B^2 + 2COV_{AB} W_A W_B}$

W_A = 0.50 and W_B = 0.50

$\bar{R}_P = 0.50 \times 0.1388 + 0.50 \times 0.1253 = 0.1318$

$\delta_P = \sqrt{0.50^2 \times 0.4365^2 + 0.50^2 \times 0.466^2 + 2 \times 0.1447 \times 0.50 \times 0.50}$

= 0.2219

Appendix XIII

Calculation of Coefficient of Variation between EBL & BOK Bank

F/Y	$\boldsymbol{R_{EBL}} - \bar{\boldsymbol{R}}_{\boldsymbol{EBL}}$	$\boldsymbol{R_{BOK}} - \bar{\boldsymbol{R}}_{\boldsymbol{BOK}}$	$(\boldsymbol{R_{EBL}} - \bar{\boldsymbol{R}}_{\boldsymbol{EBL}})\ (\boldsymbol{R_{BOK}} - \bar{\boldsymbol{R}}_{\boldsymbol{BOK}})$
065/66	-0.1892	0.0291	-0.0055
066/67	-0.3290	-0.3778	0.1243
067/68	-0.3738	-0.0601	0.0225

068/069	0.2415	0.2943	0.0711
069/070	0.6482	0.1145	0.0742
$\sum(\boldsymbol{R_{EBL}} - \bar{\boldsymbol{R}}_{\boldsymbol{EBL}})\,(\boldsymbol{R_{BOK}} - \bar{\boldsymbol{R}}_{\boldsymbol{BOK}})$			0.2865

Covariance between Return of EBL & Return of SBI ($COV_{\boldsymbol{EBL}\,\&\,BOK}$)

$= \frac{\sum(R_{EBL} - \bar{R}_{EBL})\,(R_{BOK} - \bar{R}_{BOK})}{N-1} = \frac{0.2865}{5-1} = 0.0716$

Portfolio return ($\bar{R}_P$) = $W_A\,\bar{R}_A + W_B\,\bar{R}_B$

Portfolio Risk (δ_P) = $\sqrt{W_A^2\,\delta_A^2 + W_B^2\delta_B^2 + 2COV_{AB}W_AW_B}$

W_A = 0.50 and W_B = 0.50

$\bar{R}_P = 0.50 \times 0.1388 + 0.50 \times (0.1066) = 0.0161$

$\delta_P = \sqrt{0.50^2 \times 0.4365^2 + 0.50^2 \times 0.2484^2 + 2 \times 0.0716 \times 0.50 \times 0.50}$

= 0.1465

Appendix XIV

Hypothesis Test

$\boldsymbol{R_{EBL}}$	$\boldsymbol{R_{NABIL}}$	$\boldsymbol{R_{BOK}}$	$\boldsymbol{R_{SBI}}$	$\boldsymbol{R_{EBL}^2}$	$\boldsymbol{R_{NABIL}^2}$	$\boldsymbol{R_{BOK}^2}$	$\boldsymbol{R_{SBI}^2}$
-0.0504	-0.2629	-0.0774	0.4553	0.0025	0.0691	0.0060	0.2073
-0.1902	-0.2521	-0.4844	-0.57	0.0362	0.0636	0.2346	0.3249

-0.235	0.1062	-0.1667	-0.1242	0.0552	0.0113	0.0278	0.0154
0.3803	0.6369	0.1877	0.3204	0.1446	0.4056	0.0352	0.1027
0.787	0.3377	0.008	0.5449	0.6194	0.1140	0.0001	0.2969
0.6917	**0.5658**	**-0.5328**	**0.6264**	**0.8579**	**0.6636**	**0.3037**	**0.9472**

$\sum R_{EBL}$ = 0.6917

$\sum R_{NABIL}$= 0.5658

$\sum R_{BOK}$ = -0.5328

$\sum R_{SBI}$ = 0.6264

$\sum R_{EBL}{}^2$ = 0.8579

$\sum R_{NABIL}{}^2$ = 0.6636

$\sum R_{BOK}{}^2$ = 0.3037

$\sum R_{SBI}{}^2$ = 0.9472

N = 20

Grand Total (T) = $\sum R_{EBL}$+ $\sum R_{NABIL}$ + $\sum R_{BOK}$ + $\sum R_{SBI}$

= (0.6917) + (0.5658) + (-0.5328) + (0.6264) = 1.3511

Correction Factor (CF) = $\frac{T^2}{N} = \frac{(1.3511)^2}{20}$ = 0.0913

Total Sum of Square (TSS) = $\sum R_{EBL}{}^2 + \sum R_{NABIL}{}^2 + \sum R_{NABIL}{}^2 + \sum R_{BOK}{}^2$ - CF

= 0.8579 + 0.6636 + 0.3037 + 0.9472 – 0.0913 = 2.7724

Sum of Square between Sample (SSC) =

$$\frac{(\sum R_{EBL})^2}{N_{EBL}} + \frac{(\sum R_{NABIL})^2}{N_{ANBIL}} + \frac{(\sum R_{BOK})^2}{N_{BOK}} + \frac{(\sum R_{SBI})^2}{N_{SBI}} - CF$$

$= \frac{(0.6917)^2}{5} + \frac{(0.5658)^2}{5} + \frac{(-0.5328)^2}{5} + \frac{(0.6264)^2}{5} - 0.0913 = 0.0901$

Sum of Square with in Sample (SSW) = TSS – SSC = 2.7724 – 0.0901 = 2.6823

Appendix XV

One Way ANOVA Table

Source of Variation	Sum of Square	Degree of Freedom	Mean Sum of Square	F- ratio

Between Samples	0.0901	4 – 1 = 3,	$\frac{0.0901}{3} = 0.0300$	
Within Samples	2.6823	16	$\frac{2.6823}{16} = 0.1676$	$\frac{0.03}{0.1676} = 0.1790$
Total	**-0.4275**	**20 – 4 = 16**		